

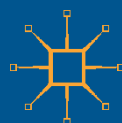


2nd
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THE HISTORY OF SCIENCE FICTION

ADAM ROBERTS

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Adam Roberts

The History of Science Fiction

Second Edition

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Adam Roberts
Department of English
Royal Holloway, University of London
Egham, UK

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PREFACE TO SECOND EDITION

The first edition of *The Palgrave History of Science Fiction* contained fourteen chapters. This second edition has sixteen. From this you may deduce that this version is longer than the first, and so it is. Indeed, adding new chapters is the least of the revisions undertaken here. Since first writing this history my ignorance of science fiction has decreased, and my views on the field have accordingly changed in various ways, and to various degrees, some smaller and some larger. I have taken this as my cue to revise this *History* in a more comprehensive manner than I might otherwise have done. Indeed, I ended up rewriting large portions from scratch. Not a chapter here is exactly as it was in the first edition. A new chapter on ‘21st-century Science Fiction’ replaces what was in 2006 a briefly indicative coda; and a brief ‘interlude’ on pre-1600 SF has been fleshed-out to a whole new chapter on the medieval and early Renaissance periods. I have added many new sections, expanding discussion of (to mention only a few) neo-Latin fantasies of the 17th and 18th centuries, alternate-history, video games and comic books. There have also been developments in what might be called—though the term is a red rag to some readers—the ‘theoretical’ underpinnings of the study. In the first edition I sought to identify what I take to be the *systematic* nature of the science fictional imagination: the way many texts not only posit a ‘novum’, or new thing, but extrapolate systematically the differences such a novum would make across society and culture as a whole. I still consider systematisation to be instrumental to the way the genre works, and in this second edition I have drawn on Charles Taylor’s particular ideas concerning ‘mobilization’ as a way of focussing more precisely the strategies and socio-cultural determinants of this way of thinking, and writing. I have included a more nuanced sense of the cultural logic of the Reformation, the parameters of the discourses of Protestantism and the way these feed through into SF. Not everybody considers nuance an unalloyed good.¹ I didn’t think, though, that I could justify a revisionary move towards greater crudity, and so nuance is what I went with. That said, nuance can only go so far when the subject is so large and the discussion of individual figures so often squeezed by space. The most I can claim is: I have done my best.

When I took up the commission to write the first edition of this study, those many years ago, I assumed, without thinking too much about it, that I would begin in the early 19th century and that I'd trace SF through to the present day in a fairly straightforward manner. I thought that because almost all the critical histories of science fiction treated it that way. But actually researching that version of the book turned up such a huge mass of patently SF texts from the 18th and 17th centuries that I was compelled radically to revise my ideas. I ended up writing a study that claimed SF begins around 1600, as a distinctly Protestant kind of 'fantastic' writing that has budded off from the older (broadly) Catholic traditions of magical and fantastic romances and stories, responding to the new sciences, the advances in which were also tangled up in complex ways with Reformation culture. Of course, SF was a small-scale matter until the end of the 20th century when it breaks into the pop-cultural big time; but then again that's true of most literary cultural movements. Few SF fans are aware of it, I think, but there's a reason why modern SF returns so often to a mode of materialist sublime, which fans call sense of wonder (transcendence, infinity); why modern SF is so fascinated, often in oblique ways, with questions of atonement and the status of saviour figures. SF, I argue, is the direct descendant of the Reformation. So is fantasy I think; although that is an argument for a different book.

When this *History* first appeared my argument that SF begins out of the Protestant Reformation in Europe—a thesis I consider both original and true—met with little success. The book was occasionally reviewed, sometimes positively, sometimes less sympathetically, but its core argument has, so far, persuaded few scholars in the field. This may, of course, be because it is wrong. Most scholars of the history of SF, and most fans too, 'believe in' a shorter-scale history of the genre, dating the beginning of science fiction to the early 19th century, or to the later age of Verne and Wells, or perhaps to the 1920s. In some cases these arguments are the result of cogently worked-through theories. Often, though, I get the impression that fans simply prefer the SF written by Wells, E E 'Doc' Smith or Ursula Le Guin, to the SF written by Kepler and Cyrano. Perhaps they think it better. Perhaps they would rather read such works than wade through the tedium of 17th-century neo-Latin interplanetary voyages. Who could blame them? Such questions of taste, though, seem to me to have little to do with the actual development and history of the genre. More to the point, I think truncations of the historical narrative to a 'back catalogue' of still-readable works palatable to modern fandom does a violence to the mode. My core argument is not just that SF begins out of the Reformation; it is that the fierce cultural climate of that time *shaped* SF, wrote its DNA in ways that manifest substantively even into the 21st century. I worked on this second edition throughout 2015, a year in which SF fandom fought itself with some bitterness and to no real purpose. One of the things fans

argue over has to do with the traditions of the genre, science fiction's heritage. Some fans think the genre community has forgotten the values of traditional SF. Actually, I tend to think this is true. But that's because I consider the 'tradition' of SF to extend further back than to a bunch of white men writing in 1950s North America.

One facet of the genre that tends to get overlooked—tends, indeed, to be actively buried under that discursive avalanche called Anglo-American cultural imperialism—is that through the 17th and 18th centuries and into the 19th century, science fiction was dominated by French writers, with British, Neo-Latin and German writers also contributing substantially, if secondarily. Jules Verne is sometimes taken as the starting point of SF; the truth, ironically enough, is that he is more like the end-point, at least of a dominant franco-phone SF tradition. Lots of French SF was written through the 20th century of course, and continues to be written into the 21st, but the centre of gravity of the genre shifted in pronounced ways towards North America with the predominance of pulp. It's not clear to me why France slips from its position of genre prominence to its second-fiddle status; but I would say that when people talk about SF beginning with Gernsback in the 1920s they ought rather to talk about hegemonically American SF beginning then. A second, and equally major, reorientation of the genre took place in the last decades of the 20th century, as SF became less prominently a written and more globally a visual medium.

A great many people helped me work on this revision, rather more than were able to help on the first edition—a function, this, of the increased facility of connection provided by online interaction and social media. I can't list everybody but would like to thank Mark Bould, Andrew M Butler, Kim Curran, Susan Gray, Robert Eaglestone, Caroline Edwards, Niall Harrison, Maureen Kincaid-Speller, Paul Kincaid, Alan Jacobs, Jessica Langer, Scott Eric Kaufman, Camille Lofters, Ben Markovits, Rob Maslen, Glen Mehn, David Moles, Glyn Morgan, Abigail Nussbaum, Chuckie Palmer-Patel, Anne Perry, Tom Pollock, Paul March-Russell, Jared Shurin, Simon Spanton, James Smythe, Francis Spufford, Neal Tringham and Sheryl Vint. I would like to thank John Clute, who wrote a rigorously critical review of the first edition that proved genuinely helpful to me in formulating the second. In similar mode I would like to thank the anonymous reader who provided Palgrave with a lengthy and detailed report on an earlier draft of this second edition; whoever he or she is, they aided my work immeasurably and I am very grateful. Thanks also to my colleagues and students at Royal Holloway University of London and heartfelt gratitude to my family, especially to my wife Rachel. Individuals who are actually discussed in the body of this book are not thanked here, although several of them proved very helpful in the work on this revision.

Foreign titles are given in their original forms. All translations from Greek, Latin and French are my own, unless specifically stated otherwise. I lack the linguistic facility to attempt translation from other tongues, and have relied here on the work of others, who are of course cited. I have transliterated Greek names and titles directly, except where a name is so familiar in an Anglicised form that direct transliteration would tend to confuse (so, Lucian not Loukianos). Where works have variant titles, something common in SF, I cite what I consider the title by which it is most widely known.

NOTE

1. See for example Kieran Healy's 'Fuck Nuance' *Crooked Timber* (August 2015): <http://crookedtimber.org/2015/08/31/fuck-nuance/>

PREFACE TO THE FIRST EDITION (2006)

Science Fiction is too large a thing to be represented exhaustively in a critical history, even in one as lengthy as this. The present study is not a complete account of the genre, but rather an attempt to trace a line that connects one specific mode of ‘fantastic’ literature—which we now call science fiction—from earliest times through to the present day. The majority of texts examined are novels, short or long, and this remains the dominant form of SF: although the short story (a slightly different thing from short novels), cinema, TV, comic books and other forms of cultural production play an increasingly large part in the later stages. As a critical history, this work also has a certain case to make. I hope to avoid tendentiousness, but my argument is not neutral (even if such a thing as a purely neutral critical argument could exist), and I sketch it out here in this preface so that readers can be forewarned, and prepare themselves to read what follows in sympathetic or hostile frame of mind, whichever suits them better.

I argue that the roots of what we now call science fiction are found in the fantastic voyages of the ancient Greek novel; I use the Vernean phrase *voyages extraordinaires*, which I find to be the most supple and useful descriptor for these sorts of texts. Narratives of travel and adventure, often with fantastic (which is to say, impossible or fantastical) interludes, were amongst the most popular modes of ancient culture. Epics provide many examples, Odysseus’ encounter with the Cyclops, or with the goddess Kirke who turned his men to pigs, for instance. Nor is this a surprising cultural development, given that the Greeks were a culture in which actual travel and exploration played major roles. I argue that amongst these many accounts of lengthy and entertaining sea voyages, or treks by land, is a category of *voyages extraordinaires* of a different sort: voyages into the sky, and especially voyages to other planets. It was possible for a Greek, in theory, to charter a ship and travel to the Sicily, to the Gates of Herakles, or even (we can hypothecate in the absence of evidence that such voyages took place) beyond the setting sun to the Fortunate Islands, to America or the Arctic wastes. This is merely to say that the technologies of travel available to the Greeks enabled such voyages. But it was, of course, not possible for

these people to travel to the Moon, as Antonius Diogenes's protagonists do. Moving the journey in this upwards direction represents a radical departure in the mode of traveller's tales.

In other words, the ur-form of the science fiction text is extraordinary travel, with stories of interplanetary travel the most influential. It still seems to me that stories of journeying through space form the core of the genre, although many critics would disagree with me. Travels upwards through space, or sometimes downwards into hollow-Earth marvels (distinguished from more conventional, ordinary travels over the surface of the globe) are the trunk, as it were, from which the various other modes of SF branch off. Speaking broadly, these other branches are twofold. First there are travels through time as a corollary of travels through space. It is not, I think, coincidental that this sub-genre of SF comes into being and rapidly becomes vigorous in the late 19th and throughout the 20th centuries—which is to say, at that time when science was establishing the intimate inter-relations between these quantities of time and space. A second branch, a major bough in fact (to continue the metaphor), is stories about technology. Because long-distance travel already involves a range of complex technologies—as, for example, sail-ships, technologies of long-term life-support away from land, navigation, military ordnance and various others—it is, again, not surprising that tales of technology begin as embedded elements in extraordinary voyages. The android-woman, fluent in all the world's languages, encountered in Charles Sorel's novel *Gazettes et nouvelles ordinaires de divers pays lointains* (*Gazettes and News from Various Faraway Countries*, 1632) represents an early instance of this sort of SF, and through the 19th century this mode of SF can be seen separating itself off from the voyage to become a more distinct sub-genre. Jules Verne is the first great genius of technology fiction in this mode, and by the 20th century techno-fiction had, arguably, become the dominant form of SF. In my first chapter I discuss science fiction and technology fiction as deserving equivalent theoretical attention.

These three forms, broadly conceived, delineate my rough sense of what science fiction is: stories of travel through space (to other worlds, planets, stars); stories of travel through time (into the past or into the future); and stories of imaginary technologies (machinery, robots, computers, cyborgs and cyberculture). There is a fourth form, utopian fiction, which is often discussed by critics of science fiction as belonging to any reasonable definition of the form. My assumption in this study is that utopian fiction is indeed science fiction extrapolated from philosophy and social theory rather than items of hypothecated technology or wholly new destinations. Some critics prefer to exclude utopias from a discussion of SF on the grounds that utopian extrapolation tends towards satire; which is to say, utopia must be satiric insofar as it takes its force from the implied contrast between the ideal society being described and the imperfect world in which the author and his/her readers actually live. I have some sympathy for this view, since I cling, perhaps naively, to the belief that the worlds encountered in SF's best texts are more than simply modified forms of *our* world—which is to say, that the genre embodies

a genuine and radical will to otherness, a fascination with the outer reaches of imaginative possibility. Not all utopias partake of this alterity. But utopias ought to be bracketed with SF nonetheless. For one thing, many practitioners of SF have regarded utopian fiction as part of their practice, and have themselves written utopias. For another, as SF developed it became more and more concerned with the intricacies of world building, in which writers construe alternate but self-consistent societies. Utopia's satirical impulse achieves its effects by actualising a world-building novum, and such world building has now become one of the most prized things that SF provides its readers: not just novums, but novums systematically extrapolated and integrated into a whole vision. 'Mainstream' SF is full of detailed, immersive world building and much of the grammar of such constructions derive from utopian fiction.¹

This thumbnail sketch already implies one of the major questions that must be addressed by any historian of science fiction. We may take the form as commencing with the interplanetary *voyages extraordinaire* of the Ancient Greek novel. We may then trace the development of these ideas through 17th-century works such as Johannes Kepler's *Somnium* (1634), Godwin's *The Man in the Moone, or a Discourse of a Voyage Thither by Domingo Gonsales* (1638) and Cyrano de Bergerac's *L'autre monde ou les états et empires de la lune* (1657). From this period to the present day it is possible to identify an effectively unbroken line of continual textual production in the science-fictional mode. The question, then, is: why is there so pronounced and so lengthy a gap in the record between the Greeks and the Renaissance? Over a thousand years pass between these two periods in which science fiction is not written. Why?

Several possible answers suggest themselves. In the present work I argue a particular line, and it happens to have important consequences for my definition of Science Fiction. Accordingly it is worth rehearsing here. In brief I argue that the re-emergence of Science Fiction is correlative to the Protestant Reformation. During the late 16th and early 17th centuries the balance of scientific enquiry shifted to Protestant countries, where the sort of speculation that could be perceived as contrary to biblical revelation could be undertaken with more (although not total) freedom. Descartes, for instance, settled in Holland in 1629, in part because his native Catholic culture was proving itself hostile to his scientific enquiries. In Descartes' mind was the recent condemnation of Galileo's astronomical work by the Catholic Church, a shocking development for many scientific thinkers at that time. Indeed, there were more shocking developments than this, especially for the more imaginatively minded (which is to say, science fictional) thinkers.

A little-known, but nonetheless key, development in the history of the genre, I would argue, occurred in 1600 when Giordano Bruno the Nolan was burnt to death by the Catholic Inquisition in Rome. Bruno's crime had been to argue that the universe was infinite, and that it contained innumerable worlds—an example of speculative rather than empirical science, and accordingly science-fictional. Bruno died for contradicting the teaching of the Catholic Church, but it takes a moment's consideration to realise why the idea

of innumerable inhabited worlds was deemed so shocking. Dante, for instance, postulated inhabitants on the various worlds of his cosmos (though in a Ptolemaic rather than a Copernican solar system), and his writing was considered to be rather pious than otherwise.

The problem can be put in these terms—summarised by William Empson in his posthumously published *Essays on Renaissance Literature* (1993): if there are many worlds, with many populations of beings upon them, then this tends to deny the uniqueness of the crucifixion, and so devalue Christianity itself, perhaps terminally. The Church teaches that God sent Christ to Earth to save humanity, a race created in his image. This was a singular, miraculous event, a sacrament that connects humanity to God or, more strictly speaking, provides humanity with the possibility of that connection. But if humanity is but one amongst many populations of beings in the cosmos, what of the others? Have they too been redeemed by their own Christs? If so, then would this not fatally degrade the uniqueness of Christ's sacrifice on *this* world? Or has God simply omitted to provide them with salvation—which would paint God in a very cruel light? Under the logic of the Ptolemaic system the solar system is a sort of extension of the Earth, inhabited by human souls or angels created directly by God, and the stars are a fixed sphere, a sort of immense decorative backdrop. In this cosmos a single Christ can redeem everything. But if the cosmos is infinite, this becomes difficult to sustain.

The revolutionary point of the Copernican cosmos is wholly to reconfigure the focus away from Earth and mankind. Either Christ died only once and God has ignored the rest of this vast creation, or else he died on every possible world. As Empson puts it, 'either the Father had been totally unjust to the Martians, or Christ was crucified on Mars too; indeed, on all inhabited planets, so that his identity in any one appearance became precarious' [Empson, 1:130]. Half a century later this idea was still so shocking, and so destabilising to Catholic orthodoxy, that Bruno could be burned to death for implying it.²

This may seem like an obscure point of theological quibbling, but I suggest that it marks a crucial point of cleavage in the development of Western science fiction. To an orthodox Catholic imagination a plurality of inhabited worlds becomes an intolerable supposition; other stars and planets become a *theological* rather than a material reality, as they were for Dante—a sort of spiritual window-dressing to God's essentially human-sized creation. But to a Protestant imagination (or to a sceptical humanist Catholic imagination, such as Descartes' or Voltaire's) the cosmos expands before the probing inquiries of empirical science through the 17th and 18th centuries, and the imaginative-speculative exploration of that universe expands with it. This is the science fiction imagination, and it becomes increasingly a function of Western Protestant culture. From this SF develops as an imaginatively expansive, and materialist mode of literature, as opposed to the magical-fantastic, fundamentally religious mode that comes to be known as fantasy. In saying so, I do not mean to suggest a priority of value or merit of one mode over the other. I read fantasy just as avidly as I read science fiction.

This, in turn, connects with another form of definition often applied to the mode; science fiction, in contemporary publishing and bookselling practice, is contradistinguished from fantasy, the latter involving tales of a fantastic or non-realist cast in which the narrative facilitator is magic rather than technology. The key text in the development of 20th-century fantasy (a genre of astonishing and continuing fertility) is Tolkien's *Lord of the Rings* (1952–3): elves, men, dwarves and hobbits, aided by a wizard, battle malign orcs and monsters as part of a cosmic war between the forces of good and the forces of evil. There are very few machines in *Lord of the Rings*, and most of those that do appear are aligned with the forces of evil. Instead it is magic that operates in the world, to good or ill effect. The action revolves around a golden ring imbued with magical powers, a device that renders the wearer invisible but also grants him or her enormous power to command.

The Lord of the Rings is a profoundly Catholic work, not so much in terms of conscious allegory (Tolkien always expressed 'cordial dislike' for allegory), as in its detailed working-out; a drama of fall and redemption, in which a saviour returns to overthrow evil. The use of a sacramental symbol—the gold band symbolising marriage in Christian service—as the core element of the fantasy is also significant. From a Catholic perspective something magical is involved in marriage, magical in the forceful sense that Jesus's miracles can also be described as magical. To a Catholic the communion bread actually becomes the body of Christ during mass; transubstantiation is a real process, another magical sacrament. To a Protestant worshipper the bread is *symbolic* of Christ, but is otherwise wholly material and bready.

This is to revisit the very rationale of the Protestant Reformation itself. Norman Davies, for instance, summarises the movement in the following terms:

The Protestant movement contained a very strong impulse to 'take the magic out of religion' ... none the less, in the fifteenth, sixteenth and seventeenth centuries Europe continued to be devoted to every form of magical belief. The landscape was filled with alchemists, astrologers, diviners, conjurers, healers and witches ... Magic held its own through the Reformation period. In this respect, therefore, the Protestant onslaught on magic enjoyed only partial success, even in the countries where Protestantism was to be nominally triumphant. But the intentions of the radicals were unmistakable. After Wyclif came Luther's attack on the indulgences (1517) and Calvin's dismissal of transubstantiation as 'conjury' (1536) ... Protestant Christianity was supposedly magic-free. (Davies, 405)

Davies goes on to point out that magic remained, stubbornly, even in this supposedly purged religion of rational and conscious belief ('it proved virtually impossible to abandon the consecration of church buildings, of battle standards, of food, of ships, and of burial grounds'). But a separation begins here in the broad stream of fantastic, or non-realist, fiction. Catholic imaginations countenance magic and produce traditional romance, magical-Gothic, horror,

Tolkienian fantasy and Marquezian magic realism. Protestant imaginations increasingly replace the instrumental function of magic with technological devices, and produce science fiction. This present *History* depends, then, upon a historicized definition of SF as that form of fantastic romance from which the magic has been replaced by the materialist discourses of science.

To say this is not to deny a distinctive Catholic strand in science fiction; indeed, on the contrary, I argue that this strand is present in the vast majority of good SF, whether written by Catholic authors or not. If I am asked to boil it down in a single sentence, my thesis is that science fiction is determined precisely by the *dialectic* between Protestant and Catholic imaginariums that emerged out of the particular cultural-ideological context of the 17th century. SF texts mediate these cultural determinants with different emphases, some more strictly materialist, some more mystical or magical. Many of the most celebrated works of what is sometimes called Catholic SF are deeply embedded in this sacramental, magical vision—it is this, I would argue, rather than a fascination with theological questions as such, that distinguishes Catholic SF. So, for instance, Walter M. Miller's *A Canticle for Leibowitz* (1960) spreads its narrative over many centuries, from the aftermath of a nuclear war in which society is reduced to primitivism, the gradual rebirth of civilisation and the growth of technology to the point where mankind once again plans rocket trips to the stars, and once again threatens to destroy itself with nuclear weapons. The coherence of this long narrative is provided by its focus on a group of monks in the American desert, and in large part Miller inhabits a detailed, realist-manner description of their quotidian life. But the novel also depends on several magical turns of events. One is the character of Leibowitz himself, a hermit in the post-nuclear desert who seems immortal (the same character appears in each of the chapters, though they are separated by centuries), and is indeed specifically identified with the Wandering Jew. As the bombs fall for a second time, a mutant head-like growth on the shoulder of a woman apparently comes to life. The magical element is not merely dropped into the novel for the sake of bizarreness. It functions as an endorsement of the supernatural, the presence of God, in a world that had been atom-bomb ruined by societies too purely secular and rational. Gene Wolfe's *Long Sun* tetralogy (1993–96)—one of the masterpieces of 20th-century SF—features as its hero a humble priest with many Graham Greene-like Catholic trappings, although the religion he serves is not Catholicism. The novels take place on a gigantic spaceship, tubular and revolving to provide gravity to those living on its inner surface. This ship is on a generations-long journey to a new world, and indeed, the journey has been so lengthy that the passengers have forgotten they inhabit a spaceship at all. The religion to which Silk, Wolfe's priest-hero, belongs is one in which 'windows' (advanced TV screens) display the personages of the gods themselves; but over the course of the novels these supposed gods are revealed to be nothing but the downloaded personalities of ancient individuals, several of whom have gone mad in their electronic environment. The overall trajectory of this series presents the unmasking of features of the world that had been

taken to be natural and supernatural, revealing them to be nothing but technological—a plotline we might term, utilising this crude binary, Protestant. Yet Catholic Wolfe cannot abandon magic; a mysterious and non-technological numinous being, ‘the Outsider’, lurks behind Silk’s actions all through the book, and the first novel opens with a revelation experienced by Silk in which—magically—the Outsider reaches through into the world of the long sun and provides insight. Wolfe’s most famous tetralogy, *The Book of the New Sun* (1980–87), is also science fiction figured as fantasy. Severian rises from apprentice Torturer, to Torturer proper, and eventually to world-emperor, travelling through a world so far into the future its bizarre rituals and paraphernalia seem magical. The fantastical-magical elements predominate, and the far-future technological features can never quite be reduced to a materialist explanation; appropriately so because, in a manner of speaking, the protagonist, Severian the Torturer, is Christ.

The narrative of this *History*, in other words, sees a nascent form of SF in Ancient Greece that disappears, or becomes suppressed, with the rise to cultural dominance of the Catholic Church; and which re-emerges when the new cosmology of the 16th century inflects the theology of Protestant thinkers in the 17th. The death of Bruno in 1600 is a sort of shorthand for this crux, and the doctrine of the plurality of worlds that engages 17th-century thinkers informs almost all the newer interplanetary texts that SF from this period involves. This means that when interplanetary travel romances return to Western culture in the 17th and 18th centuries, they are all vitally concerned with the *theological* implications of the aliens they describe. Where a modern-day rocket-man might greet extraterrestrials with some benign liberal platitude (‘we come in peace’), star-travellers in stories from this period are all keen to hear the answer to one crucial question: ‘Do you believe in Jesus Christ?’ When Francis Godwin’s hero travels to the Moon and meets space-aliens therein, his first words are ‘Jesus Maria’.

No sooner was the word Jesus out of my mouth but young and old fell all down upon their knees, at which I not a little rejoiced, holding up both their hands on high, and repeating certain words which I understood not. [Godwin, *Man in the Moone*, 96]

This is important because, for Godwin and his audience, space-aliens are not esoteric curiosities, but crucial proofs or disproofs of divine truth. In Godwin’s work, his Lunites are closely enough associated with the Earth to be able to share in the earthly Christ’s redemptive power. Wilkins’s *Discovery of a World in the Moone* (1638), for instance, postulates lunar inhabitants, immediately worrying whether such beings ‘are the seed of Adam, whether they are in a blessed estate, or else what means there may be for their salvation’. Wilkins quotes Tomasso Campanella to the effect that lunarians must be ‘liable to the same misery [of original sin] with us, out of which, perhaps, they were delivered by the same means as we, the death of Christ’ [Wilkins, 186–92]. The

topic re-emerges regularly in SF throughout the 19th and 20th centuries. C S Lewis's trilogy of science fiction novels (1938–45) are all concerned with these sorts of theological issue, and his solution to the problem is to argue that Christ is unique to Earth because only Earth has fallen into the clutches of the devil. The priest-protagonist of James Blish's *A Case of Conscience* (1958) is wracked with doubts because the aliens of the planet Lithia, living sinless lives in a terrestrial paradise, have no concept of God or soul. In a preface to a reprint of the book, Blish notes that he received letters from 'theologians who knew the present [i.e. 1958] Church position on the problem of the "plurality of worlds"', and quotes the opinion of Gerald Head:

If there are many planets inhabited by sentient creatures as most astronomers (including Jesuits) now suspect ... [a suspicion, I suggest, available to an orthodox Catholic thinker only relatively recently] ... then each one of such planets ... must fall into 'one of three categories':

- (a) Inhabited by sentient creatures, but without souls; so to be treated with compassion but extra-evangelically.
- (b) Inhabited by sentient creatures with fallen souls, through an original but not inevitable ancestral: so to be evangelized with urgent missionary charity.
- (c) Inhabited by sentient soul-endowed creatures that have not fallen, who therefore
 - (i) inhabit an unfallen, sinless paradisaical world;
 - (ii) who therefore we must contact not to propagandize, but in order that we may learn from them the conditions ... of creatures living in perpetual grace.
 [Blish, 9]

Blish adds the following comment to Head's assessment: 'the reader will observe ... that the Lithians fit none of these categories'. Ruiz-Sanchez, the Jesuit protagonist of the novel, comes to believe that the rational, civilized Lithians have in fact been created by the Devil in order to tempt Earth into disaster. At the novel's end (in a passage a non-believer will tend to read as a monstrous celebration of genocide) Ruiz-Sanchez exorcises the entire world literally *out of existence*, his rite of exorcism happening to coincide with a nuclear chain reaction set in motion by Earth workmen exploiting Lithian natural resources. The actual violence of this conclusion picks out a buried strain of hostility to the very notion of a 'plurality of inhabited worlds'. Blish's addition to Gerard Head's theological analysis of alien life (which might read something like '(d) Inhabited by sentient creatures without souls who have been produced by Satan to try and damage God's creation'), by pointing up other 'omissions' from the orthodox Catholic analysis, necessarily suggests yet another category, that other worlds may be inhabited by creatures that have nothing to do with, and were not created by, the God of the Earthly Bible. Since this same logic can be applied to Earth as well, it is corrosive of theological certainty; which is presumably why the church felt it had to kill Bruno. My point is that to read *A Case of Conscience*—a Hugo award-winning novel, and a highly regarded

example of science fiction—from a Catholic perspective is a different experience to reading it from a non-Catholic one. Under the logic of the former the novel is an interesting exploration of a theological conundrum; under the logic of the latter it is a heartbreaking story of human arrogance and short-sightedness, with the blameless Lithians terrible victims.

More recently, Dan Simmons' prize-winning *Hyperion* (1989) opens with a story about a priest haunted by precisely this question: whether Christ is a universal saviour, or merely a parochial earthbound figure. He travels to a distant corner of the galaxy and finds there a race of seemingly idiot aliens who all carry a glowing cross upon their torsos. The priest, ecstatic, lights on this as proof of the universality of Christ. In the event, the cross shape turns out to be an especially pernicious alien parasite, only coincidentally cruciform, and the priest is disillusioned. But this theological opening to the *Hyperion* sequence of novels is appropriate. *Hyperion* establishes that a sadistic creature called the shrike is kidnapping and inflicting terrible pain upon various inhabitants of the planet *Hyperion*; in the novel's sequel, *The Fall of Hyperion* (1990), it becomes apparent that malign machine intelligences are using the shrike to summon a numinous spirit of compassion from its hiding place (the bait being a larger and larger quantity of suffering human beings) so that they can destroy it. That there is a mystical principle of compassion behind the events of the cosmos, in conflict with a ruthless opposite principle, casts this pseudo-Christian battle between (in all but name) Christ and Satan onto a galactic stage.

By asserting that this opposition of Protestant/humanist technology and Catholic magic is radically constitutive of science fiction (and perforce, therefore, contradistinguishing SF from fantasy), I may be reminding readers of Arthur C Clarke's famous dictum: 'any sufficiently advanced technology is indistinguishable from magic' (Clarke, *Profiles of the Future*, 1969). But it hardly needs pointing out that, far from co-opting magic into SF, Clarke's statement reduces all magic to technological reality. What seems at first glance to be miraculous becomes, when properly analysed, actually technological, albeit technology of a wonderfully advanced sort. In effect, Clarke denies Catholic SF altogether; for him it is always and inevitably Protestant-humanist SF in disguise, something manifested in Clarke's own SF corpus, where the apparently transcendent (for instance, the ending of *2001: A Space Odyssey*) is later rationalised in materialist, technological terms (in the three sequels to that work). In other words, I'm suggesting here a modification for the crude distinction between magical fantasy and scientific SF. It is not the fact that fantasy is magical *as such* that distinguishes it from SF. It is the fact that it is *sacramental*. Fantasy is supernatural, SF extraordinary, and there is the world of difference between the two terms. Once we accept that a wizard is a form of priest, we see that there is always a priest in fantasy. This priestly role is almost always taken (in effect) by a technological artefact in SF.

It is the argument of the present critical *History* that post-1600 SF has been intimately shaped by this dialectic between magic and technology. Indeed, the sub-divisions of the field popular amongst fans map out positions on the line

from magical to technological: 'hard' SF aligning itself closer towards the latter term; 'soft' SF towards the former. The later chapters of this history present the case that this dialectic between science and magic (or 'fact and mysticism' or 'rationalism and religion') actively informs all the major classics of 20th-century SF; that *Metropolis* or *Dune* or *Star Wars* or Kim Stanley Robinson's *Mars* books or the *Matrix* films all articulate precisely this dynamic, and do so for deep reasons connected to the determining history of the genre.

I would like, in this preface, to say only one further thing, in partial defence of the scope of this critical history. Brian Aldiss traced the origins of SF to Mary Shelley's *Frankenstein*; Thomas Disch to Edgar Allan Poe; Patrick Parrinder to Wells and Verne; Samuel Delany thinks 'there is no reason to run SF too much back before 1926 when Hugo Gernsback coined the ... term'—powerful critics all, who find the sort of proto-science fiction given so much attention in this work incongruous to their definitions of the form. Delany, for instance, has argued that 'More, Kepler, Cyrano ... would be absolutely at sea with the codic conventions by which we make sense of the sentences in a contemporary SF text' and branded 'these preposterous and historically insensitive genealogies with Mary Shelley as our grandmother or Lucian of Samosata as our great-great grandfather' as 'just pedagogic snobbery (or insecurity)' [Delany, 25–6]. I have been, in my time, persuaded by these arguments. I am no longer. It now seems to me that the fact that (say) Phidias would probably be baffled by the work of Henry Moore does not mean we can usefully deny that both figures were practitioners of sculpture. To say that Lucian would probably be baffled by Delany's *Dhalgren* is only to say that forms evolve and change, and that full comprehension requires a certain attention to these changes and evolutions. Science fiction has certainly evolved, but the fact of this does not deprive its earlier manifestations of a place in the tradition of SF, and it is that tradition this study seeks to explore, along the lines outlined in the previous paragraph. It seems to me, having read many critical-historical works about SF in preparation for the present study, that critics exclude SF written before 1926 (or 1870, or 1818, as the case might be) not because there is a coherent rationale for limiting SF to works written after such a date, but rather because the individual critics *prefer* the later writing, and don't much enjoy reading, so-called, proto science fiction. There's no disputing *gustibus* in such matters, of course, although it is worth stressing that a particular individual's lack of enjoyment in reading Kepler's *Somnium*, or Rétif's *La découverte australe* is not *by itself* a reason for excluding such works from a comprehensive history of SF.

NOTES

1. See Darko Suvin 'Science Fiction and Utopian Fiction: Degrees of Kinship' in *Positions and Presuppositions in Science Fiction* (Macmillan 1988). Chris Ferns's *Narrating Utopia: Ideology, Gender, Form in Utopian Literature* (Liverpool University Press 1999) is a detailed and perceptive study that covers much of this ground.

2. Umberto Eco neatly dramatises this anxiety in what is surely his best book, *L'isola del giorno prima* (*The Island of the Day Before*, 1994). The character Saint-Savin is talking about the theological difficulty of a universe of infinite inhabited worlds: 'was Christ made flesh only once? Was Original Sin committed only once, and on this globe? What injustice! Both for the other worlds, deprived of the Incarnation, and for us, because in that case the people of all other worlds would be perfect, like our progenitors before the Fall ... Or else infinite Adams have infinitely committed the first error, tempted by infinite Eves with infinite apples, and Christ has been obliged to become incarnate, preach, and suffer Calvary infinite times, and perhaps He is still doing so, and if the worlds are infinite, His task will be infinite too. Infinite his task, then infinite the forms of His suffering: if beyond the Galaxy there were a land where men have six arms ... the Son of God would be nailed not to a cross but to a wooden construction shaped like a star—which seems to me worthy of an author of comedies.' At this point his interlocutor screams in rage at his blasphemy and attempts to stab him with a sword [Eco, 139–40].

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Definitions

THREE DEFINITIONS

The obvious place to begin a critical history of science fiction is with a definition of its topic. This, though, is no easy matter. Many critics have offered definitions of SF, and the resulting critical discourse is a divergent and contested field. One approach that has proved influential amongst critics of the genre is that of Darko Suvin, who calls SF.

a literary genre or verbal construct whose necessary and sufficient conditions are the *presence and interaction of estrangement and cognition, and whose main device is an imaginative framework alternative to the author's empirical environment.* [Suvin, 37]

Suvin goes on, usefully, to isolate what he calls ‘the novum’, the fictional device, artefact or premise that focuses the difference between the world the reader inhabits and the fictional world of the SF text. This novum might be something material, such as a spaceship, a time machine or a faster-than-light communications device; or it might be something conceptual, such as a new version of gender or consciousness. Suvin’s cognitive estrangement balances radical alterity and a degree of familiar sameness, such that (in the words of Patrick Parrinder) ‘by imagining strange worlds we come to see our own conditions of life in a new and potentially revolutionary perspective.’ [Parrinder, 4].

Critic and novelist Damien Broderick has developed and refined Suvin’s insights. He notes that the flowering of SF in the 19th and 20th centuries reflected the great cultural, scientific and technological upheavals (he calls these ‘epistemic changes’) of those eras, and seeks to pin down with more precise language the strategies employed by the majority of SF texts:

SF is that species of storytelling native to a culture undergoing the epistemic changes implicated in the rise and supersession of technical-industrial modes of production, distribution, consumption and disposal. It is marked by (i)

metaphoric strategies and metonymic tactics, (ii) the foregrounding of icons and interpretive schemata from a collectively constituted generic ‘mega-text’ [i.e. *all previously published SF*] and the concomitant de-emphasis of ‘fine writing’ and characterisation, and (iii) certain priorities more often found in scientific and postmodern texts than in literary models: specifically, attention to the object in preference to the subject. [Broderick, 155; my addition]

Both these definitions focus primarily on the *content* of SF texts. Writer and critic Samuel Delany has, on the other hand, challenged the validity of defining SF in terms of its subject matter, suggesting instead that SF is ‘a vast play of codic conventions’, a shared game of signification that readers can apply to texts at the level of the sentence as much as the level of the text, to social performance and semiotic engagement. He suggests that sentences such as ‘her world exploded’ or ‘he turned on his left side’ *mean* differently, depending upon whether a reader approaches them as SF or ordinary fiction; in a realist text the former would be metaphor and the latter a reference to posture, where in SF the former could be literal and the latter involve a switch activating the left-hand portion of the body as some kind of machine. He suggests: ‘most of our specific SF expectations will be organized around the question: what in the portrayed world of the story, by statement or implication, must be different from ours in order for this sentence to be normally uttered?’ [Delany, 27–8, 31]. For Delany, in other words, SF is as much a *reading strategy* as it is anything else.

Many other critics have attempted a definition. Brian Stableford, John Clute and Peter Nicholls, in their lengthy entry ‘Definitions of SF’ in Clute and Nicholls’ *Encyclopedia of Science Fiction* (3rd edition 2011) quote sixteen separate definitions, from Hugo Gernsback’s in 1926 (‘a charming romance intermingled with scientific fact and prophetic vision’), to Norman Spinrad’s more recent ‘science fiction is anything published as science fiction’ [Clute and Nicholls, 311–14]. There is amongst all these thinkers no single consensus as to what SF is, beyond agreement that it is a form of cultural discourse (primarily literary, but latterly increasingly cinematic, televisual, comic-book and gaming) that involves a world view differentiated in one way or another from the actual world in which its readers live. The degree of differentiation—the strangeness of the novum, to use Suvin’s terminology—varies from text to text, but more often than not involves instances of technological hardware that have become, to a degree, reified with use: the spaceship, the alien, the robot, the time-machine and so on. The *nature* of differentiation, however, remains debated. Some critics define science fiction as that branch of fantastic, or non-realist, fiction in which difference is located within a *materialist, scientific* discourse, whether or not the science invoked is strictly consonant with science as it is understood today. This means faster-than-light travel (impossible, according to contemporary scientific orthodoxy) is a staple of science fiction, provided that such travel is rationalised within the text through some device or technology. A tale in which a character travelled from Earth to Mars simply by wishing or imagining the journey might be defined as fantastic or magic

realist rather than strictly science fictional. On the other hand, few SF texts adhere with complete consistency to the scientific, or pseudo-scientific logics of their conception. It would, for example, be perverse to deny that Edgar Rice Burroughs's *A Princess of Mars* (1912) is a work of science fiction, and yet the protagonist travels from Earth to Mars precisely by wishing the journey.

Some critics are comfortable defining as SF a range of texts more normally classified as magic realist or fantastic. In part there has been a reaction to the perceived ghettoisation of SF, by which the literary establishment in America and Europe dismisses texts by category, privileging, so-called, literary fiction over, so-called, genre fiction (as if the category of literary fiction were anything other than a genre!), and in many cases ranking science fiction as especially juvenile and valueless, below historical fiction and crime fiction in their notional pecking orders. This perennial prejudice does actual harm by creating a climate in which it is harder for writers to work and gain recognition, thereby damaging literature in general. Polemic is probably out of place in a critical history, so we can limit ourselves to observing how perniciously ridiculous these notions are, and (perhaps) to pitying the blinkered attitude of literary editors, reviewers and the intelligentsia literature that has been influenced by them.¹

This present study has been unable to avoid the, often, tedious debates concerning definition, but my aim is to present a historically determined narrative of the genre's evolution rather than offering an apothegmatic version of the sentence 'SF is such-and-such'. This narrative is outlined in the chapters that follow and it sees SF as a specific and, as it happens, dominant, version of *fantastic* (rather than *realist*) literature; texts that adduce qualia that are not to be found in the real world in order to reflect certain effects back upon that world. The specificity of this fantasy is determined by the cultural and historical circumstances of the genre's birth: the Protestant Reformation, and an attendant cultural dialectic between Protestant rationalist post-Copernican science on the one hand, and Catholic theology, magic and mysticism on the other. Those texts where the latter term predominates are often called fantasy; those largely or wholly under the aegis of the former term are called hard SF. In between—the majority of texts with which we will have to deal—we find SF as it is broadly conceived. But it is one of the theses of this present study that pretty much all the classic texts of SF articulate this fundamentally religious dialectic. In saying this I am not saying, as some critics have done, that SF embodies religious myth, or secularises religious themes. SF may, of course, do either of these things, but this is not my argument. My thesis is that the genre as a whole still bears the imprint of the cultural crisis that gave it birth, and that this crisis happened to be a European religious one. SF begins as a distinctly Protestant kind of fantastic writing that budded off from the older (broadly) Catholic traditions of magical and fantastic romances and stories, responding to the new sciences, the advances of which were also tangled up in complex ways with Reformation culture. Of course, SF was a small-scale matter until the 20th century, when it broke into the pop-cultural in a major way. But still, this study seeks to show that philosophical and theological ideas which emerged half a millennium ago

are vital ones for an understanding of what is happening in SF. Few genre fans are aware of it, I think, but there's a reason why modern SF returns so often to a mode of materialist sublime, which fans call 'sense of wonder'; why modern SF is so fascinated, often in oblique ways, with questions of atonement and the status of saviour figures. This is, I think, worth stating unambiguously at the beginning of the study, so that the reader (who may well and profitably disagree with the emphases that follow) can position herself with respect to the argument. No critical history of science fiction could be wholly consensual, and nothing I argue here will please all, or perhaps even many, critics in the field.

The Reformation was not a sharp punctum, neatly separating a magical Catholic medieval past from a scientific quasi-Protestant modernity. It happened at different rates in different zones, and in many places in the world didn't happen at all, or else was unworked by effective Counter-Reformation strategies. Many Catholics were (and continue to be) fruitfully engaged in science and modernity; many Protestants were (and are) committed to older, magical and medieval cultural modes. More, the Reformation itself took place against a cultural backdrop of cultural inertia and resistance. J J Scarisbrick's judgment of attitudes to the Protestant Reformation in England can be extrapolated across Europe as a whole: 'on the whole, English men and women did not want the Reformation and most of them were slow to accept it when it came'. Nonetheless, and aptly, Scarisbrick calls the Reformation 'the supreme event in English history'.²

One reason why the Reformation had such a shaping effect on science, and therefore on science fiction, was what Canadian philosopher Charles Taylor describes as a shifting of the *adverbs* that relate the divine. The earliest Protestant Reformers argued that human beings should accept 'with humility the nature God has given them'; but the longer-term consequences of the Reformation generated, through people like Francis Bacon and John Locke (both discussed below), 'a new transposition of the theology of ordinary life'.

In this version, we come to God through reason. That is, the exercise of rationality is the way we take part in God's plan. ... in Locke's new transposition of the ethic, the crucial adverbs are shifting. Where in the pure Reform variant, it was a matter of living worshipfully for God, now it is becoming a question of living rationally. [Taylor (1989), 242]

Taylor's larger argument has to do, as his book's title makes manifest, with 'the sources of the self, the making of modern identity'. And it is the stress on the adverbial nature of this 'making', as much as its focus on a new mode coming into being, that is of particular relevance to the development of science fiction. SF is adverbial upon science, modifying and qualifying in expressive ways the nounal facticity of science itself. I will have more to say about the valence of the Reformation, but having invoked science more than once it may be worth pausing to consider what that word means. Common sense suggests that deriving a sense of that will be important to any account of a genre of literature called science fiction.

THE SCIENTIFIC AND THE TECHNOLOGICAL I: THE SCIENTIFIC

For some critics, the identity of science, as it modifies the fiction part of SF, is the crucial definitional question for the genre. Brian Aldiss's influential argument that SF begins with Mary Shelley's *Frankenstein* in 1818 (although Aldiss himself lists numerous important ancestors) depends upon the assumption that SF could not have originated any early than the 19th century precisely because it is only in the 19th century that science, as we now understand the term, obtained widespread cultural currency. To quote Peter Nicholls: 'SF proper requires a consciousness of the scientific outlook ... a cognitive, scientific way of viewing the world did not emerge until the 17th century, and did not percolate into society at large until the 18th (partly) and the 19th (to a large extent)' [Clute and Nicholls, 567–8].

Science, as the term is generally understood, means, roughly, a discipline which seeks to understand and explain the cosmos in materialist rather than spiritual or supernatural terms. This is not to deny that spiritual and supernatural accounts of the universe may have affective, and even explanatory, validity, but it is to insist that such accounts cannot be evaluated meaningfully according to the protocols of science—a deductive, experimental discourse characterised by what Karl Popper called 'falsifiability', whereby the accumulation of empirical data can disprove, but never actively prove, theories. Because this version of science is instrumental, it aligns the discourse closely with technology, specifically with the enormous technological advances associated with the Industrial Revolution. This sense of science may explain why 19th- and 20th-century SF is so much more fascinated with items of technology than it is with less applied forms of scientific discourse (mathematics, biology, geography, chemistry, psychology, geology and the like). Of course, there are examples of SF that take the term in this proper sense; Abbott's *Flatland* (1884), for instance, exemplifies a vigorous little tradition of SF based on mathematical premises. But the great majority of SF written in the 19th and 20th centuries is less science fiction and more extrapolated technology fiction.

Then again, *something* happens to science in the Victorian age. To be precise, with the 19th century's conception of science comes a cultural division into arts and sciences, a perceived separation between what C P Snow in his influential 1959 lectures called *The Two Cultures*. Stefan Collini, in an introduction to a recent reprint of Snow's text, points out that the term scientist was first proposed in 1834 along the lines of artist:

The lack of a single term to describe 'students of the knowledge of the material world' had bothered meetings of the British Association for the Advancement of Science in the early 1830s, at one of which 'some ingenious gentleman proposed that, by analogy with artist, they might form scientist' [Snow, xii]

This is indicative of the sense, growing in culture through the mid-19th century that art and science form a binary, to which is inevitably attached, in the words of Caroline Jones and Peter Galison, 'the economy of the binary':

Like all binaries art and science needed to be yoked together (yet held apart) in order to accrue the strengths of their polar positions: soft versus hard, intuitive versus analytical, indicative versus deductive, visual versus logical, random versus systematic ... two things seemed clear [in the mid 19th century]: art occupied the domain of the creative, intervening mind, and the scientific ethos seemed to demand precisely the suppression of such impulses [Jones and Galison, 2–3]

The drift of the modern mind, informed by this cultural tradition, defines science *in opposition to* art, such that science becomes inimical to aesthetics, a lamentable state of affairs for an art like SF that seeks precisely to explore the aesthetics of scientific premises. Taking SF out of the ghetto becomes part of the larger project of breaking down this fell pseudo-distinction. It seems natural to us; it is inscribed into our educational syllabi from the earliest schooling and is reinforced by many aspects of culture. But it is nonetheless a 19th-century cultural construction rather than a ‘natural’ state of affairs.

A fuller sense of the possibilities of the genre is unlocked by taking science fiction back past the 19th century, and exploring ways in which earlier notions of science informed fiction—to deconstruct, in other words, the logic of cultural binarism that wants to make science and fiction mutually exclusive terms. Indeed, it can be asserted that science fiction itself, as a broad statement of aesthetic strategy, has always sought to resist the notion of the two cultures. SF is the place where art and science connect. SF is empirical proof that arts and science do not constitute a binary economy.

It helps, in working through the implications of this, to understand how notions of science have shifted in the last century or so. Older theories of science tended to assume, in an unembarrassed way, that science provides systematic generalisations that explain the truth of the material world. For Bertrand Russell in 1931, for instance, scientific method involved a straightforward passage from observation to generalisation, although with ‘a careful choice of significant facts on the one hand, and, on the other hand, various means of arriving at laws otherwise than by mere generalisation’ [Russell, 3]. That this definition depends upon a rather arbitrary consensual sense of what distinguishes scientific generalisation from mere generalisation is one of its problems. Another is the belief that data leads by accumulation to water-tight generalisations, or truths. This rather woolly sense of science was challenged in the 1930s by German philosopher Karl Popper.

Popper’s insight was that science does not produce theories that explain or determine the world, since all scientific theorising is empirically contingent. Any theory can never be proved, it can only be falsified. Observing a thousand two-legged penguins does not prove that penguins have two legs, although observing a single three-legged penguin falsifies that theory. What follows from this is the notion that a scientific theory (for instance, that penguins have two legs) is not ‘the truth’, but instead a contingent explanation for the data as they stand. American philosopher Robert Nozick neatly summarised this school of thought, which he called ‘the standard model of science’ in our post-Popperian culture, although he went on to challenge it on a number of grounds:

Karl Popper presents an appealing picture of science as formulating sharp theories that are open to empirical testing and to empirical refutation. Scientific theories are not induced from the data, but are imaginative creations designed to explain the data. [Nozick, *Invariances*, 103]

One of the most appealing consequences of Popper's position is its unstated implication that SF is *a mode of doing science* (or philosophy, more generally conceived), as well as a mode of doing fiction. An important aspect of this is holding at arm's length the notion that science, because it treats in facts, is a necessarily neutral discourse. One of the ways science has increasingly been theorised in the 20th and 21st centuries has been to foreground the way science manifests the ideological and other preconceptions of the scientists who compose it. The influential French sociologist Pierre Bourdieu gained his influence, in part, through the rigorous and persuasive ways he demonstrated that science is not an edifice of disinterested objectivity, but inevitably bears the impress of the social class and ideological preconceptions of the people who do the science.³

Not all philosophers of science, or indeed all scientists, find this idea palatable. Popper himself could see no place for imaginative creation—at least in the sense of 'the innovative, ingenious imaginative leap' that is the currency of SF—in his version of science:

The question of how it happens that a new idea occurs to a man—whether it is a musical theme, a dramatic conflict, or a scientific theory—may be of interest to empirical psychology; but it is irrelevant to the logical analysis of scientific knowledge. [Popper, 31]

One objection to the idea that SF might count properly as science, as well as being a literature, is that fiction, and other such cultural-artistic discourses (such as cinema, TV, the graphic novel and the like) operate according to aesthetic rather than logical-deductive processes. The force of this objection depends upon a belief that the *process* of fiction, reading and writing, whilst occasionally deductive, is more frequently intuitive, metaphoric, metonymic, suggestive, psychologic and imagistic. Even the hardest of hard SF will partake of these soft, or aesthetic, elements. But there are philosophers of science who believe that it is a mistake to reduce scientific process purely to logic. Ernest Nagel, for instance, stresses the importance of analogy to scientific practice; his example is 'the kinetic theory of gases', which is often theorised as if the particles acted 'like billiard balls' [Nagel, 110]. For Nagel, analogies and hypotheses, whilst having obvious limitations, nevertheless 'can serve as fruitful instruments of systematic research' [108]. Similar modular thinking, whereby a model is constructed of a particular system, 'may be intrinsically valuable because it suggests ways of expanding the theory embedded within it' [117]. Several critics have seen SF as a modular system, with fictive worlds modelling reality on a range of different

levels, from the practical to the symbolic. Gwyneth Jones, SF author and critic, plausibly brings the whole of SF under the rubric of the experiment: ‘the business of the [SF] writer is to set up equipment in a laboratory of the mind such that the “what if” in question is at once isolated and provided with the nutrients it needs. This view of SF,’ she adds, ‘is not new to science fiction writers and critics, but it is worth restating: the essence of SF is the experiment’ [Jones, 4].

A fuller perspective on the role science in SF can be obtained via the work of the American philosopher Paul Feyerabend. His book *Against Method* (1975) is a persuasive polemic against method in science. The best way to do science, says Feyerabend, is anarchically—‘anarchism, whilst perhaps not the most attractive *political* philosophy, is certainly excellent medicine for the *philosophy of science*’ he says. Scientific rules limit possible advances in science: ‘the only principle that does not inhibit progress is: *anything goes*’. Feyerabend proposes a free-for-all proliferation of scientific theories, even though some—or perhaps many—of these theories will be kooky, mystical, daft or unpalatable. Howsoever odd these theories get, Feyerabend is sure that in their interaction better and better models will emerge, better and better science will be practised. The alternative, he says, is to propose a uniformity, a situation in which the powers-that-be compel consensus by force. This is uncomfortably close to the situation that presently obtains in science; scientists that advocate telepathy, alien abduction, the power of crystals and the like are frozen out of the scientific community by a mix of ridicule, cold-shouldering and the financial penalties of being unable to raise funds to prosecute their research. Increasingly, the only way to obtain funding is to work within the accepted frameworks. Feyerabend argues that ‘proliferation of theories is beneficial for science, while uniformity impairs its critical power. Uniformity also endangers the free development of the individual’ [Feyerabend, 5]. So, for example, conventional science was not apprised of the environmental dangers of technological advance. Awareness of such issues was raised by groups outside science, Green political advocates, New Age enthusiasts and cranks of all sorts. And yet such figures have been vital in broadening useful debate on global warming, the environmental impact of technology, carbon-economy; all things that science now takes seriously. Feyerabend says:

Non-scientific procedures cannot be pushed aside by argument. To say: ‘the procedure you used is non-scientific, therefore we cannot trust your results and cannot give you money for research’ assumes that ‘science’ is successful and that it is successful because it uses uniform procedures. The first part of this assertion is not true, if by ‘science’ we mean things done by scientists—there are lots of failures also. The second part—that successes are due to uniform procedures—is not true because there are no such procedures. Scientists are like architects who build buildings of different sizes and different shapes and who can be judged only after the event, i.e. after they have finished their structure. It may stand up, it may fall down, nobody knows. [Feyerabend, 2]

Against Method is a polemic rather than a manifesto for change in science, and it is perhaps hard to see how these ideas might be put into practice in real terms. Grant awarding bodies, after all, need *some* criteria to judge who gets research money and who doesn't, there being many more applications than money to fund them. And yet it is the case that there does exist a space where the sort of science Feyerabend is proposing already takes place, where brilliantly unorthodox thinkers throw ideas around, regardless of how strange they seem at first, in which experiments are conducted, and blue-sky research undertaken. This space is called science fiction. Although he makes no mention of literature, Feyerabend's perspective includes, implicitly, the notion that SF is a crucial component of science as well as of culture. Research councils may rarely give money to the study of interstellar colonisation, time travel, ESP, mutant cactuses or virtual reality; but publishers *will* give out money if the 'research' (which is to say, the novelisation) is good enough. Stephen Hawking's *A Brief History of Time: from the Big Bang to Black Holes* (1988) is a dull historical account of things that have already happened in science and some cautious speculation about things for which Hawking lacks empirical data. On the other hand, Wil McCarthy's novel *The Collapsium* (2000) is a riveting account of how science might be, or will be, or ought to be. McCarthy imagines black holes not as highly compressed stars, but as very heavy elementary particles. His protagonist manages to assemble these particles into the material after which the novel is named, and from that wonderful Feyerabendian scientific experiment all sorts of fascinating things follow, including, but not limited to, plausible faster-than-light travel.

A Feyerabendian sense of the science fiction genre would be alive to its fluid possibilities in a way that the (still widespread) older notion of science as a discourse with a special relationship to 'the truth' does not. To return to Bertrand Russell's 1931 book on *The Scientific Outlook* for a moment. After elaborating the many advantages of a scientific outlook, Russell moves on to propose 'scientific world government' as a radical solution to the ills of the day. This government, he says, 'will embrace all eminent men of science except a few wrong-headed and anarchical cranks' [Russell, 193] (a qualification which speaks, though inadvertently, to the essentially conformist and coercive nature of 'scientific discourse' as Russell understands it). This scientific government, he goes on,

will possess the sole up-to-date armaments, and will be the repository of all new secrets in the art of war. There will, therefore, be no more war, since resistance by the unscientific will be doomed to obvious failure. The society of experts will control propaganda and education. It will teach loyalty to the world government, and make nationalism high treason. The government, being an oligarchy, will instil submissiveness into the great bulk of the population, confining initiative and the habit of command to its members. [Russell, 193]

This distinctly unappealing picture is, although Russell does not admit it, science fiction. It owes much to H G Wells, and looks forward to Aldous Huxley's *Brave New World*, which was published the following year ('a life

of easygoing and frivolous pleasure may be provided for the manual workers' Russell, 211). Russell's book, in other words, is an example of philosophy *as SF*. Russell is quite aware of the fact that in his vision 'features that everybody would consider desirable are mixed with features that are repulsive' [Russell, 214]. Indeed, the point of this work, for our purposes, is that it stands as an example of the extrapolation of this older, scientific logic to its ideological conclusions. This is a vision of science as oppressive dogma, a mode of social domination, that frequently finds expression in science fiction. Feyerabend's version of science, which specifically privileges the very 'cranks and anarchists' that Russell dismisses, has by far the greater potential.

THE SCIENTIFIC AND THE TECHNOLOGICAL II: THE TECHNOLOGICAL

According to SF author and critic Theodore Sturgeon, 'the word "science" derives from the Latin *scientia*, which means not method nor system but *knowledge*. The concept of SF as a "knowledge fiction" satisfied me completely' [Sturgeon, 73]. Sturgeon prefers this phrase, because it allows him to include, for instance, *The Lord of the Flies* in the SF category 'because of its profound investigation of the origins of religion and secular power in a human society'. The oblique snobbery of such a re-definition depends upon a buried sense that conventional definitions of SF exclude 'proper' literature (*Brave New World*, *Nineteen Eighty-Four*, *Gravity's Rainbow* and the like), leaving the genre with the dregs of populist, pulp and adventure yarns—a snobbery common to many SF intellectuals and academics, and not entirely without rationale. But the roots of it as a prejudice are, philosophically, rather revealing. And philosophy is the key context here; philosophy (from the Greek, meaning love of wisdom) has had its turn as a word for what we nowadays call science, particularly as natural philosophy.

The crucial distinction here is not between science and knowledge, but rather between science and technology. These two words are often linked, with the latter seen as a specific example of the former. According to the *Chambers Dictionary of Science and Technology* technology is 'the practice, description and terminology of any of the applied sciences which have practical value and/or industrial use' [Walker, 1150]. In fact, this distinction uncovers a split at the very root of the discourse within which science fiction (amongst many other things) needs to be oriented. The definition of science evoked in Walker's particular reference work ('the ordered arrangement of ascertained knowledge, including the methods by which such knowledge is extended and the criteria by which its truth is tested', Walker, 1021) draws out the emphasis on truth, knowledge and order. Which is to say, science becomes a more or less restrictive idealist philosophical framework, restrictive (as most scientists assert) not from orneriness or ideological pressure, but by the very nature of things 'out there'. Technology, on the other hand, is the discourse of tools and machines, tools being extensions of the human worker, like hammers and saws, and machines

being devices that stand apart from the human worker. The 19th-century Marxist thinker Friedrich Engels was one of the first to make this distinction between the tool and the machine, and he did so by way of articulating what he saw as the nature of the industrial machine, which tends to ‘alienate’ humanity from its own labour. But, taken conceptually, we find tools and machines at the core of most science fiction; such that spaceships, robots, time machines and digital technologies (such as computers and virtual realities) are the four most commonly occurring tropes of the field. Which is to say, Suvin’s novum is almost always technological in form. There are novums of a more conceptual or scientific nature, of course, but it is rare for these to be wholly uninvolved with technology. Le Guin’s conceptual novum in *The Left Hand of Darkness* (1969) postulates an alien people without fixed gender, but her novel also includes a series of technological novums, amongst them the ansible (a faster-than-light communications device) and a spaceship. Christopher Priest’s *Inverted World* (1974) presents us with a striking science fictional tale, a case of up-ended scientific logics, a city whose inhabitants live not (as we do) in a finite world located inside an infinite universe, but instead in an infinite world within a finite universe. Nevertheless, the narrative resolves itself back into technology fiction at the end, with the apparent nature of the world revealed as a function of the particular energy technologies that power the motile city at the centre of the book. A cliché of science fiction is the mad scientist, laughing manically as he threatens to destroy the world with his death ray unless his demands are met. But since such figures never set up experimental models that match research against a neutral control, and since they are not open to the falsifiability of their assumptions, they are not actually mad scientists. The death ray machine is the giveaway. They are mad engineers.

The genre’s predilection for technology has generated many brilliant effects within the aesthetic framework of SF. Still, there remains a roughly hierarchised bias against such work. The novel of ideas has traditionally been privileged over the instrumental novel of the machine, in the same way that real fiction (meaning a particular sub-genre of mainstream, literary fiction) is privileged over science fiction by the literary establishment. It is only relatively recently, in philosophical terms, that discourses have been developed to allow us to challenge this prejudice. One particularly influential philosophical intervention into the question of technology is the 1953 essay ‘The Question of Technology’ by German philosopher Martin Heidegger. Heidegger takes the word back to its Greek roots: ‘from earliest times until Plato the word *technê* is linked to the word *epistêmê*’ but from Plato and Aristotle onwards a distinction begins to be made between them [Heidegger, 318–9]. *ἐπιστήμη* (*epistêmê*) is a Greek word for knowledge (it is at the root of the English word epistemology), and by extension it means finding things out about the universe in an open-ended, dialectical manner—which is to say, it means science. *τέχνη* (*technê*) on the other hand, the root of the word technology, means a specific skill or ability, the knowledge of how to make something, and is used by extension to mean cunning devices, arts, wiles. English has a similar complex of implication in the

word artificial, which means both the work of an artificer or artist (where art has a positive implication) and also something suspect, ersatz, less than real. Fifth- and 4th-century Greek thinkers divided out these two forms of knowledge; Plato and Aristotle reserved *epistémê* to themselves, and dismissed *technê* as the trick of the unethical, rhetoric rather than truth, Sophists. According to Bernard Stiegler

the separation is determined by a political context, one in which the philosopher accuses the Sophist of instrumentalizing the *logos* [truth, the underlying order of things, *logos* also means the word] as rhetoric and logography, that is, both as an instrument of power and a renunciation of knowledge ... It is in the inheritance of this conflict—in which the philosophical *episteme* is pitched against the sophistic *technê*, whereby all technical knowledge is devalued—that the essence of technical beings in general is conceived. [Stiegler, 1, my gloss]

By ‘instrumentalizing the logos’, Stiegler means that the Sophists were accused of turning truth into an instrument, that is, of being amorally concerned with means rather than ends. As this distinction is traced down the centuries of philosophical tradition, we can see that *technê* becomes associated with an emptying out of meaning and validity. For example, Stiegler quotes Husserl’s assessment that ‘alegebra’ is the ‘emptying of meaning’ from ‘the actually spatio-temporal idealities’ of geometry, constituting ‘a mere art of achieving results, through a calculating technique according to technical rules’ [Husserl, *The Crisis of the Universal Sciences and Transcendental Phenomenology* (1970), in Stiegler, 3].

Heidegger’s essay challenges, and indeed overturns, this understanding of technics. For him technology is not an instrument, it is a mode of knowing, ‘a mode of revealing ... where *alêtheia*, truth, happens’ [Heidegger, 319]. Far from seeing technology as merely the ‘practice of science’, Heidegger argues that science is in fact a function of technology. He means this not only in the sense that ‘modern physics, as experimental, is dependent upon technical apparatus’ [Heidegger, 319–20], although this is true. He means rather, in the words of Timothy Clark, that technology ‘is not the application of science. There is not theory on the one side and its practical implementation on the other. Rather science is one manifestation of the technological stance towards entities’ [Clark, 37]. Heidegger thinks that technology, from windmills to hydroelectric plants, ‘enframes’ the world in a certain way, allowing or shaping the ways in which we ‘know’ the world around us.

It may be that technology encourages us to think of the world only as what Heidegger calls ‘standing-reserve’, a quantity of raw material to be harnessed; and indeed it is usual to take Heidegger’s essay as a statement of hostility at the increasing pace of technological change (Heidegger was, to put it mildly, a politically conservative individual, and he declared his preference for windmills over hydroelectric plants and indeed felt physically sick in modern cities ‘surrounded on every side by mechanization and regimented space’, Clark 36). But this is not what ‘The Question of Technology’ is actually saying. As a

mode of knowing, of enframing the world, technology is 'not something fundamentally new or even modern. Rather it fulfils Western Philosophy's oldest desire for knowledge of what is real' [Scharff and Dusek, 247]. Heidegger's undoubted hostility to much modern technology was based not on the fact that it was technology as such, but rather on the peculiarly Heideggerian question of whether it is likely to make us feel 'at home' or not.

Nevertheless, it is Heidegger's insight into the way technology enframes the world for humanity that makes him a crucial if unlikely figure to bring into a discussion of the definition of science fiction. In another essay, 'What Calls for Thinking?' (1954), Heidegger famously, even notoriously, declared 'Science does not think' [Heidegger, 373]. What he meant by this (and he conceded in the essay that 'this is a shocking statement') was that science does not enframe in the way that technology does. Science fiction, on the other hand, *does* think, not only in the sense of rehearsing a great many concepts, possibilities, intellectual dramas and the like, but in this deeper sense of textually enframing the world by positing the world's alternatives. We could say, to adopt Heidegger's idiom, that science does not think *except in science fiction*, but this is actually only a way of saying something simpler, that SF is actually technology fiction in this Heideggerian sense.

It seems perverse to say it, but perhaps it is Heidegger who represents the best starting point for a thoroughgoing theorisation of science fiction. Heidegger's most famous philosophical work centred not on questions of technology, but on the issue of 'Being', the ontological condition of humanity. Bernard Stiegler, in his complex on-going theoretical study *Technics and Time*, sets out to revise Heidegger's philosophy of *Dasein*, or Being, to allow certain technological objects (he is a little obscure as to which precisely) access to the same authentic Being-in-the-world that characterises human beings. Heidegger distinguishes between the existence of a creature like a man (*Dasein*) and the existence of an object which we categorise solely in terms of its use (*Zuhandenheit*). Yet, according to Stiegler this denigration of the 'technical object' becomes less and less tenable in a world in which the technological not only interpenetrates human life at almost every level, but in which such objects also move further from the sort of dumb instrumentality that characterises a spade or a pair of glasses, and closer to the thinking-machine and the self-awareness object. On the other hand, no machine in the present world is truly self-aware. To speak more precisely, the place where Stiegler's technological *Dasein* actually obtains is science fiction itself. One of the key themes of SF for the last half-century has been precisely to delineate and explore the place where the technical object achieves *Dasein*, a being-in-the-world and a being-towards-death. Neither a chair, a typewriter nor a thermostat can have authentic Being, in the sense that Heideggerians, or existential philosophers, mean the word, but Asimov's robots all possess precisely this quality.

It can be argued, and with some justification, that SF has rarely followed through on the possibilities that this philosophical state of affairs has afforded it; that when the technical has been introduced, it has more often than not

been to denigrate it. Stiegler considers the newest technologies of genetic manipulation, concluding that

they make imaginable and possible the fabrication of a 'new humanity'...without having to dive into science-fiction nightmares, one can see that even their simple current applications destroy the oldest ideas that humanity has of itself—and this, at the very moment when psychoanalysis and anthropology are exhuming the constitutive dimension of these ideas, as much for the psyche as for the social body ... [technology is] for the first time directly confronting the very form of this question: what is the nature of the human? [Stiegler, 87].

Cultural critic Donna Haraway has famously celebrated the possibilities of this technological reinvention of the category 'human' in terms of its diversity and possibility, as well as insisting upon the increasing relevance of talking in terms of 'the inextricable weave of the organic, technical, textual, mythic, economic and political threads that make up the flesh of the world' [Haraway, in Gray xii]. Like Haraway, Stiegler argues that 'the human is a technical being that cannot [merely] be characterised physiologically and specifically (in the zoological sense)' [Stiegler, 50]; although, unlike Haraway, Stiegler's emphasis is on ontology, rather than on the many technical prostheses that augment contemporary life. Similarly, with regard to culture and society Stiegler is adamant that 'the technical dynamic *precedes* the social dynamic and imposes itself thereupon' [Stiegler, 67]. In both cases, it is a *technical* fiction, rather than a more generally conceived science fiction, that is able to penetrate to the root of things.

Machines are, today, in the process of radically redefining the human; and yet the dominant story-thread of 20th-century mainstream SF has been precisely how machines *return* to humanity, how their developmental trajectory brings them back into discourses of humanity. Asimov's story 'The Bicentennial Man' (1976) is a core fable in this regard. After decades of robot stories in which he used the trope of the robot as a means of exploring aspects of humanity, Asimov finally wrote a story about a robot literally turning himself into a human being (his own assessment of the story is that 'of all the robot stories I ever wrote [it] is my favourite and, I think, the best', Asimov, *The Complete Robot*, 603). Protagonist Andrew Martin begins the story as a metal creature with a positronic brain, whose being is entirely determined by the 'three laws of robotics' for which Asimov is famous. A flaw in his programming makes him creative (a flaw erased by his manufacturers in all subsequent robots), and during his lifetime he accumulates money through royalties earned on his art, enabling him first to buy his freedom, then to have the metal portions of his body replaced with organic ones, and finally to petition the Legislative Establishment to have himself legally recognised as human. Public opinion makes this impossible, despite Martin's egregious virtue, until he instructs a surgeon to make one last adjustment: 'decades ago, my positronic brain was connected to organic nerves. Now, one last operation has arranged that connection in such a way

that slowly—quite slowly—the potential is being drained from my pathways’ [Asimov, *The Complete Robot*, 680]. By dying, the robot sways public opinion, on his 200th birthday he is declared human, and dies. By taking on human weakness the machine is able to take on Being-towards-death, and so defuse human fear of the machine. We see this same archetypal narrative structure in a great deal of science fiction. The character of the android Data in *Star Trek: the Next Generation* who yearns, Pinocchio-like, to become human is never challenged in his strange desire. Robot stories can be traced back to fables in which automata are mistaken for human beings, such as Hoffman’s ‘Der Sandmann’ (1816), or J Storer Clouston’s *Button Brains* (1933), the point of such tales being the transfer from a machinic to a humanitarian ethic and logic.

The demonisation of the machine is a continuing aesthetic SF strategy. Gregory Benford’s Ocean series of novels, beginning with *In the Ocean of Night* (1976), postulates a galactic conflict between organic life and a brutalising inorganic machine race. The narrative arc of the first hundred *Perry Rhodan* novels (1961–1971) sets the ‘peacelord of the universe’ against the malign ‘robot regent’ of the planet Arkon. The Star Trek franchise has returned many times to the machinic villains named The Borg. The *Matrix* films pit organic life in a massive, violent war against the machines. And so on through a thousand examples, with only a few SF authors of merit positing the opposite line (Greg Egan is, perhaps, the most eminent of these).

Why this bias? In philosophical terms, the machines are seen as inherently less authentic than organic life because they fall under the rubric of *techné* rather than *epistémé*. Good means amenable to humanisation, like Asimov’s saintly Bicentennial Man; bad means resistant to this process. More recent SF has been bolder in deconstructing this notion, with a range of cyberpunk and other texts exploring the validities of a technological perspective, but the bulk of the genre reproduces the ancient bias.

‘IN REAL LIFE’ AND ‘IN SF’

My own training and biases as a critic have left me suspicious of binaries, and I worry that precisely such a binary model emerges from this chapter of definitions. Any distinguishing of realist and science fictional occurs, of course, under the sign of erasure, as it were; and reading texts through these notional categories happens always with a sense of the ways in which the two terms bleed into one another. The ways in which SF writers utilise realist strategies, and realism itself, are always contingent upon the sorts of imaginative and speculative constructions that characterise SF. The same is true of the blurred binaries art/science, romance/the novel and science/technology: in each case there is no prior term, and the interplay between the categories must be understood as fully dialectic and *en train*. But in this chapter I have not, I concede, quite shaken off the dust of one of these binaries, and I want to finish by acknowledging my bias. It has to do with the different understandings of the science that underpins science fiction, and the sorts of fictions that result from them.

A shorthand for this binary, although not a very satisfactory one, might be hard SF versus soft SF, a distinction often made by SF fans themselves. More precisely, we might say, it is the difference between the science in science fiction deriving from the rigid, Russellian notion (with correlatives of truth and correctness), and the science in science fiction deriving from the anarchical Feyerabendian sense of the term (with correlatives of imaginative intellectual play and extrapolation). My preference as reader and writer is for the latter. However, many SF writers and fans take a particular pleasure in the correctness of the science of science fiction, correct here being understood as not transgressing the laws of science as they are presently understood. Gwyneth Jones asks: 'does it matter if the science is sound? The fantasy fanciers will say no, the SF faithful will say yes'. She goes on to point out that Larry Niven's Hugo and Nebula award-winning *Ringworld* (1970), 'one of the great, classic "engineering feat" SF novels, reached print in the first instance with terrible mistakes in its science', and that Niven, 'as free as any SF novelist alive from moral qualms about social verisimilitude or cultural relativity, acquiesced to the helpful advice he received from Dyson Sphere buffs, and obediently corrected his fantasy for later editions' [Jones, 16].

The shibboleth here is consistency, and one problem with its application is that fans tend to overlook substantive transgressions of scientific orthodoxy (spacecraft that can travel faster than light), whilst becoming agitated about minor features (the mechanism by which Niven's ringworld, a massive ring of habitable land circling a star, is kept precisely in its orbit). This inconsistency in applying—precisely—criteria of consistency reveals an ideological ground, for only an ideological belief in science as truth can sanction the sort of misprision necessarily perpetuated by this sort of analysis. As another example, Robert Lambourne, Michael Shallis and Michael Shortland analyse various SF texts that deal with centrifugal forces. Space habitats—or spacecraft that are spun to give the illusion of gravity in a free-fall environment—are a popular recourse of the SF text, in part because such centrifugal environments avoid the need for the pseudo-science artificial gravity. Lambourne *et al.* discuss the way the Coriolis effect, created by the constant rotation, would determine life inside such an environment.

In the short story "Small World" (1978), by Bob Shaw, for example, a projectile is described as travelling across a cylindrical space habitat along an S-shaped trajectory. In fact, the reversal of the Coriolis force after the projectile passes the midpoint of its course and starts its descent, means that the path is C-shaped when viewed from the drum, as shown in figure 5(b) [Lambourne *et al.*, 55]

The category error here is the 'in fact'. A story is not fact; nor does fictional entry into one or other discourse of science render it so. Application of conventional scientific orthodoxy as a criterion of judgment for an aesthetic object is fundamentally foolish, even when applied with absolute consistency; and when applied inconsistently, as it often is (swallowing the camel of faster-than-light

travel but straining at the gnat of, for instance, S-shaped ballistic trajectories inside spinning environments) it combines deadness with muddle. Our choice is between a textual universe run along the oppressive lines of Russell's scientific world-government, or a science fiction that plays anarchically with science along the lines Feyerabend suggests. This seems to me no choice at all.

And yet there is *something* in Lambourne's 'in fact'. A personal anecdote. I sat in a cinema audience in, as it happens, Aberdeen when the film *Star Trek III: The Search for Spock* was first shown in that city in 1984. In the film the Federation starship *Enterprise* has been stolen by its former Captain, Kirk, so that he and a few of his friends can go on an unauthorised search for his colleague Spock, believed dead. This crew of paunchy old geezers finds Spock's rejuvenated body on an artificially created Genesis planet. But they have been followed through space by a band of marauding and violent Klingon warriors who challenge the ship to a space duel, even though the Klingon craft is a tiny fighter and the *Enterprise* a massive starship. As it happens, because the *Enterprise* is without its usual complement of crew, it is extremely vulnerable (though the Klingons do not realise this). The Klingons fire, and with one shot they disable the *Enterprise*. At this moment in the film, with a shot on screen of the Klingon ship positioned in space directly in front of the *Enterprise* I heard somebody behind me in the cinema stage-whispering to his companion: 'Dear me, no, of course that's a Klingon D7 pseudofighter; it doesn't fire disruptor bolts like that. In real life this confrontation couldn't really happen.'

In real life. We are familiar with the idea that films reflect 'real life' poorly. On the screen we see the guy always winning the girl, we see the threatened disaster averted in the nick of time, we see the bad guy getting his comeuppance, and in each case we are aware of the fact that in the world we actually inhabit these things do not often happen that way. But this consensus that 'real life isn't like that' is usually applied to films that mimic our actual existence. The sentence 'real life is nothing like *Die Hard* or *When Harry Met Sally*' is one form of locution. The sentence 'real life is nothing like this scene in *Star Trek III: The Search for Spock*' is quite another, and the difference between them is extremely instructive.

As a statement to the effect that actual life bears no resemblance to the special effects, future world space battle of this particular film, the sentence is strictly accurate: 'in real life, the primitiveness of contemporary space technology and the non-existence of alien races means that no such space battle is possible'. But it is clear that the speaker did not mean the words in that sense. He meant 'this cinematic representation of a battle between a Federation cruiser and a Klingon pseudofighter does not map accurately onto the *reality* of such a battle'. What might this reality be, as far as this individual is concerned?

To answer this question is to excavate a little the cultural phenomenon of *Star Trek*, and of fandom more generally. Fans are integral to the way contemporary SF operates; numerous fan-created magazines, websites and conventions generate much of the energy upon which the continuing vitality of the genre depends. Yet the fan, and especially the science fiction fan, has a very low cultural currency today; he or she exists in a cultural climate of low-level ridicule and dismissal,

thought of as obsessive cultists, unskilled at social interaction, physically unattractive and unhygienic, outsiders, nerds; the—to instance a cultural icon with whom many people will be familiar—comicbook-store owner in *The Simpsons* cartoon series. Behind all this negative social construction (which, as with any derogatory stereotype, relates less to reality and more to prevalent ideological fascinations and anxieties) is the twofold baseline perception: that fans are *fanatical* (the former term of course derived originally from the latter) in some dangerous sense; and that fans are *passive* receptacles of consumer culture.

American critic Henry Jenkins has done more than anybody else to overturn this cultural stereotype. His breakthrough study, *Textual Poachers: Television Fans and Participatory Culture* (1992), working largely with the example of *Star Trek* fans, demonstrated that fans, far from being passive, are often in fact extremely active, not only in proselytising for their favourite shows, but also in terms of textual production—re-appropriating material from those shows, writing their own fiction and producing their own art (often in slash zines, in which two favourite characters are placed in erotic congruence, their names separated by a slash: Kirk/Spock for example). Jenkins shows the extent to which fans are *creative*, active participants in the textual universes of their favourite shows.⁴ Jenkins' liberating analysis not only critiques the stereotyping tendencies of modern society; it opens up the fan as a crucial category for any analysis of SF. The important thing about fans is that they care, and they care in an active, engaged and creative way. They care (as in the example of *Star Trek III*): about consistency; about production values; about the quality and range of texts available to them. They champion the works they admire, and more, they work directly to involve themselves in that work. Naturally, this enthusiasm can blur into cliquishness, in which schoolyard shibboleths are used to determine who is *us* and who is *not us*. I suspect that few people who have spent time with fans at conventions and elsewhere will entirely disagree with me when I describe this sort of siege mentality. But the fundamental point is that fans love SF, and love is not an emotion to be treated lightly. Most SF authors working today (I'm tempted to say *all*) began as fans, and many continue as fans. Science fiction is a community, and not an elite. Fans, more often than not, embody a huge, detailed and working knowledge of their genre, and can locate new texts within a framework of intertextual reference and connection with impressive facility. And the trope of the fan embodies not only actual humans who follow SF, but the position of the new SF text (novel, film) in respect of the whole genre, and—as I have been arguing—in an ideal sense the relationship (active, engaged, creative) between SF and the science that underpins the definition of the genre this chapter has sought to sketch.

CONCLUSION

That they are so often invoked suggests that the three definitions of SF cited at the beginning of this chapter remain useful for scholars in the field, despite the tendency of some critics to niggly away at them. This chapter has sought not to

replace Suvin's, Delany's and Broderick's definitions, but to go a little deeper into some of the assumptions underlying science fiction as an item of cultural nomenclature. The distortion happens before we even choose the elements of our definition; it happens when we decide to concentrate on the content of stories—spaceships, time machines, rayguns—rather than on their form, or more specifically than on the way larger-scale historical-cultural determinants have shaped a particular mode of cultural expression. It is not that the markers of content are wholly adventitious, of course (although many of them *are* more-or-less empty icons, interchangeable McGuffins and minimally-titivated versions of non-novums, like ships, cars and handguns). It is that science fiction is about much more than just its props and toys.

I have been arguing in this introduction that SF is better defined as technology fiction, provided we take technology not as a synonym for gadgetry but in a Heideggerean sense as a mode of enframing the world, a manifestation of a fundamentally philosophical outlook. As a genre, therefore, SF textually embodies this enframing, taking as its standing reserve not only the discourses of science and technology, but also the whole backlist of SF itself, the intertextual tradition that this study will go on to examine. To the extent that SF enters into the discourse of science (as it very frequently does) the best way of theorising this is as a Feyerabendian proliferation of theories, rather than a notional uniformity or truth. This pluralism, and range of speculative possibility, frees SF from what Heidegger saw as the danger in technological enframing, the way in which 'it banishes man into the kind of revealing that is an ordering. Where this ordering holds sway, it drives out every other possibility of revealing' [Heidegger, 332]. In this philosophical sense, SF must be a disorderly technology-fiction.

I should perhaps add that many readers of SF will not recognise the genre from my description here. Technology fiction is most often taken as precisely the bland gadget-driven narratives I say here it should not be. Hard SF, either as gadget or cosmological fiction, stories about spacecraft, weapons, prostheses, or about the universe as physics presently understands it, in which an iron rule of truth applies. Soft science fiction, on the other hand, is given more leeway by readers. By what strange logic techno fiction finds itself falling back against this untested, and ultimately Platonic, absolute truth, and science fiction finds itself able to explore the imaginative possibilities of human thought untrammelled by such concerns is not immediately clear. My belief, although it is not one I hold dogmatically, is that this division is explicable in the context of the historical development of science fiction itself. As outlined in the preface, and elaborated in greater detail in the whole of this book, I take modern SF to arise out of the cleavage of broadly Catholic and Protestant fictive world views, a separation I date from around the turn of the 17th century.

I am very specifically *not* saying that science fiction is exclusively a Protestant, and fantasy exclusively a Catholic, literature. There are many great Catholic science fiction writers, and many great Protestant fantasists, and increasingly (although only since the late 20th century) a very great many excellent SF and

fantasy writers who come from neither cultural milieu. Rather, I am suggesting that, speaking historically, SF expresses a particular dialectic that was originally determined by the separation of Protestant and Catholic world views, (or if one prefers less sectarianly charged terms, between deism and magical pantheism) that emerged in the 17th century. SF texts mediate these cultural determinants with different emphases, some more strictly materialist, some more mystical or magical. But without an understanding of the broader historical context many aspects of the tradition of SF are incomprehensible.

I think this explains why a Catholic writer like Verne limits his science fiction to technological devices, where a Protestant writer like Wells expands his vision in speculative and universal directions. It seems to me—to mention three eminent Catholic writers of the genre—that the mystical turn in SF, the introduction of magic (as in Blish's *Black Sunday*), of God (as The Outsider in Wolfe's *Long Sun* tetralogy) or of miracles (in Miller's *Canticle*), index an impulse to mark out that place where technology ends specifically *as a magic*, mystic area; the God of the Gaps of which the philosophers sometimes speak. Protestant traditions, such as produced writers like Olaf Stapledon, Robert Heinlein or Kim Stanley Robinson, are less respectful of the veil of the temple, and produce a different more fully scientific or knowledge fiction.

Immediately, though, I find myself wanting to qualify my argument. SF is much less hostile to the irrational and the religious than is sometimes thought (and, I think, fantasy is rather less hospitable to those things than has been assumed). In an era when the categories of religious believer and atheist have become often belligerently polarised—on both sides, although the latter camp is, by and large, more rhetorically belligerent than the former—hard science fiction has become, for some, a bastion of the non-believers. The best science fictional sense of wonder can unveil the universe's awe, majesty and splendour without any need for God or spirit or anything like that. This, of course, is not exclusively true, even of hard SF fans, and, taken as a whole, science fiction is at its best at a distance from the twin poles of absolutist belief and absolutist unbelief.

Let me have one last stab at definition, before moving on to the more detailed historical account of the growth of the genre. The axiom here, with which readers may or may not agree, is that human life has moved from a broadly religious understanding of the universe and our place in it, to a broadly secular one. This movement has not been a uniform cultural evolution, it has happened at different paces and to different degrees around the world. Science fiction is one important cultural index of that change. Saying so does not peg SF as a purely secular literature; and indeed, asserting that we live today in an age dominated by a secular logic (as Charles Taylor persuasively argues in his 2007 magnum opus *A Secular Age*) does not mean that belief in God has evaporated, merely that we have changed 'from a society in which it was virtually impossible not to believe in God, to one in which faith, even for the staunchest believer, is one human possibility amongst others' [Taylor, *A Secular Age*, 3].

One, perhaps counter-intuitive, consequence of this change has been to move the substantives of religious belief from a narrowly literalist into a much broader, and therefore more potent, mythic or metaphorical sphere—an area concerning which science fiction is uniquely well-positioned to speak. This shift has entailed a dilution of fideist intensity. Indeed, modernity rather prides itself on that: we reassure ourselves that we are less superstitious, less credulous, and more rational nowadays. Science has unpicked the literalist religious views of older cultures, replaced literal credence with mythic and metaphorical engagement. Once upon a time, Milton's Satan properly scared readers, as a piece of actual biography, an account of a real and terrifying individual. Now he occupies the same cultural-imaginative space as Tolkien's Sauron. Nobody *actually* gets scared by *Paradise Lost* nowadays. We don't actually get scared by Tolkien either, but the difference is that, with the later work, we're not supposed to.

The point, of course, is that the terror has not gone away. The awe-inspiring and terrifying vistas of deep space are only one aspect of existential anxiety that this technologically-mediated idiom attempts to, as it were, buffer for the benefit of modern sensibilities. We face the questions of extinction, individual and collective; of the irrevocability of our choices and crimes, of what we might do about that; of the enchantments and terrors of being embodied, or incarnated, consciousness in a cosmos like this. To understand why SF keeps reverting to these questions, and why the best SF is so very eloquent about them, we need to have an understanding of just how deep, culturally speaking, its roots are, and how the long span of historical change has shaped the genre's growth. In this Charles Taylor sense, as a wide-ranging cultural reaction to and engagement with disenchantment, an anatomisation of the remaining porosity of the modern human being, science fiction is the great secular culture of our time.

NOTES

1. Freedman's *Critical Theory and Science Fiction* (Wesleyan University Press, 2000), 24–30 discusses the question of literary canonisation, and SF's troubled relationship to 'the literary canon', in a non-paranoid manner. See also Roberts, 'Changes in the Canon', in Nick Hubble and Aris Mousoutzanis (eds), *The Science Fiction Handbook* (Bloomsbury 2013), 196–208.
2. J.J. Scarisbrick, *The Reformation and the English People* (Oxford: Blackwell 1984), xii.
3. In *Science de la science et réflexivité* (2001) Bourdieu explicitly distances himself from what he calls 'a naively Machiavellian view of scientists' strategies', in which 'the symbolic actions they perform in order to win recognition for their "fictions" are at the same time influence-seeking and power-seeking strategies through which they pursue their own glorification.' Nonetheless, he does insist upon an account of the scientific world as 'a universe of competition for the "monopoly of the legitimate handling" of scientific goods'. [Bourdieu, 120].

4. See Jenkins (1992). Also relevant here are John Tulloch and Henry Jenkins, *Science Fiction Audiences* (London: Routledge 1995) and Cheryl Harris, Alison Alexander (eds), *Theorizing Fandom: Fans, Subculture and Identity* (Cresskill, NJ: Hampton Press 1998).

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SF and the Ancient Novel

The previous chapter argued that the task of describing science fiction does not resolve itself into any kind of hard-edged ‘truth-claim’ or content-based *definition* of the genre, but rather into a delineation of the continuum by which SF can be meaningfully identified as that form of *Fantastika* that embodies a technical (materialist) enframing, as opposed to the religious (supernatural) approach we would today associate with genre fantasy. Fantastic stories are the default mode of human storytelling, going back as far as we have evidence. Humans’ tales have almost always included elements that are not reflective of the logic of the real world: magic, ghosts, gods, wonders, miracles and the like. A history of fantasy in the broader, non-generic sense would be a history of human storytelling from its earliest moments to the present day, bar only a few small 19th- and 20th-century offshoots (to be labelled realism).

An examination of the origins of the novel—the mode central to SF for much of its life as a genre—brings this sharply into focus. Margaret Anne Doody notes that the ‘history of the novel’ advanced by mainstream criticism, as dating from the late 17th or 18th centuries, overlooks the fact that ‘the Novel as a form of literature in the West has a continuous history of about two thousand years’ [Doody, 1]. Doody herself notes that this is no secret; classicists have undertaken many studies of ‘the Ancient Novel’, a form very popular in the first few centuries AD. Between five and eight complete novels (depending upon how long one requires a novel to be), two detailed summaries and a large number of fragments have survived, but this is a small fraction of the total number of novels written in Greek and Latin during the classical period.

Doody suggests some of the reasons why almost all critics of the English and Continental novel have ignored this vigorous novelist culture. Briefly, since the 18th century there has been a tendency to separate out the novel from the romance, reserving serious critical attention for the former (conceived as, in essence, realist) and denigrating the latter as fantastical, escapist or vulgar. Doody’s account of the reputation of romance will strike chords of recognition with the SF aficionado: as

a genre it 'is despicable, a term reserved for a certain low section of bookstore ... conveying literary pleasure the critic thinks readers would be better off without. It describes work that fails to meet the requirements of realism' [Doody, 15–16]. Nowadays, of course, in Doody's words, 'realism has faded away like the Cheshire cat, leaving its smile of reason behind'. It is time, she insists 'to drop the pretence that the primary demand of a long work of prose fiction is that it should be "realistic"'; a compelling rallying cry that readers of science fiction have been making, explicitly or implicitly, for decades. In polemical mode Doody insists:

Romance and the Novel are one. The separation between them is part of a problem not part of a solution. ... As the emphasis on that supposed distinction has often done more harm than good, I propose to do without it altogether. I shall call all the works I am dealing with 'novels', as that is the term we feel most positive about. [Doody, 15–16]

This is the practice followed also by the present work.

All surviving ancient novels involve fantastic elements, to one degree or another, and the task for a historian of science fiction is to sketch the fluid borders where SF can be usefully contradistinguished from a more supernatural fantastic. Ancient authors were comfortable with the literary idioms of what today we would call fantasy, magic realism, satire and even, in a sense, surrealism. For example, the 2nd century AD Latin author Apuleius wrote a comic romance under the title *Metamorphoses* (c. AD 170, sometimes known as *The Golden Ass*), in which the protagonist Lucius is transformed into an ass by black magic, undergoes various adventures, and is finally returned to human shape by the goddess Isis. Though delightful, the book is difficult to read as SF; it is, in a core sense, a magical-religious and, indeed, devotional fable. The sciences that most frequently informed ancient SF were either practical or technical, such as the sciences associated with naval navigation and warfare.

Another key element is the trope of odyssey, or *voyage extraordinaire*, which has occupied so central a place in discourses of science fiction, and which finds its origin in Ancient Greek literature. From Homer's *Odyssey* (7th Century BC), through epics, plays, histories, dialogues and later prose romances, Greek culture produced many hundreds of examples of fantastic voyages. Some of these were travellers' tales, based on actual or augmented experience, as, for example, voyages to Africa, India, or over the Atlantic. Some were purely fantastical and imaginative, as journeys to the lands of the dead, or into the heavens. Some 'liberal' critics of SF are content to classify all such *voyages extraordinaires* as early examples of the genre. A more common strategy is to concentrate critical attention on a small group of these narratives which detail journeys into the atmosphere, or journeys to the Moon and solar system.

THE ANCIENT COSMOS

The most important observation to make about Ancient Greek SF is that its proper realm is between the mundane, or earthly, and the divine, or theological, idioms. To have a clearer sense of this, we need to understand the version

of the cosmos that Greek science offered to imaginative writers. This altered over time, but was constant in one regard: celestial bodies were thought of as perfect, eternal and divine, and were indeed worshipped as gods. This can make it tricky for contemporary perspectives to separate the scientific from the theological perspectives on outer space, a difficulty made more acute by the fact that, for many Greeks (as for many medieval Europeans) there was no meaningful distinction between these categories in the first place.

The earliest Greek cosmologies postulated that the stars were glimpses of fire seen through holes in a sphere of mist surrounding the Earth. Sometime around 530 BC, Pythagorean thought replaced this model with one in which a mass of fire occupied the central position, the Earth, Moon, Sun and other celestial bodies revolving around this point at intervals determined by the harmonies of musical scales, all these celestial bodies being thought of as divine. Later models placed the Earth in the centre of the cosmos. So, for example, in the 4th century BC Aristotle postulated that the universe was composed of 59 concentric spheres with the Earth in the middle. The four inner terrestrial spheres constituted the four elements (fire, air, Earth, water) that Plato and Aristotle believed were the fundamental ingredients of all earthly matter. The remaining 55 spheres, composed of a mysterious fifth element, not found on Earth, carried the celestial bodies in a series of circular revolutions around the stationary Earth. This system is known today as the Ptolemaic model, although Ptolemy (more properly Claudius Ptolemaeus, a geographer and astronomer who worked in the 2nd century AD) was only one of many subsequent astronomers who refined this version of cosmological structure. Though theologically satisfying, this geocentric version of the cosmos does not explain all the motions observable in the night sky. In particular, planets seem to wander (the Greek *πλανήτης*, *planētēs*, means wanderer, or more forcefully, vagrant or tramp) from the path that would be expected if they moved in a clear circle around the Earth. Hipparchus (c. 190–120 BC) proposed that planets moved eccentrically but *within* their regularly rotating spheres. Ptolemy suggested epicycles, circular orbits around a point that itself orbits as a circle around the Earth, to solve this problem. This theory was preferred by many because it preserved the circularity of celestial orbits. The circle was thought of as a more perfect trajectory and therefore more appropriate to divine beings, although I confess I have personally never understood why. This model survived for nearly 1,500 years unchallenged.

The important thing to realise about this conceptual set-up is that it distinguished, in a manner of speaking, between secular and divine heavens. Aristotle's treatise on 'Meteorology' (μετεωρολογικά, approx. 330 BC) discusses not only aspects of weather, such as thunder and lightning, rain and wind, but also a number of phenomena we would think of as astronomical—comets, for example, and the milky way—as if they were meteorological. The reason for this is that, because such phenomena could not be reduced to the purity or simplicity required by the theological model of the cosmos, they were assumed to belong to the *sky* rather than the divine heavens. Not even the advent of the space age has purged SF of its nostalgic attachment to the sky as

the arena in which it takes place. As an example, the X-Wing fighters of *Star Wars* (1977) screech through the soundless vacuum and explode loudly when shot. Of course, we know intellectually that a vacuum is a perfectly soundless locale, but we feel, somehow, that these space battles are actually happening in the sky—like the Battle of Britain only higher up—and so we require aerial sound effects to make the scene believable to us.

What is interesting here is the relative fluidity with which sky and outer space relate to one another in the ancient mind. It misrepresents this sort of ur-SF to see journeys to the Moon as belonging to a category separate from journeys into the air more generally conceived. The Moon is seen by many writers as being ‘in the air’, in the same realm as the sun, stars, clouds and birds, and no more or less accessible than any of these things. Accordingly, the much larger corpus of Ancient Greek fantastical tales about flight and airborne explorations of strange lands has the same relationship to subsequent SF as the lunar adventures of Antonius Diogenes or Lucian. The important differential is religious, not scientific. The sky, and aerial phenomena, are thought of as akin to earthly phenomena, and for some writers even the Moon and Sun fall into this category. But the stars (for instance) are thought of as divine. In the words of Benjamin Farrington:

such, in the Pythagorean, Platonic, early Aristotelian and Stoic conceptions was the nature of the universe. The starry heavens were the visible image of the divine. As such they shared the lot of the gods and became the province of the theologian ... To hold other views was not a scientific error but a heresy. [Farrington, 2:87–88]

Ancient SF, including voyages into the air and voyages to the Moon, are conceptually distinct from journeys to the stars; they connect with material, practical discourses, such as the science of navigation, rather than strictly theological idioms.

The *voyage extraordinaire* into the sky has a lengthy pedigree. Euripides’ tragedy Βελλεροφῶν (*Bellerophōn*), now known to us only in fragmentary form, was produced perhaps in 430 BC. It dramatises Bellerophon’s attempt to fly up to Heaven on the back of Pegasus, the winged horse, in order to confront the gods directly with their various injustices. Pegasus unseats him in mid-air and he tumbles back to Earth; he appears at the end of the play crippled by his fall. Aristophanes, the comic poet, satirised Euripides in many plays, and Εἰρήνη (*Eirēnē*, Peace, 421 BC) ridicules this play in particular. Aristophanes’ protagonist is a farmer called Trugaios, a man so wearied of Athens’ long war with Sparta that he flies up to Heaven on the back of a huge dung-beetle to remonstrate with Zeus. A later Aristophanes’ play, Ὀρνιθες (*Ornithes*, Birds, 414 BC) continues the aerial theme. In it, two Athenians, Euelpidēs and Pisthetairos, disgusted with the degeneracy of their countrymen, pay suit to the King of the Birds, Epops. They persuade him and his avian followers to build a utopian new city in mid-air, called Nephelokokkugia, or Cloud Cuckoo town.

The earliest surviving text that takes a strictly cosmic, rather than merely aerial, view is the *Somnium Scipionis* (*The Dream of Scipio*, 51 BC) by Marcus Tullius Cicero; a brief prose fable placed by Cicero at the end of his political tract *De re publica*. In this text the younger Scipio dreams of his deceased and eminent grandfather, the older Scipio. He is shown the dwelling amongst the stars that is destined for those who follow the paths of virtue in their lives, and particularly for patriots who defend their country. The text zooms out, as it were, from Carthage to a breathtaking perspective of the whole of the galactic 'Milky Circle' where the dreamer sees 'stars which we never see from Earth'. The fable's sense-of-wonder (stars 'larger than we have ever imagined ... the Earth seemed to me so small that I was scornful of our Roman empire, which covers only a single point, as it were, upon its surface') overpowers the ethical moral of the whole, and a sense of wonder, familiar from later SF, supervenes upon a treatise of familial piety.

EARLY NOVELS

The works cited so far occupy a variety of literary modes: poetry, drama, philosophical discourse. Of particular interest to the development of SF, however, is the novel. SF was—until recent significant interventions in the mode of film and TV—primarily a novelistic form of art. It is perhaps for this reason that Lucian Samosata is so often cited as the first SF author. He did, certainly, write a proto-SF novel involving a journey to the Moon, but in point of fact romances of this type were being written a hundred years before Lucian, although his is the first to survive into modern times entire. Nonetheless a number of pre-Lucian SF novels can still be identified. Especially interesting for our purposes are those texts in which a scientific discourse and a speculative-fantastic discourse come together. One author with an interest in both fields was Plutarch (Mestrius Plutarchus, c. AD 45–c. AD 125), an essayist and historian from Boeotia, Greece. A prolific and wide-ranging writer, the author of some 227 books, much of his work has survived to the present day, including 50 biographies of famous figures, and 78 miscellaneous works. These latter, collected under the rather misleading title of *Moralia* (*Moral Works*) include works on philosophy, religion, rhetoric, biology, physics and cosmology.

Plutarch's *Περὶ τοῦ ἐμφαινόμενου προσώπου τῷ κύκλῳ τῆς σελήνης* (*Peri tou emphainomenou prosōpou to kuklō tēs selēnēs*, *On the Face Apparent in the Circle of the Moon*) dates from about AD 80. Most of it is a discussion about possible explanations for the marks evident in the face of the Moon. The theories rehearsed reflect contemporary scientific enquiry: on the one hand the belief that the Moon is made of a fiery, clear substance that acts as a mirror, with the marks visible being reflections of terrestrial oceans; on the other that the Moon is made of Earth, or an earthy substance, and its marks are impurities in it, or else shadows cast by sunlight. From this, the discussion moves on to the question of whether the Moon is inhabited. One of the interlocutors, Sulla, recalls meeting a stranger from a continent on the far side of the Atlantic, who

had revealed the nature of the heavens to him, namely, that human beings are born with three elements (body, mind and soul), and that terrestrial death destroys only the body, whereupon his mind-soul migrates to the Moon to live there until a second death release the soul. 'One death reduces a man from three to two, and another reduces him from two to one ... where the goddess here on Earth severs soul from body quickly and violently, Phersephonês [on the Moon] separates mind and soul slowly and gently' [943b]. This goddess judges the inhabitants of her realm, 'sweeping off some as they cling to the Moon', although those 'who have found a firm footing walk about there triumphally crowned with feathers' [943d].

Just as our earth contains deep gulfs ... so those features are also present on the Moon. The largest of these is called 'Hekatê's Innermost Place', where souls suffer and are punished for the things they have done after they have become spiritual beings, and two lengthy ones are called 'the Gates', because souls pass through them from the side of the Moon that faces the heavens to the side that faces the earth. The side of the Moon that faces the heavens is called 'the Elysian Plain', the other side 'the House of Anti-chthonic Phersephonês'. [Plutarch, *Peri tou prosôpou*, 944c]

Of itself, this eschatological fantasy might be considered a work of speculative religion rather than SF, but the juxtaposition of science and fiction creates a whole that works on the boundaries of established science in a speculative fashion. Neither is this mixture of scientific enquiry and fantastical extrapolation an uncomfortable one. As D A Russell points out,

the passage from science to fantasy should not be misinterpreted. It is to miss the tone and purpose of the dialogue to detect a clash between the clarity and acumen of the preceding arguments on astrophysics and the Moon-mythology ... Both science and religious myth belong to the same range of elevated 'cosmic' subjects. They demand elaboration and magnificence, not bare factual statement. [Russell, 72]

In other words, Plutarch's fantasy is a way of doing science via elaboration and invention, which is to say, it is SF. Something similar happens in another Plutarchian dialogue, *Περὶ τοῦ Σωκράτους δαιμονίου* (*Peri tou Sôkratous daimonion*, *On the 'daimon' of Socrates*, written c. AD 90). As with the *Peri tou prosôpou* the science-fiction element here is only a small portion of the whole—a whole which is, in this case, a historical tale set in 379 BC concerning a group of conspirators who are planning to overthrow the tyrants of Thebes. One character relates an out-of-body experience:

When he looked around the earth was nowhere to be seen, but he saw islands shining fire softly upon one another with first one colour, then another, like red-hot iron dipped in cold water [or, like cloth dipped in dye], as the many-coloured light kept changing. They seemed infinite in number, and absolutely enormous, and though they were not all the same they were nonetheless all circular in shape ... In

their midst was a sea or a lake, through whose blue-grey transparency the colours travelled; and of the islands, some sailed out across the flow, and others were swept along with it, the sea drifting round ... [Plutarch, *Sókratous daimonion*, 590c-d]

This trope of interplanetary space as a 'sea' and celestial bodies as 'islands' is a common one in the ancient world, a mode of expression balanced between literal and metaphorical. In some respects it still is; we still launch our spaceships from capes, call them shuttles and vessels, after all.

Antonius Diogenes' *Τὰ υπέρ Θούλην ἀπιστά* [*Ta hyper Thulên apista*, *The Wonders Beyond Thule*] dates from around AD 100. It is available to us now only in condensed form, as one of the books summarised by the 9th-century Byzantine scholar Photius in his *Βιβλιοθήκη* [*Bibliothékê*, *Library*]. As with the Plutarch works mentioned, the visit to the Moon in this early novel is only one small part of a larger series of romantic adventures. The protagonists travel widely, from Sicily to Thule (the Greek term for a far-northern island, possibly Iceland or Scandinavia), and into the Arctic Circle from where it is possible to pass upwards to the Moon [Photius 111a]. The lunar world is described as a *γῆν καθαρώτατην*, a clean, pure, spotless land (the phrase might also be translated as open or free land). Returning to the Earth, the characters have many more adventures which ultimately end happily. Much in the story is in fantastic-romantic style: the heroes, captured by 'cruel and stupid' Celts, escape on horses that change their colour; in Spain they encounter a village where the people see at night but are blind during the day; one of their party, Astraios, has eyes in which the pupils dilate and contract in consonance with the phases of the Moon; characters die, and are brought back to life. But what makes the work especially interesting is the extent to which this romance enters into a dialogue with the science of its time. Reyhl, for instance, argues that Antonius dramatised Pythagorean philosophy in his romance, 'following the Pythagorean belief that the hills and valleys of the Moon were inhabited by fantastic creatures' [Georgiadou and Larmour, 39].

The classical author most consistently cited as a father of science fiction is Lucian (c. AD 120–190), sometimes called Lucian Samosata after his birthplace, Samos. His claim to generic paternity rests on two works amongst his many: the *Ἰκαρομένιππος* (*Ikaromenippos*) and the *Ἀληθῆ διηγήματα* (*Alēthē diēgēmata*, *True Histories*), both written some time between AD 160 and 180. The first of these is a dialogue between Menippos and a friend, in which the former relates how he attached an eagle's wing to his right arm and a vulture's wing to his left, and used these to fly up into the heavens (in the manner of the myth of Ikaros, or Icarus; hence the title). Menippos, frustrated with the contradictory squabbings of earthly philosophers, each of whom claim unique truth, decides to ask Zeus in Heaven about the real state of affairs. He flies first up to the Moon, where he gains a splendid vantage point from which to survey the Earth below him. Then he flies past the sun and up to Heaven itself to consult with Zeus. The narrative, in other words, moves through science fiction to theological fiction.

The *Alēthē diēgēmata* is even more famous, and may have been a satire upon the more extravagant adventures recorded in Antonius Diogenes' *Ta huper Thulēn apista*. The tale involves an eventful sea-voyage westward over the Atlantic. In the first episode of this narrative the voyagers stop at an island where rivers of wine flow, and where Vine Women—with female upper-parts but rooted vine-trunks below—ensnare several of the narrator's crew. The second episode sees the voyagers' ship swept up into the sky by a massive whirlwind:

While our vessel hung in the sky the wind caught her sails and propelled her onwards. For seven days and nights we sailed through the air, and on the eighth day we saw a large country in the sky, like an island, bright and circular and shining with light. [Lucian, *Alēthē diēgēmata* 1:10]

Landing on this 'sky island', which is of course the Moon, the voyagers are captured by soldiers riding three-headed flying 'horse-vultures' and taken to the lunar King, Endymion. Thereafter they become involved in a war between the peoples of the Moon and the peoples of the Sun. King Endymion deploys his horse-vultures and a troop of vegetable birds, and is reinforced by allies 'thirty-thousand flea-archers and fifty-thousand wind-runners'. King Phaethon, lord of the Sun, puts his Ant Cavalry on the field ('huge beasts with wings, resembling the ants we have but much larger') and Sky-mosquitoes. The war is won by the Sun, and a treaty of peace agreed. Lucian details some of the 'strange and wonderful things' about Moon life, and then takes his ship back through the sky and onto the ocean again (it is significant that he proceeds no further into outer space; the Sun and Moon are assumed to be within earthly reach; to travel further out would run the risk of impiety). When he splashes down, we are perhaps a quarter of the way into the *Alēthē diēgēmata*; very many strange adventures follow.

A proper account of these two texts needs to read them in the context of Lucian's 80 or so titles, many of which detail fantastical, parodic or extraordinary adventures, although only these two include journeys to the Moon. As the précis of the *Alēthē diēgēmata* suggests, the Moon interlude is only one episode in a larger peripatetic work. Returning to the Earth, the travellers go on to be devoured by an enormous whale and live inside its belly for two years; they visit islands on which milk flows like water; see nations of men living on the surface of the ocean supported by feet made of cork instead of flesh; sojourn with the famous dead on the Isle of the Blessed; visit the Isle of Dreams; and encounter mariners who sail the sea in hollowed-out pumpkin shells, and others who sail on their backs, with their (presumably sizeable) penises straight up as a mast, from which a sail is hoisted, steering by 'holding their testicles in their hands' [*Alēthē diēgēmata*, 2:45]. This last detail, in particular, gives a sense of the tone of the whole: outrageous, inventive, bizarre and very funny. It is also a highly intertextual work, woven from quotations, allusions, pastiche and parody of a wide range of other works, from Homer through Greek philosophy, history

and geographical works, to the fantastic romances popular in the 1st century AD. The ironic title indicates the ways in which the book explores the playful exuberance of lies and lying. If we want to determine to what extent we can call *Alēthē diēgēmata* science fiction, we need to have a sense of how falsehood inflects the interaction between science and fiction. It perhaps overstates the case to assert, as John Griffiths does (amongst many), that 'Lucian's *True Histories* does not qualify as science fiction' because it 'rather deliberately sets out to be ridiculous and implausible in order to make its point' [Griffiths, 33]. But we can at least suggest that, for Lucian, a visit to the Moon is not a serious possibility precisely because the whole of the *Alēthē diēgēmata* refuses the discourse of seriousness.

Many critics, however, do find it meaningful to talk of the *Alēthē diēgēmata* as (to cite the title of Georgiadou and Larmour's detailed study) 'Lucian's Science Fiction Novel':

Scientific knowledge in the fields of geography, astronomy, zoology and anthropology pervades the narrative, even if it is visible mainly through the lens of parody: the reader is constantly presented with information about islands, and rivers; the sun, moon and stars; plants, birds, fish and animals; and the customs and appearance of other beings. [Georgiadou and Larmour, 45–6]

For other critics, the science-fictionality of Lucian's work resides less in its parodic discourse of science and more in the powerful cognitive estrangement it achieves. According to Fredericks, Lucian is 'like a modern SF writer' because he 'takes the science and other cognitive disciplines available to him and pictures alternative worlds which can dislocate the intellects of his readers in such a way as to make them aware of how many of their normal convictions about things were predicated upon clichéd thinking and stereotyped response' [Fredericks, 54]. But it is probably more accurate to describe Lucian as an allegorical, or mythic, writer. When Menippos leaves the Moon to fly to Heaven, the Moon herself addresses him as a personified female figure. She asks him to petition Zeus on her behalf, to destroy the philosophers who 'pour dreadful abuse' upon her: 'some of them say I am inhabited, some that I am suspended over the sea like a mirror, and others say whatever their imagination suggests to them. Recently they have even declared that my light is stolen and illegal, coming from the sun'. What especially annoys this Moon goddess is that she herself sees these same philosophers committing 'shameful, appalling' deeds by night, 'committing adultery, or burglary, or anything else best suited to night-time ... yet although I see all this, I say nothing about it, I don't think it's proper to expose these nocturnal activities ... I gather my garment of cloud about me and veil my face, so that the ordinary people can't see these old men bringing shame upon themselves and on virtue' [*Ikaromenippos*, 20–1]. Lucian's sympathy is with the mythic, not the scientific, mode. The conception of the Moon as a goddess, watching Earth from the sky and drawing cloud about her as a garment, clearly owes nothing to 2nd-century scientific understanding

of the cosmos; in fact, such understanding (represented by the ‘philosophers’ that Lucian consistently attacks) is specifically repudiated. Similarly, in *Alēthē diēgēmata* the trip to the Moon finds that world presided over by the legendary Endymion (who in myth was a mortal lover of the Moon goddess). Lucian finds a harmony and imaginative strength in the religious, mythic discourses of the cosmos, where he tends only to ridicule the philosophical or ‘scientific’ discourses. As Georgiadou and Larmour put it:

In the lunar adventure of [*Alēthē diēgēmata*] and *Ikaromenippos*, the main subject is the disagreement among the various groups of philosophers ... in *Alēthē diēgēmata* the dispute is presented as a literal battle between fantastic forces, which, on at least one level, represent the outlandish notions and theories of the philosophers, or the arguing philosophers themselves. [Georgiadou and Larmour, 16]

It would be more accurate to see Lucian as anti-SF rather than proto-SF, but anti-SF nevertheless involves an engagement in the terms of SF. Ancient SF, in other words, is not a single-minded or pure idiom; it mediates on the one hand scientific speculation and *voyages imaginaires*, and on the other religiously conceived fable.

CONCLUSION

There is a curious irony in the traditional belief that Lucian is the first science fiction author. In fact he comes at the end rather than the beginning of a vigorous tradition of fantastic voyages into the sky and to the planets in the classical world. The many gaps in our record of ancient literature mean that what was, in all likelihood, a more or less continuous genre of imaginative, speculative adventure stories, seems partial and chronologically broken-up. The missing texts between the ingenious fantasies of Attic comedy in the 5th-century BC and the speculative scientific romances of the 5th-century AD give a misleading sense of discontinuity; but the gap that ensues, when Hellenistic and Roman culture collapses into what historians still call the Dark Ages, is very real. For over a thousand years SF fell into abeyance as a literary mode. Its disappearance was connected, very obviously, with the more general collapse of literary culture, and of literacy itself. But the delay in its re-emergence presents us with a more interesting problem. A varied and rich literary tradition re-appeared early in medieval culture, but it is many hundreds of years after this that SF is written again. The reasons for this hiatus are discussed in the following chapter.

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From Medieval Romance to Sixteenth-Century Utopia

There existed, then, a vigorous kind of science fiction in the Classical world. The bulk of the present work explores the florescence of SF from the early 17th century onwards, propelled by the twin impetuses of the Protestant Reformation and the associated Renaissance of learning and culture. This leaves us with a very significant hiatus—1,200 years, give or take—to deal with. The reader is entitled to ask: what happened to SF from approximately AD 400 through to the beginning of the 17th century?

There was certainly no shortage of fantastical tales and romances over these dozen centuries. Many tales of fantastic voyages were written. Most of these are quests and adventures limited to a contemporary earthly arena, but some authors detailed voyages away from the Earth that inhabited a wholly religious, theological, and supernatural idiom. Of the latter the most prominent example is the epic *Divina Commedia* (*Divine Comedy*) of the Italian poet Dante Alighieri, most likely written between 1307 and the poet's death in 1321. In the first portion of this devoutly Catholic poem, *Inferno*, the narrator travels through Hell, conceived geographically as a world within the (hollow) Earth. The second, *Purgatorio*, traces a journey up an improbably elevated mountain in the antipodes and the third, *Paradiso*, out through the solar system. But every line of this massively influential poem is inflected by a deeply spiritual and theological purpose. In a profound sense Dante's universe is not a material one, but is instead sacramental, connected at every point to the Grace of God.

There is more than a merely pigeonholing instinct at work in excluding such religious texts from a history of science fiction. Take, for example, the Katherine Group, a number Middle-English prose works composed around AD 1200 and detailing the lives of various saintly women for devotional and religious purposes. Alexandra Barratt observes of one of these prose legends (*Katherine of Alexandria*) that it is 'a lively story with plenty of fairy-tale and romance elements':

a magnificent minster appears and disappears; doors open of their own accord; an aged hermit overgrown with hair mysteriously materializes in Katherine's study; a phantasm takes her place in Alexandria while she attends a mystical nuptial mass in the desert; her martyred body is transported by angels to Mount Sinai. [Barratt, 234]

These extraordinary occurrences might be thought of as Suvinian *novums*, and therefore as approaching the 'cognitive estrangement' of SF; and, indeed, equivalents can be found in canonical SF (*Star Trek*'s self-opening doors and mysterious materialisation device; the 'phantasmic' copy of Maria in the film *Metropolis*; and so on). But in a crucial sense these marvellous events, as miraculous and non-material irruptions into the material world, are not novums in the Suvinian sense.

There was also a very extensive and lively tradition of secular romance during the period 400–1600, but even in this non-miraculous idiom religion shaped imaginative literature. As Margaret Ann Doody puts it 'the great change in religion in the West, as Christianity took hold and commanded the ethical centre of the lives of millions of men and women, certainly had a great and even permanent effect upon literature, including narrative fiction' [Doody, 181]. She goes on to quote the 12th-century French poet Jean Bodel de Arras, who declared that

Ne sont que iii matières à nul homme attendant
De France, et de Bretagne et de Rome la grant.

'There are only three matters that any man can attend to, The matters of France, of Britain and of Rome'. By matter Bodel meant a body of stories and myths that provided proper topics for medieval romance. The matter of France concerned the stories of the Emperor Charlemagne, the great Knight Roland, and associated figures; the matter of Britain was the legend of King Arthur and his knights. Both matters inflected romances as heavily chivalric, and although they contained many magical and supernatural elements they had very little to do with SF. The matter of Rome covered anything from the myths of Troy through to the Roman Caesars, and tended to be treated in medieval texts (such as Benoît de Sainte-Maure's *Roman de Troie*, 1160) in like chivalric mode to Arthurian and Charlemagnian tales. In addition to these more elevated, poetical works, European medieval culture produced a large number of shorter comic tales (known as *fabliaux*), and many stories that were of oral provenance and circulation, and which have accordingly survived only poorly to the present day (such as the stories of Robin Hood the outlaw). All this must, in turn, be placed in a cultural context in which the majority of books produced pre-printing were devotional and practical. When an anonymous landowner from Asia Minor died in 1059 and bequeathed his library to a monastery, the contents give us some sense of the representative spread of topics on which books in this period were written: 57 Bibles, liturgies or patristic works; five lives of saints; and 17 secular works, including a book on the interpretation of dreams, an edition of Aesop's fables, and one solitary Greek novel.

In other words, literature from the end of the Dark Ages to the Renaissance consisted of either explicitly religious texts, or else of religiously-inflected chivalric romance. It is also, as Doody notes, more often than not in the form of poetry rather than prose: 'writers of the Middle Ages, from the tenth to the fourteenth century, tend to produce fiction primarily in verse.' Scholars have agreed no single explanation for this, although 'we may surmise that prose narrative largely disappears' in this period 'because city life is essential to the production of novels' [Doody, 183].

Of course, literature did not stop being religious in 1600. In many ways it continues to be religious in the 21st Century, in SF as much as anything. Nonetheless, a vital shift of conceptual emphasis opened up the possibility of a science, or more properly a technology, fiction, only in the 17th century. Medieval romance was earthly. Beyond the universe, in Ladina Bezzola Lambert's expressive phrase, was a 'finite geocentric cosmos ... largely an amalgam of (Neo)Platonic philosophy, Aristotelian cosmology and Christian theology. Its most conspicuous characteristic was the distinction between a terrestrial realm opposed to a metaphysical-transcendental one in the heavens.' The celestial realm 'was believed to consist of so superior and pure an essence as radically to defy any comparison with earthly matter' [Lambert, 2]. As with the Greek novel, translation into the heavens was translation into a divine rather than a material realm; but, unlike the Greeks, medieval interplanetary voyages partook of a monotheistic unity, indexing a totalitarian religious authority that denied the imaginative possibilities that SF requires. This culture can produce a Dante, but not an Asimov.

An example is the trip to the Moon (sometimes cited by critics as an originary point for SF to be found in the epic-romance *Orlando Furioso* ['Mad Roland' 1534] by the Italian poet Ludovico Ariosto). This poem relates the adventures of the great knight Roland, subject of Charlemagne (and is therefore part of the matter of France) who loses his wits and runs naked through the forest destroying everything he encounters. Since Charlemagne's kingdom is under threat from the Saracens it is imperative that Roland, France's greatest warrior, be cured. To effect this, the English knight Astolfo mounts on the back of a hippogriff, a fabulous winged creature, and flies first to the terrestrial paradise, on top of a high mountain, where he meets John the Evangelist. From there Saint John accompanies Astolfo as they fly up to the Moon—because it is to the Moon that all the things lost on Earth, such as Orlando's wits, make their way. To be precise, things lost on Earth reappear on the Moon in metaphoric form: poetry rehearsed to flatter great lords appears as burst crickets; deeds of charity that came too late appear as spilt soup; the beauty lost by ageing ladies, as multitudinous snares covered with bird-lime; and so on. With Saint John to interpret, Astolfo is made aware of the true significance of all the variegated lumber he encounters on the Moon. Lost wits, such as Roland's, take the form of bottles filled with a delicious liquor and bearing the name of their former owners. Astolfo retrieves Roland's wits and returns to Earth. Since one of the key strategies of SF is literalising metaphors, it might look as if Ariosto's

Moon is a characteristically science fictional place. But there is nothing *systematic* about the imaginative literalisation of Ariosto's metaphors. They exist in the text for purely local reasons (in this case, reasons of satire and colour). If an enterprising poet were to rewrite this poem, building its world around a strategy by which human consciousness were liquefiable and capable of transportation to the Moon, it would look more like SF, especially if the poem explored the consequences for society as a whole of so bizarre a technology.

Still, Ariosto's epic is on the cusp of something, beginning to move away from the plainer magic of medieval romance and closer to the kinds of structural fabulation that were to appear in the 17th century. When Astolfo first approaches the Moon, it seems to him 'come un acciar che non ha macchia alcuna' ['like polished steel without any blemish', Ariosto, 34:70], but as he flies closer he notices that it has a landscape like Earth's, with 'altro fiumi, altri laghi, altre campagne ... c'han le cittadi, hanno i castelli suoi' ['other rivers, other lakes, other fields ... they have their own cities, their own castles', Ariosto, 34:72]. As Constance Lambert notes, this double apprehension reflects the 'two diametrically opposed, though equally current, symbolic readings of the Moon', as a symbol of purity associated with the Virgin Mary, and as a symbol of corruption and inconstancy [Lambert, 24n.]. Indeed, this symbolic ambiguity is reflected in precisely the status of the Moon: as the dividing line between the corruptible, material, sub-lunary world and the pure, eternal, divine celestial realm above. Astolfo does not genuinely travel to another planet; he journeys (with divine sanction, and under the chaperonage of Saint John) to the limit of the material realm. Despite the similarities with the lunar voyages of the 17th century, Ariosto does not begin a new form of science fiction in *Orlando Furioso*. Rather he takes material Man as far as he is permitted within the theological constraints of the pre-Copernican cosmos. SF cannot happen in that place.

Of course, it need not follow that the separation of science from magic cleanly and directly informs any distinction between SF and fantasy. Much science fiction throws a cloud of unknowing over its speculative science in a way that renders it functionally magic. For example, when George Lucas's fourth *Star Wars* movie—1999's underpowered *The Phantom Menace*—introduced under the rubric 'midichlorians' a quasi-scientific explanation for the magical powers possessed by his Jedi wizard-knights, the 'explanation' was roundly derided. Rightly so. Midichlorians are rubbish, adding nothing to the imagined worlds of the movies in vividness or eloquence, whilst diluting the sublimity of 'the Force' by making it the offshoot of a kind of yeast or prion. As the opening chapter argued, the genre salient is only strict scientific plausibility in that one sub-culture known as hard SF. Most SF takes a more liberal, permissive attitude to its extrapolations. That said, science fiction follows science in treating its worlds as fundamentally material, fundamentally tractable and fundamentally other—that is, as objective to the individual's subjectivity. Dante's cosmos is shaped by different logics, being fundamentally spiritual and divine, fundamentally fixed (by, in his case, the Law and Love of God) and in a fundamental sense subjective, an actual externalisation of the soul's strengths and transgressions. Because human subjectivity

is always localised and deals in intensities it resists the kinds of large-scale systematisations that have characterised science. We could add that, for many people, it is precisely this fact that devalues science, or at least leads to a broader sense that there has been an alienation between science and humanness.

SIXTEENTH-CENTURY UTOPIAS

An important mode of imaginative extrapolation important to the development of science fiction is utopian writing. Such stories of ideal societies take their name, of course, from Sir Thomas More, whose *Utopia* was published in Latin in 1516. This slim book relates a voyage to an imaginary island called Utopia (the name is a three-way pun suggesting *ou-topos* or nowhere, *eu-topos* or good-place, and u-topos or u-shaped land, which describes the geographical disposition of More's imaginary island). Society in Utopia is organised along improved lines: goods are held in common; education is widespread; the population are well ordered, productive and happy; and so on. This *History* treats utopia as a mode of science fiction, a position with which many, and perhaps most, critics would not agree. Darko Suvin for example defines utopia as 'the construction of a particular community where socio-political institutions, norms and relationships between people are organized according to a radically different principle than in the author's community'. He considers utopia only science fiction when 'not based principally on socio-political but on other, say biological or geological, radically different principles' (although he does concede that 'the understanding that sociopolitics cannot change without all other aspects of life also changing had led to SF becoming the privileged locus of utopian fiction in the twentieth-century' [Suvin, 383]). Raymond Williams identifies four modes of utopian writing: paradise; externally altered world ('in which a new kind of life has been made possible by an unlooked for natural event'); willed transformation; and technological transformation. Yet despite what he called 'close and evident connections between science fiction and utopian fiction', neither is what he calls 'a simple mode'. Indeed he thinks 'the relationships between them are exceptionally complex' [Williams, 196]. His point is to separate out a utopian Morean 'cooperative simplicity' from an, as he sees it, Baconian 'mastery of nature' more properly science fictional. Indeed, he says that 'one might write a history of modern socialist thought in terms of the swing' between these two modes.

If this makes More's 'good-place' sound appealing it is bracing to return to the original novel. As Peter Ackroyd points out, More's Utopians, in addition to their various improvements in social practice, also 'encourage euthanasia, condone divorce and harbour a multiplicity of religious beliefs—all of which actions were considered dreadful by More himself and by Catholic Europe'. Ackroyd is surely right to argue that these 'errors' are a function of the fact that More's Utopians 'throughout their history of 1760 years have been denied the truths of divine law ... [Utopia] may be no ideal commonwealth after all, but a model of natural law and natural reason taken to their unnatural

extreme' [Ackroyd, 168–9]. At all points in the text this imaginary land is connected deictically to More's own country, and More's own devoutly held Catholic beliefs. The dimensions of this land are the same as England, with the same number of city-states as England has shires. The main city of Utopia, Amaurotum, is the same size as the city of London, with a main tidal river like the Thames, a grand stone bridge like London Bridge, and many other smaller points of identification. In short 'it is London redrawn by visionary imagination' [Ackroyd, 167]. But the didacticism of that visionary imagination is informed at all points by a traditional Catholicism; Utopia is a highly restrictive, authoritarian model of society.

One way of articulating the difference between utopia and science fiction as a mode might be to say that the former take their germ from More's static, Catholic work, the latter from the mobile Protestant *voyage extraordinaire* of Kepler's *Somnium* (1634), discussed in the following chapter. There *is* a voyage to More's *Utopia* (1516), but the bulk of the book is remarkably rooted and stay-at-home. The Utopians themselves are not travellers or explorers (they must obtain a license even to visit another of the Utopian cities), and in Tony Davies's words 'what is interesting' about the book 'is how un-futuristic it all seems, its peaceful, equitable community combining monastic simplicity of life with the imagined tranquillity of a long-forgotten golden age' [Davies, 73].

Nonetheless, the present study reserves an important place for More's novel and its imitators in the history of science fiction. The point about More's *Utopia* is not that it imagines a better world. Literature, culture and everyday human discourse had been imagining better worlds for thousands of years—a better harvest, better hunting, more glory in battle. What makes More different is that he attempted to imagine a better society *systematically*; that he approached the question 'how could things be better?' by, to use the anachronistic term, *world-building*. It is not enough that this or that individual element be better. The whole structure of society must be re-imagined. Although it manifests a very different logic to the separate iconicism that treats SF as defined by its individual novums, the importance of this mindset for science fiction is hard to overstate.

Not all the utopias written during the 16th century followed this systematising logic as thoroughly as More. Humanist scholar Ortensio Lando translated More's book into Italian, and published his own work as by 'Anonimo di Utopia' ('an anonymous Utopian'). The utopian fantasy *La Città Felice* (*The Happy City*, 1553) by Venetian scholar Francesco Patrizi owes much to More, although it is less a fiction than a straightforward proposal—indeed, a manifesto. The result, though very dull, is certainly systematic.

A safer way of putting it would be to say that as utopia began to develop as a mode of writing in the later 16th and (especially) through the 17th century it cross-fertilised the developing tradition of SF in important ways. Certainly, insofar as utopias allowed thinkers to exceed the imaginative impedimenta applied by the Catholic Church, they provided conceptual possibilities that were akin to science fiction proper. English scholar and divine John Case wrote various conventionally styled commentaries upon Aristotle; but where his com-

mentary on Aristotle's *Politics*, *Sphaera Civitatis* (1588), was concerned Case explicitly presents it as an exercise in utopian writing: exploring 'ideas in animo cum Platone, eutopias cum Moro'; 'Platonic ideation and More-like utopias'. Indeed, Case takes pains to separate 'counter-factuals' from impossibilities. The latter mark the divine limits set for human enquiry; the former are needful cartographies of moral failure to help men travel on better paths. Addressing the charge that writing utopias was fanciful to the point of blasphemy, he says:

Platonum, Morum, Aristotelem de optima republica philosophantes audio, et quavis eas describant civitates quae non apparent, inanis tamen non est eorum disputatio. Nam si attentius rem consideres, causa cur non appareant non est in defectu virtutis, sed in appetitu hominis, qui magis affectum quam mentem et rationem sequitur. Impossibile ergo dicitur duobus modis, aut absolute quod fieri non potest, exempli causa ut Deus seipsum neget, aut comparete, quod fieri quidem potest, actu tamen non fit, verbi gratia ut homines solum ad nutum virtutis viverent suasque civitates secundum normam rectae rationis gubernarent. Haec inquam non fiunt, non quod fieri non possint, sed quod mortales appetitus magis quam intellectus, affectus magis quam virtutis.

[When Plato, More and Aristotle philosophise about the best republic—I listen; for even though the cities they describe don't exist, they are certainly not wasting their time. Only consider the matter carefully: the cause of this non-existence does not lie in a failure of virtue, but rather in the appetites of men, moved by emotion rather than mind and rationality. Therefore the impossible can be described in one of two ways: a thing is either *absolutely* impossible, because it cannot come to pass (for instance: that God should deny Himself), or *relatively* impossible, which describes something that can indeed happen, but does not do so in actuality (for instance: that men should live according to the laws of virtue and rule their commonwealth according to the principles of right reason). These things, I say, do not come to pass, not because they cannot, but because mortal men are slaves to their passions rather than to virtue and ruled by appetite instead of intellect.] [Case, 326]

This opens, almost as a matter of moral imperative, the vital space for *speculation* that in turns feeds into the main line of science fiction.

By no means all authorities agreed with such imaginative license. Franz Hildesheim's *Mundi Catholica* (*Catholic World*, 1580) warns that 'hinc conspicatus eutopiae fines corda gravi [such chasing after eutopias ends only in a heavy heart]'. German Catholic Kaspar Stiblin attempted in his *Commentariolus de eudaemonensium republica* (1555) to imagine utopia as, in effect, an idealised Papacy. Nor was the stress on Orthodoxy all on one side. In his anti-papal *Pappus Elenchomenos* (*The Pope Rebuked* 1581) Johann Strum declares that, without the help of 'Luther and Zwingli' he would be living in a bad place ('ego adhuc superstes improbo') no matter where he was domiciled, be it Europe, Eutopia or Utopia ('sive in Europa, sive in Eutopia, sive in Utopia') [Sturm, 113]. That shift from an actual continent, through an 'ideal place' to the full More, like the steps in a word ladder verbal game, indicates that the stakes involved a tacit continuum from real world to systematically imagined ideal.

In part for this reason, the intellectual freedom and novelty of utopian writing tended to align that mode with 16th-century radical and Protestant discourses. Only a few years after More's (Catholic) original text, German Protestant preacher and firebrand Johann Eberlin von Günzburghas published his *Wolfaria* (1521); a detailed and specifically Lutheran utopia. Daniel Weil Baker's *Divulging Utopia: Radical Humanism in Sixteenth-century English* (1999) explores in detail the connection between utopian thought and political radicalism. In works like Thomas Nicholls' *A Pleasant Dialogue between a Lady called Listra and a Pilgrim, Concerning the gouernment and common weale of the great prouince of Crangalor* (1579) and Thomas Lupton's *Sirqila, Too Good to be True* (1580), Protestantism becomes the template for social melioration in the works' ideal lands [see Houston 41–60].

The Italian churchman Tommaso Campanella (1568–1639) wrote his utopia, *La Città del Sole* (*The City of the Sun*) in 1602, later publishing it in Latin as *Civitas Solis* (1623). Though he was a Dominican friar and a theologian, Campanella was too original a thinker for Catholic orthodoxy, and he spent most of his adult life in prison for heresy. His utopian realm is an ideal city, built of seven concentric circular walls, ruled by a benign philosopher-king called Hoh, who is also chief priest. As in More's Utopia, property is held in common, although Campanella's vision is more technologically inventive: land-carts driven by great sails and self-propelling ships and flying machines are mentioned in passing; and elements of science and culture are written on the walls for public edification. Indeed, their utopian harmony is so advanced than none amongst the population suffers from catarrh or farting.

Mark Riley calls *Civitas Solis* 'the blueprint for an appalling totalitarian state', 'a bizarre combination of astrology, technology and futurology' and (what's worse) 'written in bad Latin' [Riley, 188]. This is perhaps unfair, for the novel is much more interested in metaphorising individuality than in predicting future autocracy. Like More's, Campanella's Latin title contains a pun (it is more obvious in the original Italian title); his city is both *Solis*, of the sun, and *Solus*, of the self; its circular embedded design makes it the perfect figure to trope the emerging bourgeois subject, centred on a reason-ego and in perfect harmony with itself. And there is something else here too: the tension between older models of socio-political stasis and order and newer ones of mobility and freedom, which in turn feeds through into, small c, conservative visions of heroic fantasy on the one hand, and more radical, *voyage extraordinaire* visions of science fiction on the other.

The circle is also inclusive, and that in turn speaks to the mode of systematisation in which utopia invests. This is a formal matter as much as anything. Throughout this century the most popular form of utopian text was the colloquy. Most often a traveller has returned from the ideal land, and engages in conversation with one or more interlocutors about his discoveries. In the words of Timothy Hampton, 'whereas epic favours an ideology of conquest, the colloquy promotes the inclusiveness of the Christian community, and utopian

discourse provides a theology that is also a politics' [Hampton, 74]. He might have added, the theological politics of this space, by opening itself to the novum of social alterity, was profoundly corrosive of the older orthodox pieties.

SYSTEMATISATION AND THE MATERIAL: 16TH-CENTURY SCIENCE

By licensing imaginative engagement with alterity, the utopian imagination is connected both with the social and religious contexts of the Reformation and with the new logics of science. It was by reacting against the inertial assumptions of Aristotelian thought that a new science came into being, and it was this new science that in turn determined the new sort of fiction predicated upon it. That looks almost tautological, put like that, but it unpacks into a surprising set of particularities. What I am attempting here is a sketch of the social and cultural ground out of which science fiction was to emerge in the 17th century, confected from the speculative possibilities of new science, new *techné* and the systematic aesthetic logic of utopian writing. Utopian writing and political praxis and the emerging mode of SF connect closely with humanism. Humanism, indeed, provides one of the answers to the question posed in the first paragraph of this chapter—if not explaining why SF fell into cultural desuetude for a millennium and a half, then at least explaining one of the reasons why it 'came back' when it did. For whatever else it was (and it remains one of the most complex and contested descriptors in cultural history) humanism was an attempt to reconnect with the classical past.

The term "humanism" is a 19th-century reading of the attitude reflected by men who, as a part of the Italian Renaissance, seemed to centre their thought upon the dignity of man and his privileged position in the world. But in reality the early humanists did not have one single coherent philosophy or attitude towards life. What gave them a semblance of unity was their enthusiasm for the rediscovery of the Latin and Greek classics. [Koenigsberger *et al.*, 145]

The sort of fantastical tale discussed in the second chapter represented only a small part of this broader 'humanist' project; but it was a part for all that, and one—as, for example, with Erasmus's engagement with Lucian—that had direct consequences for European literary culture. And whilst it was always interwoven with Reformation religious discourse, David Norbrook has argued that humanism increasingly pulled away from Protestantism, and indeed from organised religion as a whole, steering towards the establishment of what he calls a more 'secular and individualistic world-view' that anticipates the developments of the Enlightenment [Norbrook, 23]. In this sense, and despite the hostility of many humanists to the newer sciences, it paves the way for science fiction. There is indeed a sense in which we can describe SF as a humanism.

At the same time, 16th-century science aimed for the first time at a logic of materialist, rather than Aquinian spiritual, systematisation. A key figure here is French Protestant Pierre de la Ramée (1515–1572), better known by his

Latin name Petrus Ramus, an immensely influential humanist and systematiser. He is as often reviled as celebrated today. Walter Ong characterised his ‘methodizing’ human knowledge as ‘the amateurish works of a desperate man who is not a thinker but merely an erudite pedagogue’ [Ong, 80; for a more sympathetic account of Ramism, see Wilson and Reid.] Nonetheless, Ramism, the movement inspired by his teaching, swept Europe, and the attempt to structure knowledge systematically represents a vital component in the coming aesthetic logic of SF. Ong also connects Ramism with a much more lasting contribution to science—Copernicus. The Ramist stress upon method and systematisation, combined with what Ong calls ‘the visualist tide running strong’ (something to which we shall have cause to return) propelled ‘an important shift ... in the whole notion of space, signalized if not caused by the publication of Copernicus’s *De revolutionibus*.’

Nikolaj Kopernik (usually referred to by his Latinised name, Nicolaus Copernicus) was a 16th-century churchman and astronomer from Ermland, in what is now Poland. His name is particularly associated with a revolution in cosmology that was, by undoing the scientific authority of the Catholic Church, to have the most profound effect on the development of thought and necessarily therefore on science fiction. Those alive in the medieval world who cared about such things believed in a model of the cosmos usually called Ptolemaic: a solar system centred on a stationary Earth, such that the Sun, Moon, five planets and a sphere of fixed stars revolve diurnally about our world. The medieval world believed this model to be consonant with the (few) accounts of the cosmos found in the Bible, and augmented Ptolemaeus’s scientific text with the more ‘spiritualised’ geocentric model elaborated in Cicero’s *Somnium Scipionis* (51 BC). Kopernik’s own observations suggested to him that the Earth and other planets actually rotated about the Sun. A devout Catholic, he was cautious about publishing his revolutionary new theories under his own name. Accordingly, a young follower named Georg Joachim von Lauchen, known by his Latin moniker Rheticus, issued his first-hand account of Kopernik’s theories as *De revolutionibus orbium coelestium* [*On the revolution of the celestial orbs*] in 1543. Rheticus’ intervention not only brought Copernican ideas to a wider audience, it moved his theories out of Catholic and into a humanist, and indeed Ramist, context—Dennis Danielson, for one, makes a convincing case for the intellectual connections between Ramus, Rheticus and Copernicus [Danielson 153–70]. It is true that Kopernik’s theories spread only slowly, hampered by the hostility of the church, the small print run of the book, and the inertia of the scholastic traditions of the learned. Nevertheless, by the end of the 16th century most scholars, whether they accepted or rejected it, knew about the theory.¹ The Copernican re-evaluation is a crucial event in the development (or re-development) of science fiction. Before Kopernik’s new map of the heavens any fantastic voyage beyond the Earth necessarily took place in a realm understood to be divine rather than material, and therefore within a theological context. After Kopernik the cosmos not only expands tremendously in scale and scope, it becomes necessarily materialised. A cleavage opens

up between the cosmological accounts of science and religion. To the tautology that modern science fiction is only possible once modern science has been established we can add the more precise observation, modern science fiction is *a fortiori* post-Copernican.

By the end of the 16th century we have not yet arrived at a place in which we can identify science fiction in any meaningful sense. But in a European sense the groundwork, out of which science fiction was to spring in the 17th century, had all been laid: the Catholic and (in a strong sense) magical model of the cosmos had been challenged; Ramism, however ramshackle in its specifics, had created an intellectual climate hospitable to methodisation and materialist systematisation; Copernicus (percolating only slowly though the intellectual medium of the century) had completely redefined man's place in the cosmos, and by doing so had expanded the spatial scale of the cosmos prodigiously—a similar temporal expansion would follow, although not for more than a hundred years. And with the writing of a new kind of utopian novel, predicated upon the systematic elaboration of social alterity, provided one of the two key prototypes for the science fiction novels that were to follow.

The other key prototype was also a function of the new technological and imperial logics. The 16th century was the start of what we can call, with Eurocentric bias, the age of exploration. New nautical technologies and a spirit, informed less by geographical curiosity than greed for wealth and conquest inspired Europeans to cross the large oceans. The discovery of 'new



Fig. 3.1 Alien forms of life: an illustration from book 6 of Münster's *Cosmographia* (1544)

worlds', especially in the continents of North and South America, resulted in the writing of a great many travellers' tales. These, a rich combination of factual account and speculation, were the originary *voyages extraordinaires*, and the textual logics of such works directly informed their fantastical descendants.

Many of the most influential of these books were by individuals who themselves did not travel. Lutheran convert Sebastian Münster published a synthetic account of faraway lands in his *Cosmographia* (1544), places to which he himself had never ventured. It proved one of the century's most popular books, translated into every major European language and reprinted dozens of times, in part because its woodcuts (by notable German artists, including Holbein) rendered distant lands in a structurally estranged and compelling manner. The persistent science fictional trope that alien life would take the form of a more-or-less monstrously modified humanoid shape takes its cue from this (Fig. 3.1).

English priest Richard Hakluyt was also not an explorer; apart from one single trip to France he never left his homeland. But his accounts of the explorations of others were widely read and very influential, especially his *Divers Voyages Touching the Discoverie of America* (1582) and *The Principall Navigations, Voiages, Traffiques and Discoveries of the English Nation* (1589–1600). Shakespeare is only the most famous of the many writers who took inspiration from these books. Nor did travel need to take the imagination very far from home to step into the extraordinary. Italian Antonio Blado's *Monstrum in Oceano* (1537) reports the capture of an improbable looking 'sea pig' in the North Sea. Blado's book is expressly theological allegory, interpreting all the peculiar elements of his fantastical creature in terms of the Bible and concluding: 'tu ut pius es, quid omnia hæc simul iuncta portendant, pro pietate tua, ac religione interpretabere [as you are pious, I pray you interpret according



Fig. 3.2 Detail from Olaus Magnus' *Carta Marina* (Marine Map, 1539) copying across the 'sea-pig' from Blado's religious allegory. The Latin legend says: 'this monster was observed in 1537'

to your religious piety what all this portends]' [Blado, 4]. Yet Blado's account, and especially his vivid illustration of this creature, proved so popular that it reappeared in other books and even in maps, re-reported without its theological gloss as an actual alien creature (Fig. 3.2).

This speaks less to the credulity of people in the 16th century than to their appetite for the strange and the monstrous, and more specifically their preference for strange and monstrous sublimity conceivable within the logic of *possibility* rather than myth or ancient fable. Seventeenth century literature was about to step up and supply that appetite.

There is one other point worth stressing here: that through the 16th century and into the 17th, all of this was a minority interest. Very few people could read, and the overwhelming majority of those who could consumed cultural production within the traditionally oriented parameters of the church: sermonic and patristic writing, religious allegory and orthodoxy. The significance of the new coming mode was, appropriately enough, in its futurity. Something new was coming into the cultural world.

NOTE

1. C. S. Lewis points out that Kopernik's theory was not verified until the work of Kepler and Galileo in the early 17th century, and that 'general acceptance [came] later still. Humanism, dominant in mid-sixteenth century England, tended to be on the whole indifferent, if not hostile, to science'. He goes on to argue that, whilst the Copernican revolution emptied the world of 'her occult sympathies', the result was 'dualism rather than materialism'. The present study does not share these conclusions.

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Seventeenth-Century SF

Three individuals who never met stand, talismanically, at the gates of the new mode of writing we call science fiction: Copernicus, Bruno and Kepler. Indeed, the thesis of this present study might be articulated in shorthand form by the statement that modern science fiction ‘begins’ in the year 1600. This was a time by which Copernicus’s ideas had, largely, percolated through into European culture; it was the year in which the Catholic Inquisition burned to death Giordano Bruno the Nolan for arguing in favour of the notion that the universe was infinite and contained innumerable worlds; and the year (probably) in which Kepler wrote *Somnium*, the first unambiguously science fiction novel. The reader can be trusted not to take such a pinning to the board of specific years too literally.

In his discussion of this period (which is not concerned with SF) Howard Margolis has argued that 1600 is the key turning point in the development of modern science. By way of evidence he itemises nine ‘fundamental scientific discoveries’ made around the year 1600, including the laws of planetary motion, the magnetism of the Earth, and the distinction between magnetism and electricity. According to Margolis, if one compares the notable scientific discoveries of the previous 14 centuries one discovers ‘nothing at all’. The title of Margolis’ book summarises his view of the whole discourse of modern science, *It Started with Copernicus*.

It is to state the obvious to note that modern SF would be impossible without Copernicus. Nevertheless I want to suggest that Bruno is the more appropriate symbolic starting point for a history of science fiction. Twentieth-century physicist Alfred North Whitehead acknowledged the crucial importance of Copernicus, but identified ‘the origins of modern science’ with Bruno: ‘his death in the year 1600 ushered in the first century of modern science’ even though ‘the cause for which he suffered was not that of science, but that of free imaginative speculation’ [in Tauber, 53]. ‘Free imaginative speculation’ is the same thing I refer to in this history as science fiction.

Bruno was a Neapolitan speculative thinker who, inspired in part by the Copernican model of the cosmos, taught the new knowledge across Europe, particularly in the Protestant countries of the north. Returning to Venice in 1591 he was arrested by the inquisition, interrogated and finally killed in 1600. It is true to say that magic and hermeticism played as important a part in Bruno's philosophy as science (as we understand it today), but nevertheless his imaginative speculations concerning the nature of the universe are in essence SF. His 'On the Infinite Universe and Worlds' (1584) imagines the cosmos as infinite, containing an infinite plurality of worlds, each of which can be likened to an organism, all of which contribute to the totality of the cosmos. Such a vision was an imaginative expansion and inhabitation of the newly opened-up Copernican cosmos, and since it excluded God (Bruno believed the total Cosmos-Soul of the universe was a different entity to God) and challenged the teaching of the church it is perhaps not surprising that Bruno was executed as a heretic.

Throughout the 16th and 17th centuries Catholic persecution of the Copernican version of the cosmos was energetic and prolonged. In 1616 the Italian astronomer Galileo Galilei was forbidden by the Church from endorsing Copernicus's cosmos. Galileo nevertheless published a scientific work arguing in Copernicus's favour in 1632, and the inquisition condemned him in 1633. Galileo recanted his 'heresy', denying that the Earth moved around the Sun and affirming that the Earth was the stationary centre of the cosmos. Bruno was similarly anathema. As late as the mid-18th century, the Jesuit philosopher Joseph Falck was denying Bruno's plurality of worlds in his *Mundus aspectabilis philosophice consideratus* (*The world philosophically considered* 1743), answering his own question '*Quid, quotuplex and qualis sit mundus?* [What, how many and of what nature is the world?]', with a firm '*igitur mundus est unum quoddam totum* [the world in its totality is singular]'. His reasoning was common within Catholic circles at the time: though God certainly has the power to create more worlds ('*fundatur in Dei potentia quae potest producere non tot quin plura*') he has chosen not to do so, and '*omnium simul relate ad Deum* [the singularity of the world reflects the singularity of God]'.

In its early years Protestantism was also alarmed by the new thinking. As early as 1549 the Protestant thinker Philip Melanchthon challenged what he saw as the dangerous implications of Copernicus's discovery. Grant McColley summarises:

The most vital argument to Melanchthon is his last, wherein he states that there is but one Son of God, our Lord Jesus Christ, who was sent into this world, was dead, and was resurrected. He did not appear in other worlds, nor was He dead and resurrected there. Nor is it to be thought that if there are many worlds, something not to be imagined, that Christ was often dead and resurrected. Nor should it be considered that in any other world, without the sacrifice of the Son of Man, men could be brought to eternal life. As Melanchthon reasons, to accept a plurality of worlds is to deny or to make a travesty of the Atonement. [McColley, 412–13]

Nonetheless, the Protestant countries of Europe (Britain, Holland, parts of Germany) were not as repressive in their hostility towards the scientific and—importantly for our purposes here—imaginative exploration of the new cosmology.

One striking feature of the science fiction written during this century is the anxious insistence with which it continually interrogates the question of the primacy of Christ's sacrifice. Take, for example, the work of Francis Godwin, Anglican Bishop of Llandaff. His posthumously published space-journey adventure *The Man in the Moone: or, A Discourse of a Voyage Thither by Domingo Gonsales, the Speedy Messenger* (1638) illustrates the interpenetration of religious and scientific discourses. The first action of Godwin's protagonist, on arriving on the Moon and seeing its inhabitants, is to call out 'Jesus Maria'. This results in the lunarians '[falling] all down upon their knees, at which I not a little rejoiced' [Godwin, *Man in the Moone*, 96]. This rejoicing reflects the confirmation of the uniqueness of Christ's incarnation. In similar vein, Wilkins's *Discovery of a World in the Moone* (1638), for instance, postulates lunar inhabitants, but goes on to worry whether such beings 'are the seed of Adam, whether they are in a blessed estate, or else what means there may be for their salvation'. Wilkins quotes Thomas Campanella to the effect that lunarians must be 'liable to the same misery [of original sin] with us, out of which, perhaps, they were delivered by the same means as we, the death of Christ' [Wilkins, pp.186–92]. When the protagonist of Cyrano's comical voyage to the Moon, *L'Autre monde ou les états et empires de la Lune* (1657), first arrives on the other world his first encounter is with the biblical figure of Elijah, who tells him: '*cette terre-ci est la lune que vous voyez de votre globe; et ce lieu-ci où vous marchez est le paradis, mais c'est le paradis terrestre*' [This land is indeed the same Moon that you can see from your own globe, and this place in which you are walking is Paradise, but it is the Earthly Paradise] [Cyrano, 44]. We discover that the Garden of Eden was removed from the Earth to the Moon by God after the expulsion of Adam and Eve, 'reflecting a popular belief that paradise must have been located on the Moon because the floodwaters [of Noah's flood] would then not have been able to reach the just inhabiting it' [Harth, 13]. Wilkins makes a similar case in *Discovery of a World in the Moone*, describing the Moon as a 'celestiall Earth, answerable, as I conceive, to the paradise of the Schoolemen ... this place was not overflowed by the flood, since there were no sinners there which might draw the curse upon it' [Wilkins, 203–5]. Cyrano becomes jocular with the pious-minded Elijah, interjecting his own bawdy interpretations of the biblical stories the prophet is retelling (for instance, suggesting that the serpent who tempted Eve was a form of penis). Elijah expels him from the '*le paradis terrestre*' in disgust, and our hero goes on to stranger adventures amongst the other inhabitants of the Moon. These more surreal elements are the most famous parts of Cyrano's lunar voyage. Indeed, one 20th-century editor, Remy de Gourmont, went so far as to excise the whole of the lengthy Elijah episode from his edition of *Les états et empires de la Lune*, calling it '*une longue digression incompréhensible*', expressing '*une théologie bizarre*' [De Gourmont, 154–55n.]. But to suggest so is to misun-

derstand the cultural context out of which the book was produced. Cyrano's book is indeed comic, grotesque, a burlesque rather than a serious theological intervention. Nevertheless, the 'bizarre theology' of the section, even in so self-consciously ludicrous a book as this, suggests the ways in which the buried anxieties of early SF are religious in form. Jean de la Bruyère may have insisted that '*la lune est habitée*' in 1688, but he immediately added '*si nous sommes convaincus l'un et l'autre que des hommes habitant la lune, examinons alors s'ils sont chrétiens*' [if we're all convinced that men live in the Moon, let us consider whether they are Christians]' La Bruyère, 474].

As the century proceeded, more detailed observation put paid to the idea that the Moon was in any sense Earth-like, thereby reducing the likelihood of human-like inhabitants. Erhard Weigel's *Geoscopia Selenitarum* (1654) mapped the Moon in great detail and found no evidence of inhabitation. In this respect Kepler's *Somnium* was decades ahead of its time. For example, Johann Andreas Schmidt and J C Layritz's *Selenitas e luna proscriptos divini numinis gratia* (*Selenites, or the Moon Proscribed by Divine Grace* 1679) argues at length for the radical difference between lunar and earthly conditions. If any beings lived in such a world, they must appear more like monsters than men ('*ut monstro quam homini similiores viderentur*'). One argument Schmidt and Layritz advance against the existence of Selenites is the impossibility of growing vines on the Moon; since this would deprive Selenites of the ability to make wine, it would deny them the necessary communion at Holy Sacrament, and *therefore* creatures of the status of human beings could not dwell in that place.¹

Moreover, this anxiety—that the new cosmology undermines traditional Christian revelation—has never entirely left SF. In various ways, as this study will go on to demonstrate, the tension between humanist or Protestant perspectives (which veer towards materialism and the unmediated individual exploration of the cosmos) and sacramental or Catholic perspectives (which stress a spiritual, transcendental, divinely-mediated and fundamentally magical universe) intimately shapes the development of the genre.

THE COPERNICAN COSMOS AND THE SENSE OF WONDER

The new cosmology, and in particular the dangerous notion of an infinity of worlds associated with a number of late 16th- and 17th-century thinkers, did two things absolutely crucial to the development of science fiction as we understand the form. First, it created an imaginative space in which humanity might encounter radically different beings—aliens, the material embodiments of the alterity that drives the mode. Dante traverses the entire cosmos and finds only other human beings, or angels who very much resemble human beings, because the whole cosmos has been (he believed) created by God and populated with creatures made in His image. But once the Ptolemaic egg had been cracked open, an infinity of possibilities presented themselves to the imaginative explorer, and so radical alterity can become a topic of speculation.

The second thing that the new cosmology reveals is the much grander scale of the universe, which in turn permits, and indeed requires, a corresponding aesthetic of the sublime. This attachment to sublimity—or, to invoke the common phrase from 20th-century SF, the sense of wonder—provoked by gigantic scale, enormous devices or very long stretches of time, may not define the whole genre of SF, but remains integral to many fans' appreciation of the form. Arguably, the sublime is core to interplanetary or interstellar SF, and central to most aspects of the genre. More than this, such sublimity depends fundamentally upon an infinite, Copernican cosmos. The Englishman Thomas Digges printed an account of 'the infinity of the universe' in 1576 (cautiously hiding his work by tucking it in as an appendix to an edition of a much less inflammatory book by his father called *A Prognostication Everlasting*). William Empson notes the 'appalling splendour' of Digges' vision, and quotes him at length:

Thys baull of the Earth wherein we move, to the common sorte seemeth greate, and yet in respect of the Moones Orbe is very small, but compared with *Orbis magnus* [the Great Orb] wherein it is carried, it scarcely retayneth any sensible proportion, so merveilously is that Orbe of Annuall motion greater than this little darcke starre wherein we live. But that Orbus magnus beinge ... but as a poynt in respect of the immensity of that immouueable heaven, we may easily consider what little portion of God's frame, our Elementare corruptible worlde is, but never sufficiently be able to admire the immensity of the Rest. ['Thomas Digges his infinite universe', Empson, 1:219]

Artists of the sublime, or the sense of wonder, dilate upon the insignificance of the 'little dark star' on which we live when compared to the immensity of the universe; Douglas Adams's 20th-century conception of the 'total perspective vortex', a machine that compels individual minds to understand exactly how small they are in comparison to everything, thereby destroying them, is a comic version of this same conceit—comic because the reality underpinning this notion is indeed so unsettling, so appalling, that, aptly enough, we prefer not to contemplate it directly.

It is undeniable, of course, that this sense of wonder is connected to discursive traditions of religious awe and a sense of the Sublime, conceived of as divine even as it expresses the new cosmos that science opens in space and time. A hundred years after Digges, Thomas Burnet, a doctor of divinity and one-time candidate for Archbishopric of Canterbury, published *Telluris Theoria Sacra* (*Sacred Theory of the Earth* 1681), translating it into English as *The Theory of the Earth* in 1684. Popular well into the 18th century this book elaborates a theologico-geology based loosely on Genesis. Burnet believed that God had created the world as a perfectly smooth spheroid; all the depressions and elevations, trenches and mountains had been carved out by Adam's sin and the subsequent deluge. What makes the work more than just one more example of batty biblical exegesis is the sheer verve of Burnet's imaginative entry into the fantastic narrative he is advocating. There is a palpable sense of wonder grandeur in his vivid descriptions of global catastrophe:

The pressure of a great mass of water falling into the abyss ... would carry it up to a great height in the air, and to the top of any thing that lay in its way, any eminency, high fragment, or new mountain. And then rolling back again, it would sweep down with whatsoever it rush'd upon, woods, buildings, living creatures, and carry them all headlong into the great gulph. Sometimes a mass of water would be quite struck off and separate from the rest, and tossed through the air like a flying river [Sutherland, 390]

What is worth stressing is the way in which the material correlative for this sublimity, the actual universe in which we exist, which is in turn amenable to physical exploration, simply does not exist for pre-17th-century writers and artists (A J Meadows points out that Burnet was attacked by his contemporaries 'still unaccustomed, or in some cases actively opposed, to any attempt to explain the miraculous in terms of the natural'[p. 123]). But this is precisely the conceptual arena in which modern SF germinates.

17TH-CENTURY SCIENCE FICTIONAL PROSE ROMANCES

A fuller understanding of the rebirth of SF needs to be set in the literary context in which it occurred. The typical 16th- and 17th-century prose fiction (using the term typical here with caution) was in the mode of what more traditional critics tend to call classic romance. A great many books were published that told stories of courtly lovers, knights and noblemen adventuring, questing and falling in love. It is a misapprehension to describe such texts as realist, or even realistic, although many of them did bear deictic or satirical relationships to the world in which their readers lived. But most of the conventions that appear over and over again in these tales were borrowed wholesale from the Ancient Greek novel (and many ancient novels were translated into English for the first time during this period). The plot devices include children separated from their families after being kidnapped by pirates, growing up and returning to their native lands ignorant of their parentage; one lover apparently dying such that the other lover falls into despair, only for this apparent death to be revealed as a deliberate sham or unlikely mistake later in the story.

Some sense of the relative popularity of science fictional tales in England during this period is indicated by Paul Salzman's 1985 study *English Prose Fiction 1558-1700: a Critical History*. Salzman 'lists all known extant works of fiction published' between his those dates, 582 titles in all—105 Elizabethan fictions and 477 17th-century works. Salzman breaks them down into various genres and sub-genres and 21 of these titles are, arguably, science-fiction (all published in the 17th century; Salzman lists most of them under 'Imaginary Voyage/Utopia/Satire'). This figure compares with 24 picaresque novels, 26 popular chivalric romance and 15 oriental tales. In other words, science fiction was as popular a genre as most others during this period, although the large variety of different genres and modes of novelistic writing at the time means

that only a small proportion of all novels produced were SF.² The genre would grow enormously in size and influence over the following two centuries.

This flourishing of the novel in the 17th century is, of course, something also shaped by the continuing religious reformation. As Margaret Anne Doody somewhat colloquially puts it: 'Protestantism set the cat among the pigeons in the matter of reading' [Doody, 233]. If this is true of reading more generally conceived, it is true *a fortiori* of the speculative cosmological and epistemological fictions of SF. To put it briefly, SF is that genre that mediates the discourses of science (or fact) and magic (or, subsequently, imagination, fiction); and it comes into generic being at precisely the historical moment when competing cosmic discourses were in the process of separating themselves into rationalist Protestant and ritualist-magical Catholic religious idioms. I should add that by saying this I am following Norman Davies understanding on the Reformation (which some other historians would challenge) as a deliberate attempt to 'take the magic out of religion'; and that although 'the Protestant onslaught on magic enjoyed only partial success' nevertheless 'Protestant Christianity was supposedly 'magic-free' [Davies, 405]. By attacking magic Protestantism was challenging beliefs very deeply rooted in human culture, and in many human psyches, and a great deal of anxiety, cultural and personal; and SF in its broadest sense can be understood as a textual strategy to mediate this dialectic cleavage. SF texts from the early 17th century mark this disjunction most clearly, and none more evidently than Kepler's *Somnium* (written c.1600, published 1634), which has a good claim to be the first work of modern SF, and which deserves to be treated in greater detail.

KEPLER'S *SOMNIUM*

The *Somnium*, although little read today, is a key text in the development of science fiction. It articulates precisely the dialectic between Protestant rational science and Catholic magical/demonic imaginative expansiveness that shapes the emerging genre.

Johannes Kepler was a Protestant German astronomer who established three important laws of planetary motion, still named after him. But in addition to his scientific studies he wrote one work of science fiction, *Somnium, sive Astronomia Lunar* [*A Dream, or Lunar Astronomy*]. The exact chronology of composition is uncertain; he may have written an initial draft in the 1590s, revising it over subsequent decades without publishing it. The book was in press when Kepler died in 1630, although it was not until 1634 that a complete edition was finally issued, by one of his sons.

Somnium is a short work. A brief narrative of a journey to the Moon and the conditions that obtain there is followed by a series of detailed scientific and explanatory notes. The book utilises a number of embedded narratives. The outer frame is related by an unnamed narrator, who tells us that one night, after having observed the stars and the Moon, he fell asleep and dreamed a certain dream. This dream is that he is reading another book: the life story of Duracotus, a man born in Iceland to a witch called Fiolxhilda.

After spending time in Europe working with the famous Danish astronomer Tycho Brahe (1546–1601; in his youth Kepler had been Brahe’s assistant), Duracotus returns to Iceland to learn from his mother about certain demons (she calls them ‘*sapientissimi spiritus* [most wise spirits]’) who travel between the Earth and Levania (the Moon). On occasion these demons even carry human beings between the two worlds. She calls down one such spirit, and the two humans cover their heads with a sheet, as the magical pact requires, whilst this ‘daemon ex Levania’ talks about the true nature of the Moon. Almost all the remainder of this first portion of *Somnium* is given over to this demonic speech.

This second embedded narrative is more expository than the first. The demon reveals how his kind travel to the Moon during a lunar or solar eclipse, when the cone of shadow touches both Earth and Moon and serves as their path. The demons can carry human beings with them, we learn, although the journey is ‘most hard’ (‘*durissima*’) for mortals, since the space between the worlds is characterised by extreme cold and great difficulty of breathing. Demons remedy this first problem by creating heat from within their own bodies, and the second by pressing ‘humid sponges’ (‘*spongiis humectis*’) to their passengers’ mouths. There follows an account of the natural history of the Moon. From a Moon-based point of view, the dominant object in the sky is the Earth, or Volva, as the Levanians call it. The Moon’s month-long revolution on its own axis and its monthly orbit of the Earth means, of course, that one lunar hemisphere is always facing the Earth and one facing away. The former hemisphere of Levania is called by its inhabitants Subvolva, or Under-Earth, and the latter Privolva or deprived-of-Earth. Kepler correctly intuits that the consequent changes of lunar temperature are extreme, from the great cold of the fortnight-long Levanian night to the great heat of the fortnight-long day—so hot is the lunar day, indeed, that the inhabitants of that world retire into deep caves and caverns to escape it. In Privolva, the lack of the Earth makes a great difference, and life is described in nightmarish terms:

They live an unfixed life, without permanent habitation. They roam in great crowds over the whole globe during one of their days, some on legs which are longer than are our camels’, others flying through the air, others still in boats follow the fleeing water. [Kepler, *Somnium*, 46]

Most of the Privolvans are divers (*urinatores*), who can seek relief at the bottom of the waters. Their skin is thick and porous, and under the fierce sunlight may become scorched on its outermost layers; this layer is shed like a husk when evening comes. Mostly, their forms are snake-like (‘*natura uiperina in uniuersum praeualet*’). Some of these creatures loll in the midday sun; others stop breathing in the heat and only return to life in the evening. Life in the Subvolvan hemisphere is less frantic. Some relief is accorded by the presence

of Volva itself, and this portion of the world is mostly covered by rainclouds. At this point the dreamer awakes, his head under a cloth (like Duractos's)—in reality, his bedclothes—and with a rainstorm (like the demon's Levanian description) rattling against the window. *Somnium* ends on this abrupt note. This fantastic, grotesque little romance is thrown into sharper relief by the substantial number of notes that follow. An appendix contains 223 footnotes, some of them very long, followed by a Selenographical Appendix, which in turn is followed by 34 numbered and 31 lettered notes. Occasionally these notes explain Kepler's inspiration for specific details in the *Somnium*, but the majority of them contain detailed data on the Moon, on astronomy, and on general scientific matters.

One of the main problems facing the interpreter of *Somnium* is to reconcile these two idioms: the one fanciful and grotesque, the other soberly scientific. But in context it is easier to see that this dynamic between the magical (witchcraft and demons and their attendant visions) and the scientific precisely embodies the problematic out of which SF develops. The effectiveness of *Somnium* derives from its interplay of fantastical-grotesque imaginative play and solid scientific grounding. This linking of apparent opposites, this (to use the rhetorical term) oxymoron is precisely the aesthetic principle behind *Somnium*. Kepler worked this principle into his text at several levels, not least on the formal level. His note 206 calculates that the Moon is one quarter the size of the Earth ('*paulo maior diameter lunaris parte Quarta terrestris*'). This dimension is then formally embodied in the text itself, the first part of the *Somnium* being 3800 words and the notes over 15,000 words (which is to say, the text of *Somnium* is a quarter the size of the notes to *Somnium*). In other words, the larger, weightier scientific portion of the whole functions as the grounded, Earth-like element; and the smaller, more fanciful portion functions as a flightier, more lunatic transport.

The witch Fiolxhilda, in summoning the demon from Levania, was an of-the-moment touch for the early 1600s. Kepler himself lived close to the heart, geographically and chronologically, of the infamous European witch craze, and at one point had to defend his own mother from the charge of being a witch. Olwen Hufton records that 'between 1560 and 1660 ... about 100,000 witches were condemned, of whom about 30,000 were from Germany with a particular emphasis on small states with a troubled religious history' [Hufton, 340]. Although we often think of this fascination with demonic magic that characterised this period as anti-scientific and irrationalist, this was not the case. Stuart Clark has demonstrated at length that, instead of being opposed discourses, magic and science were viewed as complementary, and even as aspects of the same truth by most thinkers in the period. Questions of the capabilities of demons and the power of witchcraft, 'were essentially scientific in character, and ... here demonology became thoroughly embroiled with some of the pressing concerns of late Renaissance natural philosophy' [Clark, 315]. Kepler himself, we recall, worked as both astronomer and astrologer, and although

he regarded this latter occult art as astronomy's sometimes stupid daughter [Thorndike, 17], both had their part in understanding the heavens.

Writers on demonological matters all agreed that it was possible for demons physically to transport people from place to place, a practice known as transvecting. The 15th-century thinker Marsilio Ficino wrote at some length on demonic abilities in his *De vita coelitus comparanda* (1489), taking the term daemon to mean both guardian angel/good demon and devilish or bad demon. Demons, he argued 'are primarily planetary, though there are supercelestial and elemental ones. They have souls and aetheric or aerial bodies, according to their status (the supercelestial ones have no bodies) ... there are bad demons, of a low status and with aerial bodies who trouble men's spirits and imagination' [Walker, 47]. Gerolamo Cardano's mid-16th century *De rerum varietate* 'restricted demonic activity to the aerial regions' [Clark, 237]. The higher planets (in the Ptolemaic model) are pure, unchanging and partake of the divine, but the Moon and the sub-lunary areas below it are changeable and corruptible, and it is in this arena that the bad demons operate. Kepler seems to have restricted his demons to the aerial regions, and to have limited their intercourse with humanity (perhaps following Cardano, who 'spoke rather disparagingly of spirits having few significant dealings with men and women' [Clark, 237]). In general, his perspective precisely negotiates the space between the magical and strictly scientific, separating out a properly scientific fiction from a broader, theological-magical fantasy.

INTERPLANETARY TRAVEL

The relationship between the SF narrative of interplanetary travel and the chivalric-romance narrative of exotic terrestrial travel is a close one. Both Dante, in his *Paradiso* (c.1320) and Ludovico Ariosto in his *Orlando Furioso* (1532), imagined characters travelling to the Moon. Ariosto is sometimes called the father of science fiction for this reason, although Dante rarely is. In both cases the description is most inexact. For both Dante and Ariosto the heavens are not material in the manner of the sub-lunary world. In their shared Ptolemaic view of the solar system, the heavens are changeless, perfect, divine; a supernatural arena. A comparison might be made with Giambattista Marino, once 'the leading poet of Italy and the outstanding figure on the European literary scene' [Mirollo, p. vii] (although now largely forgotten), whose baroque, 20-canto epic *L'Adone* (1622) approaches science fiction. This retelling of the love between the divine Venus and the handsome mortal Adonis includes an interplanetary interlude; in cantos 10 and 11 Adonis is carried into the heavens to travel through the solar system, flying past the Moon to visit Mercury and Venus. In one sense this journey to the planets is fantastical and mythological rather than science-fictional; carried up by a god, Marino's Adonis moves from the Earth to the Moon, to Mercury and to Venus as if moving up through the Ptolemaic spheres. But in an important sense this poem moves beyond the pre-Copernican fancies of Ariosto (to whom Marino's poem is heavily indebted).

So, for example, one of the heroes of the epic is Galileo, whose newly invented telescope is praised as revealing the truth of the heavens; '[te] Galileo ... potrai senza che vel nulla ne chiuda,/Novello Endimion, mirarla ignuda [you Galileo will be able to gaze at the nakedness of Endymion (i.e. the Moon) with no veil intervening]' [Marino, *Adone*, 10:43]. As he approaches the Moon, Adonis asks Mercury whether the heavens are composed of the same matter as the Earth, or whether their temper is radically otherwise, 'incorrottibili [incorruptible]' as he has heard. At a similar moment in Dante's *Paradiso* this same question is asked, and Dante replies with the theologically orthodox explanation that heaven is composed of an incorruptible and perfect material, purer and fundamentally different from the corruptible matter of the Earth. But Marino's poem reverses Dante's explanation with a materialist rather than a spiritualist account of space:

La material del ciel, seben sublima
 sopra l'altre il suo grado in eminenza,
 non pero dala vostra altra si stima:
 nulla tra gl'individui ha differenza
 [The material of heaven, though sublimely/sovereign over others in its degree in
 its eminence/is nevertheless not other than yours (*i.e. not different from Earth*)/
 it is not qualitatively different]. [Marino, *Adone*, 10:18]

Adonis's explorations of the Moon, Mercury and Venus take place in a material rather than a spiritual dimension. It turns out that the Moon, instead of being a religious stepping stone on a themed symbolic journey towards God, is a world just like Earth, with 'altri mari, altri fiumi ed altri fonti/citta, regni, province e piani e monti [other seas, other rivers, other springs/cities, kingdoms, provinces, and planes and mountains]' (Marino, *Adone*, 10:40; the echo of Ariosto in fact emphasises the radical difference between the two poems). It is this stress on the *material actuality* of the Moon as another inhabited world that makes the allegorical journey of Marino's Adonis science fiction rather than merely mythological fancy. It may have been its Galileo-like intellectual daring that led to the poem being censored by the Catholic Church (it was placed on the *Index Librorum Prohibitorum* in 1624).

Marino illustrates one of the two main strategies for moving protagonists extraterrestrially. Marjorie Hope Nicolson's 1948 study *Voyages to the Moon* contrasts supernatural voyages on the one hand, with voyages that, to one degree of plausibility or another, utilise material forms. The former are rarer; Nicolson describes only Kepler's *Somnium* and an English derivation of that work, *Conclave Ignatii* [*The Conclave of Ignatius*] (1611), by metaphysical poet John Donne (she might also, but does not, mention Marino). Nicolson comments that 'the journey of Milton's Satan' flying through the cosmos in Book 2 of *Paradise Lost* (1667) 'is the last truly "supernatural" cosmic voyage written in England' [Nicolson, 56].

But of the latter, material methodology, Nicolson adduces a great many examples: flight into space ‘by the help of fowls’ such as Francis Godwin’s *Man In the Moone* (1638); flight to the Moon aided by mechanically constructed wings or other flying machinery where Wilkins’ *Discovery of a World in the Moone* (1638) looked forward to lunar colonies ‘as soon as the art of flying is found out’ [Wilkins, 208]. Minor poet Francis Harding’s collection of Latin verses *In Artem Volandi* [*On the Arts of Flying*], 1692, imagines the future invention of flying machines as a boon; the rich will leave the Earth for the other planets leaving their estates to the poor, and a new British aerial navy will establish peace in the Moon. Cyrano’s various ingenious devices for interplanetary travel move the business of flight from fantastical into scientific, or more strictly *technical*, idioms. The anonymous prose work *Selenographia* (1690) is subtitled *The Lunarian, or Newes from the World in the Moon to the Lunaticks of This World*, and concerns a flight from Earth to Moon by means of a large kite.

An even more peculiar method of interplanetary travel occurs in Margaret Cavendish’s *The Blazing World* (1666). In this eccentric tale a merchant elopes with a beautiful young woman from ‘a foreign country’, but his ship is blown by tempest to the North Pole where he and his male crew die of cold. The surviving woman passes, Antonius Diogenes-like, into ‘the blazing world’ of the title; our North Pole having ‘another Pole of another world ... joined close to it’. The cosmological rationale of these two linked planets is only obscurely related.

It is impossible to round this world’s globe from Pole to Pole, so as we do from East to West, because the Poles of the other world, joining to the Poles of this, do not allow any further passage to surround the world that way, but if anyone arrives to either of these Poles he is either forced to return or to enter into another world; and lest you should scruple at it, and think if it were thus those that live at the Poles would either see two suns at one time, or else they would never want [i.e. lack] the sun’s light for six months together, as it is commonly believed, you must know that each of these worlds having its own sun to enlighten it, they move each one in their peculiar circles, which motion is so just and exact that neither can hinder or obstruct the other. [Cavendish, *Blazing World*, 254]

Attempts to elucidate further only thicken the cloud of unknowing (‘for they do not exceed their tropics, and although they should meet, yet we in this world cannot so well perceive them by reason of the brightness of our sun, which, being nearer to us, obstructs the splendour of the suns of the other worlds, they being too far off’). The title plays upon blazing star, a common 17th-century synonym for comet: blazing, that is, with light rather than fire. The imaginary realm of Cavendish’s novel is comet-like in its simultaneous auspiciousness and adventitiousness. The unnamed lady meets the Empress of this blazing world, is shown the marvels of the new planet, discusses science and metaphysics, and meets various alien humans, from worm-men and fly-men to spirit-creatures, although Cavendish is disarmingly vague about many details (‘in what shapes of forms,’ she says at one point, ‘I cannot exactly tell’ [Cavendish, 291]). Learning that living people can embody the souls of oth-

ers such as 'Galileo, Gassendus, Descartes, Helmont, Hobbes, H. More, etc.' [Cavendish, 306] the Empress takes into herself the soul of the author, the Duchess of Newcastle, Margaret Cavendish herself, afterwards leading an army from her world to conquer the Earth in order to establish a terrestrial utopia. The sheer oddity of this text has provoked ridicule in some, although recent critics have seen more merit in it. Geraldine Wagner for instance argues that 'it is a testament not to the text's incoherence but to its breadth and complexity that, like its author, it cannot be reduced to singleness. Consider first how it is at once a utopian experiment, a romance adventure, an unconventional autobiography, and a philosophical/scientific exposition.' [Wagner, 5] Clearly, Cavendish is articulating a sense of the dialectic of the sexes through her fable of two separate worlds, and it might be argued that the sheer weirdness of their cosmological relations is ingeniously expressive of a metaphorical cultural dislocation. More, she is the first identifiable female SF author, the creator of a bold SF vision.

CYRANO DE BERGERAC AND THE PLURALITY OF WORLDS

Savinien de Cyrano de Bergerac probably wrote his two tales of cosmic travelling in the 1630s, although they were not published until after his death. The first to appear was *Histoire Comique par Monsieur de Cyrano Bergerac, Contenant les Etats et Empires de la Lune* [Cyrano de Bergerac's *Comical History, containing the States and Empires of the Moon*], 1657. In it Cyrano decides to travel to the Moon to find out for himself whether that world is inhabited. He tries two inventions to achieve this journey; first, he attaches to himself many bottles of dew ('de fioles pleines de rosée', Cyrano *Empires de la Lune*, 32) which are drawn up by the Sun's heat, drawing Cyrano up with them; but instead of flying to the Moon he travels only as far as Canada. Here he constructs a sort of rocket, powered by 'fuseés volantes [sky rockets]', (Cyrano *Empires de la Lune*, 40) that propels him into outer space. Landing on the Moon he meets the Old Testament prophet Elijah, later encountering its aboriginal inhabitants—gigantic beast-men, not unlike large horses. He converses with a more humanoid alien born on the Sun but now resident on the Moon. One social class of lunarians uses music instead of language; food is inhaled rather than ingested; cities are mobile. Kept as a pet in a sort of zoo by the lunarians, Cyrano meets Domingo Gonsales (the fictional hero of Francis Godwin's *Man in the Moone*). He is then tried in a court to decide whether his contention that the Earth is inhabited is actionable or not, although he is later released. After a lengthy meal, and discussion with a Moon-being concerning religion and cosmology, Cyrano decides that his interlocutor is possessed by the devil, and clings on to him as he flies up into the air. He is thereby transferred back to Earth, landing in Italy.

A second fantasy was published in fragmentary form: *Les Nouvelles Oeuvres de Monsieur Cyrano de Bergerac, contenant l'Histoire Comique des Etats et Empires du Soleil* (*New Works of Cyrano de Bergerac, Including the Comical History of*

the States and Empires of the Sun, 1662). In this work, Cyrano's account of his time on the Moon has landed him in trouble with conservative European authorities; he escapes imprisonment, and manages to return to outer space by means of a third flying device, a craft powered by mirrors that deflect the Sun's rays to provide levitation. Flying through space, Cyrano eventually lands on the Sun, which he finds to be populated by a utopian society of intelligent birds, a 'Parlement des oiseaux'. These creatures put him on trial for the crime of being a human being, and sentence him to death, although the intercession of a parrot (whom Cyrano had once released from a cage) reprieves him.

Cyrano's adventures blend fantastical humanist speculation on the material nature of existence with lengthy, to modern sensibilities, rather tedious disquisitions on theological questions. The point, for 17th-century SF, is that as an emergent mode it negotiates precisely these two quantities, the scientific and the religious, the imaginative possibilities of the first dialectically engaged with the human anxieties about the erosion of the latter. More specifically, Cyrano returns repeatedly to the question of the plurality of worlds, the issue over which Bruno lost his life, and which continued to be a live issue throughout the century. Before he even leaves the Earth, Cyrano's protagonist is having earnest discussions with a French military officer as to whether 'les étoiles fixes sont autant de soleils ... [ou] que le monde serait infini', their conclusion being that 'comme Dieu a pu faire l'âme immortelle, il a pu faire le monde infini [just as God made the soul immortal, so He made the universe infinite]' [Cyrano *Empires de la Lune*, 37–8]. Lunarians also seek to demonstrate to Cyrano's protagonist that there are an infinite number of worlds within an infinite universe ('Il me reste à prouver qu'il y a des mondes infinis dans un monde infini' one of them announces, before elaborating a lengthy argument by microcosmic analogy, Cyrano *Empires de la Lune*, 92). This particular notion goes to the heart not only of Cyrano's SF tales, but also of the development of the genre itself.

Later in the century some of the theological sting had gone out of the idea of a plurality of worlds, and a freer set of speculations began to be published. English philosopher James Howell could assert confidently as early as 1647 'that not only the Sphear of the Moon is peopled with *Selenites* or Lunary-Men; but that likewise, every Star in Heaven is a peculiar World of itself, which is coloniz'd and replenish'd with *Astrean* Inhabitants' [Howell, 2:411]. Protestant Edward Sherburne, in his 1675 versified edition of Marcus Manlius's 1st-century BC *Astronomicon*, adds lengthy appendices in which he asserts his belief 'that the Moon is inhabited ... and with Living Creatures fifteen times larger than those with us' [Sherburne, 179]. On the other side of the religious divide Gaetano Felice Verani's *Philosophia Universa Speculativa Peripatetica* (1686) answers his own question 'if the Moon be inhabited, how might its inhabitants appear? (*An Luna sit habitabilis, habeatque suo incolae?*)' in the negative [Verani, 336]. His argument is the familiar one, all men have sinned in Adam and been redeemed in Christ; therefore there can be no other men but those who live in this our lower world ('*ergo non dantur alij homines exceptis ijs qui in hac inferior terra degunt*' [338]). But the spirit of scientific

imaginative extrapolation pokes through Verani's Catholic orthodoxy. If there *were* such beings, he goes on, ('*si essent homines in orbe Lunari*'), how strangely would our world appear to them! He then elaborates at some length the very position he has just denied, looking back at our land and water world ('*nostre terraqueum globum*') not in a satirical but in a scientific spirit.

More influential were works such as Pierre Borel's *Discours nouveau prouvant la pluralité des mondes* (*New Discourse Proving the Plurality of Worlds*) of 1657 and Bernard Le Bovier de Fontenelle's very popular *Entretiens sur la pluralité des mondes* (*Dialogue on the Plurality of Worlds*) of 1686. This latter work takes the form of a witty conversation between the author and a noblewoman, divided between five evenings' conversation. The second and third evenings' discussion explores the notion that '*la lune est une terre habitée* [the Moon is an inhabited land]', with '*autres fleuves, d'autres lacs, d'autres montagnes, d'autres villes, d'autres forêts, et ce qui m'auroit bien surpris aussi, des nymphes qui chassoient dans ces forêts* [other rivers, other lakes, other mountains, other towns, other forests and, it wouldn't surprise me, other nymphs hunting through these forests]' [Fontenelle, pp. 87]. Like Kepler's Levanians, these Lunians '*incommodez par l'ardeur perpétuelle du soleil*' must make their homes underground [Fontenelle, p. 135]. The fourth evening considers the '*particularitez des mondes de Venus, Mercure, Mars, Jupiter et Saturne*' [p. 95] and the fifth and final evening suggests '*que les étoiles fixes sont autant de soleils, dont chacun éclaire un monde* [that the fixed stars are also suns, and therefore each illuminates a world]' [p. 129], although the narrator later retracts his belief in the inhabitation of the Moon.

The work apprehends something of the sheer size of the Copernican cosmos. Fontenelle's interlocutor declares her mind boggled ('*mon imagination est accablée*') by the thought of '*la multitude infinie des habitants de toutes ces planètes* [the infinite multitude of inhabitants on all these worlds]' [p. 150]. More importantly, and despite occasional pious interjections offering praise '*à Dieu ... qui fixât les gons dans les places qui leur sont naturellement convenables*' [p. 184] the work is remarkably secular in its speculations. The Moon and other planets are compared to Australia and the Americas, populated worlds ready to be discovered by humanity. The whole book is scientifically explained; indeed, 'Fontenelle's promotion of Copernican ideas led to its being placed on the Papal index' [Hawley, 1:29].

Dutch polymath Christaan Huygens composed his account of the solar system *Cosmotheoros* (published three years after Huygens' death, in 1698) according to the principle of rigorous scientific falsifiability: 'I must acknowledge that what I here intend to treat of is not of that Nature as to admit of a certain knowledge; I cannot pretend anything as positively true (for how is it possible), but only to advance a probable Guess, the Truth of which everyone is at his own liberty to examine' [Huygens, vol 1., pp. 9–10]. He deduces an inhabited solar system from theological grounds: God could not have made all these planets to no purpose; ergo they must be inhabited by rational creatures. Huygens' own scientific accomplishments included mathematical advances in

the field of calculus, the discovery of Saturn's ring-system, works on clocks and lenses and much else. Marjorie Hope Nicolson finds the book replete with Huygen's belief that 'Justice, Honesty, Kindness and Gratitude' must be omnipresent in God's cosmic creation, making him, in effect, a utopian writer: 'We journey on to find everywhere "solemn troops and sweet societies" of highly civilised men who ... bend their minds to scientific invention'. Nicolson thinks that this form of *voyage extraordinaire* lacks vigour: 'the supernatural voyage had lost the vitality it once had had in the hands of Lucian and Kepler. Kepler had lived in an age of superstition when witches were more common than were scientists. His descendents of the 18th-century lived in the cool clear light of reason' [Nicolson, 62]. But this is a simplification. It is true that the *Cosmotheoros* can strike the modern reader as dull, but Huygens in fact bases his *conjecturae* on a rational-scientific principle that, although things in an infinite universe may be infinitely different to things observable on Earth, just because this is possible does not make it *necessarily* so (*'neque idcirco necesse esse'*). Huygen's conjectures proceed from a principle of uniformity in nature that tempers the more extravagant posturings of much early SF with a coolly understated scientific restraint that has its own imaginative power.

By stressing the materialist nature of the cosmos, Huygens details a space into which mankind can spread; and indeed he actively contemplates future plans to colonise the various moons of the solar system. Seventy years earlier, Charles Sorel's fictional hero Fancion had similarly seen the inhabited Moon in terms of threat to the Earth, wondering if 'il y aura là un prince comme Alexandre qui voudra venir compter ce monde-ci. Il fera provision d'engins pour y descendre [There will be a prince like Alexander the Great up there, planning to come down and subdue this world of ours. He'll need to provide engines for descending to our world]' [Sorel, *Vraie Histoire*, 425].

Charles Sorel was a wonderfully inventive writer, less well known than Cyrano but of particular significance for the development of SF. His dense comic picaresque novel *La Vraie Histoire Comique de Francion* (1626) includes lunar speculation: '*vous sçavez que quelques sages ont tenu qu'il y avoit plusieurs mondes ... moi, je crois qu'il y en a un dans la lune*' [Sorel, *Vraie Histoire*, 425]. A later novel *Gazettes et Nouvelles ordinaires de divers pays lointains* (*Gazettes and News from Various Faraway Countries*, 1632) includes amongst its various wonders a metallic and artificially constructed woman who possesses the knowledge of all the world's languages—the creature with the best claim to be the first humanoid robot in literature. Sorel followed up on this idea with *Recueils de pièces en prose* (*Collections of prose pieces*, 1644 and 1658), in which a locksmith invents a number of metal beings to act as servants. An earlier work, the playful anti-pastoral *Le berger extravagant* (*The Extravagant Shepherd*, 1627), includes amongst its wonders a race of men with skin as transparent as oilpaper (*'une peau transparente comme du papier huilé'*, p. 382) through which bones and organs can be seen. It is the sheer imaginative inventiveness of Sorel that delights most. In *Le courier véritable* (*The True Courier*, 1632), a utopian tale set in Australia, we discover an ingenious mechanism for long-

distance communication: sponges that soak up sound and voices, and can be carried great distances before squeezing the sound out again (*'certaines éponges qui retiennent le son et la voix articulée, comme les nôtres font les liqueurs'*). Other fanciful ideas for long-distance communication in Sorel's work include certain viewscreen-like magic mirrors (*'miroirs magiques'*) in *Le berger extravagant*.

NEO-LATIN WRITING

One aspect of the science fiction at this time, largely absent from conventional accounts, is its neo-Latin component. Historians of SF are not alone in this neglect: many scholars of European vernacular literatures, unconfident of Latinity, omit the vigorous traditions of Latin writing during the 17th and 18th centuries. This omission is most regrettable where science fiction is concerned.

For one thing, insofar as science fiction is determined, as we might expect it to be, by developments in science during this period, we must note that pretty much all the important developments in science were written in Latin. A merely indicative list would include Copernicus's *De Revolutionibus Orbium Cœlestium* (1543); William Gilbert's seminal study of magnetism *De Magnete* (1600); Kepler's *Astronomia nova* (1609)—his *Somnium* (1634) is discussed above; Galileo's *Sidereus Nuncius* (1610); Bacon's *Novum Organum* (1620); William Harvey's work on the circulation of the blood, *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus* (1628); Christiaan Huygens's astronomical accounts, *Systema Saturnium* (1659) and *Horologium Oscillatorium* (1673); Newton's *Principia* (1687), arguably the single most important scientific work published; Hendrik van Rheede's medical work *Hortus Malabaricus* (1703); Linnaeus's systematising *Systema Naturae* (1735); Euler's *Mechanica* (1737); Bernoulli's *Hydrodynamica* (1738) and Galvani's *De viribus electricitatis in motu musculari* (1791).

To pluck one name from that list, Newton. There were a great many literary re-workings of Newton's science (some are discussed in the following chapter), and many of these were in neo-Latin. For example, the whole purpose of Dalmatian poet Benedicto Stay's ten-book epic poem *Philosophiae Recentioris* (1755–1760) is to articulate Newtonian physics in Latin hexameters. Dull as that project sounds to modern sensibilities, Stay enlivened his account with a number of inset fables and stories. An example, in the middle of a detailed explanation of the three-body problem in orbital mechanics Stay inserts a lengthy story about a utopian society. A wise man warns the people that certain poisoned clouds are approaching, the rain from which will destroy their sanity. The people ignore him, and the philosopher retires to a cave to wait out the storm (*'Ecce tonante ruit Caelo pluvial unda profuse ... jam mortale genus novoque correptum partier morbo* [the thundering heavens threw down a profuse rainstorm, and now human kind was attacked by a strange new disease]) [Stay, 2:196]. When the wise man re-emerges the rain has driven the people insane, and utopia has become dystopia. He observes for a while, but is soon driven by loneliness to throw himself into one of the pools of poisoned rainwa-

ter, and so to join his fellow creatures in their insanity. This little story enjoyed a life of its own (Samuel Taylor Coleridge translated it as 'The Fable of the Madning Rain' for the first instalment of his magazine *The Friend*, 1809). It is one of several in Stay's poem.

Neo-Latin had the advantage, at this period, of being a genuinely functional lingua franca. Novels written in Latin could reach larger audiences than those in the vernacular. For example, the best-selling novel of the 17th century was probably the Latin *Argenis* (1621) by Scots writer John Barclay. Widely reprinted (at least 30 times in Latin alone), it is modelled on the Ancient Greek novel and tells the story of the King of France, Poliarchus, and the beautiful Argenis, a Sicilian princess. There is political intrigue, two interludes with pirates and much adventuring; and as per its model there are also various supernatural and wondrous elements. The question is the extent to which we read such aspects as magic in a mythic framework, or as manifestations of a newer cultural logic looking forward to developments in science and technology. In Johannes Ludovicus Praschius's *Psyche Cretica* (1685), a rollocking adventure/love-story, our heroine Psyche is kidnapped by the evil Philotimus and flown through the sky in an aerial chariot. Her horror at being separated from her lover and fear for what will become of her is momentarily overcome by the sheer wonder of being able to fly: '*Laeta ac spe tumens, cum per auras, velut diva curru, inveheretur, cum nubilia divideret* [her swelling sense of joy as she passed through the air, riding in so godlike a car and cutting through the clouds]' [Praschius, 134]. There is an airborne chariot in Ovid (*Metamorphosis*, 6:6) and we may interpret this passage as a gesture towards mythological provenance. But the account can hardly avoid partaking of a more specifically technological sublime.

Although it does not explicitly explore its temporal dimension, *Eudemia* (1637–1645) by Ianus Nicius Erythraeus (the pseudonym of Giovanni Vittorio Rossi) could be considered the first 'alt-historical' novel, at least in the sense that it intervenes in a known historical period in order to branch off new world-built possibilities. Set in the 1st-century AD, the novel posits a group of Romans fleeing the corruption of Tiberius's court to establish a Roman utopia on an island in the Atlantic, the titular Eudemia. Rossi's purpose is unambiguously satirical: 'behold the true nature of satire' he boasts in his preface, adding: 'we must have truth, or nothing—but truth veiled (*veritas aut nulla, at obvelata*)' [Erythraeus, 10]; not a bad definition of the core strategy of SF. Of course the 'real' topic of the novel is the corruption of Rossi's Rome, and satirically rendered versions of the Barberini inhabit the novel under various noms de plume. But the systematic creation of an alternate world in a historical context opens up new possibilities for fiction.

Other Neo-Latin works straddle quasi-scientific and *voyage extraordinaire* modes. One influential example is found in the frankly cloying piety of the Jesuit priest Athanasius Kircher, who in 1660 published a supernatural tour of the cosmos: *Iter exstaticum coeleste, quo mundi opificium, id est, coelestis expansi siderumque tam errantium* (*A journey in the form of a trance to the heavens, or how the universe of wide heavens and wandering stars is made*; an earlier Roman edition of

the book, 1656, was called *Itinerarium exstaticum*...) To the accompaniment of the music of the spheres the two protagonists, Theodidactus (whose name means taught by God) and Cosmiel (an angel), travel from planet to planet, conversing with the intelligent life forms they encounter on the way. Escape velocity is provided by beautiful music, and Kircher begins the work by recalling an actual concert he had attended, the beauty of which had so profoundly affected him that he claimed to have been actually projected offworld: '*vidi enim vero me a genio meo tutleari aurae illatum aetherae deduci ad Lunam, ad Solem, ad Venerem, ad Planetas reliquos, ad sidera ipsa fixa* [I really saw these things, carried upwards by my guardian genius on an ethereal breeze to the Moon, the Sun, to Venus and the other planets and to the fixed stars themselves]' [Kircher, 3–4]

Kircher rejected the Copernican cosmology, preferring the model proposed by Tycho Brahe, who believed that the Sun orbits the Earth and is in turn orbited by the planets and the fixed stars. This model allowed Kircher to maintain the geocentric orthodoxy demanded by his faith, while also exploring the solar system as it was being revealed by contemporary science. Indeed, the whole voyage takes place within a strictly Catholic Christian framework. The title page illustration shows, to the right, the worlds in their



Fig. 4.1 'Subterranean World', from Kircher's *Iter exstaticum coeleste* (1660)

Brahean orbits; but also represents, beyond the cosmic horizon, the mysterious Hebrew Name of God in a roiling mass of cloud (Fig. 4.1).

And yet even this religious-mystical transport acquires something of the solidity and systematic world-built splendour of the emerging mode of science fiction.

Just as Kepler took the prototype for his SF novella from Cicero's *Somnium Scipionis*, so did several other 17th-century writers of fantastika. When Dutch theologian Anthony Bynaeus launches into outer space in *his* dream—*Somnium* (1674)—it was to a place where the goddess of wisdom, *Diva Sophia*, promises to reunite all the different intellectual and religious factions of the Earth: '*dum ascendimus Mercurium rogavi unde acres istae pugnae ac contentions ad quarum spectaculum me vocaverat, orate essent* [as we ascend to Mercury, we leave behind questions as to why there is so much conflict and struggle amongst the wise, and instead witness the unity of prayer]'. [Bynaeus, 4]. Classical scholar Pieter Burman dreamt a different sort of dream, of earthly Utopia. His *Somnium, sive Iter in Arcadiam novam* (*A dream, or travelling to the New Arcadia*, 1710) is a witty long poem in which Arcadia is a land of bibliophilic perfection, a world in which all the best books are immediately available. This strikes me, as a vision, as liable to appeal to 21st-century booklovers just as much as 17th-century ones.

TERRESTRIAL UTOPIAS

This brings us back to the matter of utopian writing. Whilst many works in this mode followed the linguistic precedent of its Morean originary text, some 17th-century utopias pushed the envelope of their world-building not only into distant lands but into interplanetary romance itself. Actually, utopian writing remained a contentious mode for many. German Jesuit priest Jacob Bidermann, when the teaching of the 'new mathematics' of calculus was banned by authority in Jesuit schools, published his comic rebuttal to the utopian mode as *Utopia Didaci Bemardini* (*Didacus Bemardini's Utopia* 1621). Set in the lightless realm of Cimmeria and its ironically-named capital city Utopia, this book relates the various, intricately embedded traveller's tales of the fictional narrator, whose name is anagrammatically related to Bidermann's. These tales stress insanity: one man believes his head full of flies; another dare not micturate for fear of flooding the city; a third believes his head monstrously huge; and so on. Cut off from the salutary environment of the Catholic church, Bidermann satirically insists, utopia is a crazy and nightmarish realm.

Protestant writers were more likely to take the form as a positive. Francis Bacon, later Baron Verulam, is often credited with advancing the cause of what today we would call science. His fragmentary utopian novel was written, like More's prototype, in Latin (*Nova Atlantis*) and then translated into English: *New Atlantis: A Work Unfinished* (1627). Inaccurately described by some as 'the first science-fiction novel' [Carey, p. 63]. A truncated work (in one modern edition it runs to little over thirty pages), *New Atlantis* does contain a certain amount of speculative science, including glancing allusions to submarines and

automata. But it lacks narrative, and indeed its second part is reduced to a mere list by the manuscript's incompleteness on Bacon's death ('The prolongation of life. The restitution of youth in some degree. The retardation of age. The curing of diseases counted incurable' and so on through 33 items). As fiction, there is something elusive about the *New Atlantis*.

To say so is not to accuse Bacon of vagueness. On the contrary, his speculations are very deliberately set, as it were, on the fault line of this 'dangerous' new mode of writing. On the one hand they look forward to a radically re-imagined future, to (in Robert Appelbaum's words) an 'anticipatory consciousness':

Every theoretical suggestion Bacon made on the subject of science and society in his writings broadcasts a hope for nothing less than a total revolution in the human condition, where not only new discoveries will have been made but where a new relation between humanity and the world it inhabits will have been accomplished. [Appelbaum 2004, 51]

Then again, Appelbaum also records the fundamental paradox of Bacon: 'for all his revolutionary language, Bacon never once ceased paying homage to the sublime power of the monarch whose supporter he had always been.' Bacon has been criticised as a conservative absolutist by some, and as an ur-futurist revolutionary heady with the possibilities of science and technology by others. This diremption indexes not confusion on Bacon's part—however elliptical his writings, they all cleave to a cogent universal vision—but to the very logic of the new science fiction, or speculative scientific extrapolation. It emerges at one and the same time as the manifestation of centralising power and the destabilising harbinger of social dissolution.

A great many 17th-century novels explored this same tradition of society as novum. In Lutheran churchman Johann Valentin Andreae's Latin novel *Christianopolis* (1619), a traveller shipwrecked upon the island Caphar Salama discovers a utopia whose perfection is a function of its inhabitants' perfect Christian practice. English Puritan Samuel Gott's *Nova Solyma, the Ideal City; or Jerusalem Regained* (1648) shares with Rossi's earlier *Eudemia* (discussed above) a flavour of the alt-historical. Sometime around the year 1600, the novel posits, the Jews of the world received a divine vision that converted them *tout court* to Christianity. These redeemed Jews then seized Jerusalem and remade it as a Christian utopia. The novel, though a detailed account of this society, is also a response to the upheavals of the English Civil War, and in particular to the imaginative space the discourses surrounding the war opened for re-imagining social possibility.

Other utopias from this period are set more conventionally in More-like distant islands. Joshua Barnes's *Gerania* (1675) describes an imaginary kingdom of miniature humans 'on the utmost Borders of India' which some critics have seen as a precursor to Swift's Lilliputians. The unfortunately named Richard Head composed a number of fables of imaginary lands, including *The Floating Island* (1673) and the supernatural voyage to *O-Brazile: or The Enchanted Island* (1675). *The Isle of Pines* (1668) by Henry Neville relates how an English

mariner, George Pine, discovers and populates a new land near the coast of Australia, producing 12,000 descendants in less than a century. This imaginary kingdom is distinguished by a remarkable sexual explicitness; one modern critic lists the erotic episodes ('polygamy, voyeurism, cross-class intercourse ... miscegenation and orgiastic sexual indulgence') and notes that "'pines" is an anagram of "penis"' [Bruce, xxxvii–viii]. It is debatable how useful it is to describe this 'pornotopia' as science fiction; but Neville's fantasy of sexual fulfilment as social novum was no one-off.

In Nicholas Goodman's pamphlet *Hollands Leaguer, or an Historical Discourse of the Lie and Actions of Dona Britanica Hollandia, the Arch-Mistris of the wicked women of Eutopia* (1632), Eutopia is, satirically enough, a notorious brothel in London's Bankside. Edward Howard's play *The Six Days' Adventure, or the New Utopia* (1671) engages gender politics in less contumelious fashion; set in More's island, the play opens as the government of men is about to be replaced by government exclusively by women. Although Howard mostly plays this premise for laughs, with comedy wrung from the damp dishcloth of henpecked husbands and cuckolds, there is also some thoughtful speculation on whether such a government contradicts 'the natural order', or even whether it might presage a better society.

French author Gabriel de Foigny spent some time in his youth as a Franciscan monk, but later fled to Switzerland and converted to Protestantism. His *La Terre Australe Connue: c'est-à-dire une description de ce pays inconnu jusqu'ici et de ses mœurs & de ses coutûmes* (*The Unknown Australian Land: a description of this undiscovered country, its morals and its dress*, 1676) imagines Australia to be populated with a race of hermaphrodites.³ These red-skinned creatures ('*d'une couleur qui tire plus sur le rouge que sur le vermeil*', Foigny 83) live peaceful and utopian lives; naked, sexless, rational and harmonious, '*les Australiens sont exemts de toutes passions*' [Foigny, 140]. The hero, Sadeur, is by chance a hermaphrodite himself. Shipwrecked upon the Australian coast he is happily accepted by the Australians. It transpires that the inhabitants of this utopia cannot tolerate imperfection of any kind. Foigny's red-skinned Australians throttle at birth any of their children who are born with only one sex, and they prosecute a vigorous war of annihilation against conventionally gendered natives (Les Fondins or half-men). Sadeur falls in love with a Fondin woman, and eventually leaves this supposedly ideal land.

This strange utopia reflects a series of authorial anxieties about the sexual and social constraints of late 17th-century Europe. The text itself was bowdlerised in later publication. James Burns notes that

In chapter five, which was almost entirely cut from the 1692 edition, Sadeur discusses such issues as public nudity as a means of ridding people of dangerous preoccupations, male tyranny over women, and sexual equality. Despite his noble pretences in this chapter and throughout the work, it is clear that Foigny, who was run out of several French towns for bigamy and other sexual crimes, used the landscape and society of his Austral world to indulge imaginatively in

less wholesome practices. We glimpse the sexual appetite that got the author in trouble when Sadeur discusses his participation in a battle against the Fundians and his attempt to rape two female prisoners of war. [Burns, 5]

But although modern interest in Foigny's work has, for understandable reasons, tended to dwell on the sexual features, the importance of the book for the development of SF is rather different. In his own day Foigny's hermaphroditic Australians caused offence less because of erotic unconventionality, and more because he represented them as born without original sin. 'Foigny was persecuted,' notes Geoffroy Atkinson, 'because the Australians of his novel did not sin in Adam' [Atkinson II:17]. In other words, Foigny's book represents a theological otherness, an alien land outside the conceptual schema of the Church.

Huguenot Frenchman Denis Vairasse fled to England where he lived for decades. His *History of the Sevarambians, a People of the South-Continent* (1675–1680) was written in English, and quickly translated across Europe, Rousseau and Kant both approved it. Vairasse's Australian realm is divided into a dystopia ruled by a tyrant called Stroukaras, a satirical exaggeration of Louis XIV's France, and the advanced utopia of the Sevarambians, technologically advanced and tolerant—their name points both to their 'ambi' evenhandedness and the 'several' possibilities for religious and social praxis open to their citizens. A number of other Australian utopias enjoyed success. Thomas Killigrew's *Miscellanea Aurea: The Fortunate Shipwreck, or a Description of New Athens in Terra Australis incognita* (1720), which narrates a shipwreck's discovery of New Athens in Australia, in which descendants of ancient Greeks and native Australians live in harmony. Nicolas Edme Rétif de la Bretonne published an account of a voyage to Australia by flying machine, *La Découverte Australe par un homme-volant* (*The Discovery of Australia by a Flying Man*, 1781, discussed in the following chapter). By the 18th century, however, the number of actual *terrae incognitae* on Earth was rapidly diminishing. Utopian writers, and writers interested in wholly new imaginative voyages of exploration, were forced to move their imaginations in other directions.

One alternative, intermittently utilised by fantastic authors, is that new worlds might be discoverable *beneath* the surface of the Earth rather than upon it. The German picaresque novel *Simplicissimus* (1668; a considerably expanded version was published 1671) by Hans Jakob Christoffel von Grimmelshausen, follows its hero across the surface of the globe in largely realist-satirical mode, but also includes various more fantastical interludes. One of these latter is an SF/utopian episode in which Simplicissimus visits the happy society of '*den Sylphis in das Centrum terrae* [the sylphs who inhabit the middle of the Earth]' [Grimmelshausen, 427]. But this episode is short, and rather at odds with the grimly comic verisimilitude of the protagonist's misadventures across war-torn Europe that constitute the bulk of the novel. Another strategy was to envision utopia in a spiritual realm. Jean de la

Pierre's *Le Grand Empire de l'un et l'autre monde, divisé en trois royaumes: le royaume des aveugles, des borgnes et des clair-voyants* (1630) deals, as its title suggests, with a Great Empire divided into three kingdoms, of the blind, the one-eyed and the 'clear-seeing'.

Robert Appelbaum argues that Joseph Hall's satirical Australian dystopia in *Mundus alter et idem* (*A Different World the Same* 1605; translated into English by John Heaney as *The Discovery of a New World or A Description of the South Indies* in 1610) in fact marks a limiting fiction for terrestrial imaginary voyages. Hall's travellers visit the islands Crapulia, Viraginia, Moronia and Lavernia and finds them dedicated to unnatural social novums: in the first everybody is a glutton; in the second women rule rather than men; the third is full of fools; and the fourth is structured on the principle that everybody is a thief. Applebaum focusses on what he calls 'Hall's most incisive yet subtle argument ... that what was once believed to have been *out there*, in the world beyond European experience, structuring our hopes and desires, our ontological sense of who and where we are, was never anything but an absurd, wishful projection of what we already are *in here*.'

What we have discovered thanks to the new geography, in other words, isn't an object world of enchanted or useful phenomena, a land of riches ready to be appropriated and exploited, but rather ourselves, our disenchanting selves, confronting the vanity of our worldly wishes. Viraginia, Crapulia, Lavernia, Moronia—that's what's out there, and these sinful countries are clearly nothing but projections of our worst appetites and failings ... Terra Australis is in effect England itself, cut off from itself, spatially inverted, distorted, and magnified, but nevertheless its *self, idem*. [Appelbaum 1989, 11]

This takes the Morean *Utopia*, with its clear and manifold points of application to More's own England, to a logical extreme (in Germany Hall's work was even translated under the title *Utopiae Pars* and its title page embroidered with epigrams in the Utopian alphabet). Only offworld, we might think, can the conceptual space of possibility, and of radical otherness, be preserved. There is, we might say, a dead-end-ness in the very project of utopia.

FUTURE TALES AND ALTERNATE HISTORY

In Britain, utopian speculation spilled over into practical politics during the upheavals of the 1640s, a time when many people laboured in unembarrassed fashion to remake England as a new and perfect land. So, for example, tracts by English agrarian revolutionary Gerrard Winstanley are strongly utopian in flavour, although practically conceived rather than merely speculative or idealised. His followers were a small part of those groups calling themselves Levellers, Diggers, Ranters and many other names, and the main practical consequence of their utopian enthusiasm was effective state repression of such dangerous ideas.

Accordingly, as utopia became increasingly contested and blocked in this world at this time, some writers took the opportunity to relocate their utopias to other worlds, or else to imagine how things might be better in another time. One of the most important literary inventions of the 17th century was the tale of the future. It would not be until the 20th century that 'the future' would become the default setting, as it were, for the SF tale; and most science fiction in the 18th and 19th centuries was located in versions of its present day. The few exceptions are interesting primarily as precursors to the 20th century's cult of the future, but the earliest examples of futurological fiction do illustrate the ways in which SF in general was separating itself out from religious discourse.

A 16th-century German schoolteacher called Paul Grebner acquired some local celebrity as a prophet, predicting biblically informed end-times to be preceded by a 'great northern monarch' who would unite Europe and overthrow the Pope. Grebner soon became a name, like Nostradamus, to which various, often contradictory prophesies were attached. The turmoil of the English Civil War stirred up interest in Grebner, and various books were published purporting to be newly discovered manuscripts by him, but in fact pushing specific political agendas relevant to their authors. *A brief description of the future history of Europe from Anno 1650 to 1710* (1650) is one such, a pseudo-Grebnerian work written by an anonymous English Fifth Monarchist, which group, inspired by their reading of the Book of Daniel, agitated for a fifth monarchy to succeed the Assyrian, the Persian, the Greek and the Roman, and during which Christ should reign on Earth for a thousand years. The theological provenance looms large in *Future history of Europe*, as when the Pope is described being overthrown during the numerologically significant year 1666. Yet other aspects of the book read more like early SF, as when the Fifth Monarch seizes power in America.

Francis Cheynell's six-page political squib *Aulicus: His Dream of the King's Sudden Coming to London* (1644) is sometimes described as the first published future fiction. This oversells it, as there are plenty of prior examples of this mode of writing. More, Cheynell's text is something of a squib. Aulicus—Latin for courtier—is a dunce, unable to comprehend what has happened to his country, or the failings of the king he slavishly serves. Cheynell retells his dream of Stuart victory only to mock its absurdity. A companion volume *Aulicus, His Hue and Cry Sent Forth After Britanicus, who is Generally Reported to be a Lost Man* (1645) reflects back upon the Civil War, and finds rumours of Britain's 'loss' much exaggerated. Indeed, Aulicus is a stock figure in 17th-century satire, a means of critiquing court politics by invoking a foolish courtier without treasonously, and perilously, satirising the monarch himself.⁴

Jacques Guttin's *Epigone, histoire du siècle futur* (1659) is a more considered attempt to portray a future society, although the flavour of the whole is very far from what we might consider futuristic. On the contrary indeed, Guttin's book rehearses romance and epic tropes in a fully nostalgic manner. The frame narrative describes how Epigone (whose name means posterity or after-born) and his friends are caught in an enormous storm at sea, are shipwrecked on the

apparently African coast of Agnotie (Guttin's own glossary defines this as *terre inconnue*). They are taken inland to a mighty city, where by virtue of a crystal translation artefact they are able to communicate with the strange natives, to whose monarch Epigone relates his various adventures. Despite being notionally located in the future age, this text draws heavily on Virgil's *Aeneid*. The adventures themselves, including an interlude in a female-ruled amazonian kingdom devoted to sensual pleasure, echo Homer's *Odyssey*. The reversals, adventures, love elements, sword fights, escapes and all the usual bag and baggage of conventional romance dilute the notional futurity. Paul Alkon argues that 'Guttin's "future century" is not unequivocally a future at all' [Alkon, *Origins*, 37].

Indeed, it is one of the axioms of SF criticism that this counterfactual and temporal element enters the picture much later. Alkon insists that 'the impossibility of writing stories about the future' was 'widely taken for granted until the 18th century', since 'the future was reserved as a topic for prophets, astrologers, and practitioners of deliberative rhetoric' [Alkon, *Origins*, 4]. Darko Suvin locates the 'central watershed' in the development of SF as a specifically futuristic fiction 'around 1800, when space loses its monopoly upon the location of estrangement and the alternative horizons shift from space to time' [Suvin, 89]. In his history of early SF Alkon goes further: 'writers from antiquity to the Renaissance never tried future settings' [Alkon, *Science Fiction*, 21].

They did, though. Speculating about possible (secular) futures is so necessary a function of the human ability to plan and strategise it would be surprising indeed if it were completely absent from earlier literatures. And in fact it is not hard to find other examples of future writing from this period, some of it earlier even than Cheynell's *Aulicus*. For instance, Andreas ab Habernfeld (physician to the Queen of Bohemia) published his *Hierosolima restituta ad Annum Futurum 1624* in 1622, predicting the imminent recapture of Jerusalem from the Turks. And to step further back, the anonymous English play *A Larum for London* (1602) dramatises the then-recent Spanish sack of Antwerp in order, explicitly, to present London with a possible future narrative of Spanish invasion. Time himself appears as a character on stage exhorting the audience to consider how the future might play out, and insisting that he 'doth wish to see/No heavy or disastrous chaunce befall/The Sonnes of men, if they will warned be' [*A Larum*, 51]. Even further back is the anonymously-authored *Neue Zeitung von einer tapfern Kriegsrüstung in Utopie im Jar 1544* (*New Journal of Valiant New Weaponry from Utopia, in the Year 1544*, 1543), which consists of an itinerary of the imaginary new ordnance soon to be deployed ('*Das spiel ist aber noch nicht aus* [the game is yet to be played]') upon the battleground of the Reformation. And we have already discussed Gott's *Nova Solyma* (1648), a detailed alt-history of 17th-century Palestine with a Jonbar point located around 1600.

There is a larger point to be made here, though. The Copernican and post-Copernican revolutions in science unshackled the creative imagination from biblical rectitude in temporal as well as spatial terms. By opening up realistic cosmological *spatial* scales, these new discourses challenged the chronological

assumptions of European culture. The biblical Old Testament locates the creation of the world a few thousand years ago. After much biblical labour, James Ussher (Archbishop of Armagh and Protestant Primate of All Ireland) dated the creation to 'the entrance of the night preceding the 23rd day of October in the year before Christ 4004'. The New Testament declares that the end of the world is imminent. Neither of these claims is factually accurate. It was in the 17th century (and to a greater degree in the 18th) that understanding of 'long time' underwent a radical shift. Jean de La Bruyère's *Caractères* (1688) looks forward into enormous gulfs of time

Si le monde dure seulement cent millions d'années, il est encore dans toute sa fraîcheur, et ne fait presque que commencer; nous-mêmes nous touchons aux premiers hommes et aux patriarches, et qui pourra ne nous pas confondre avec eux dans des siècles si reculés? Mais si l'on juge par le passé de l'avenir, quelles choses nouvelles nous sont inconnues dans les arts, dans les sciences, dans la nature, et j'ose dire dans l'histoire! Quelles découvertes ne fera-t-on point! Quelles différentes révolutions ne doivent pas arriver sur toute la face de la terre, dans les États et dans les empires! [Even if the world is only to last for a hundred million years, it is still in its first freshness and has barely begun; we ourselves are close to primitive man, and are likely to be confused with them in the remote future. But if one can judge the future in terms of the past, how much is still unknown to us in the arts, in the sciences, in nature and indeed in history! What discoveries are still to be made! What revolutions will surely take place in States and Empires!] [La Bruyère, 107]

Optimism like this was not unprecedented. John Dryden's long poem *Annus Mirabilis* (1667) describes the Great Fire of London in detail, but ends with a lengthy vision of the gleaming future city he was sure would rise from the ashes. But these new vistas of time were more likely to provoke gloom. John Ray's *Three Physico-theological Discourses* (1693) populates the new future's *longue durée* with predictions, foreseeing erosion, rain and flood, and 'the levelling of Mountains' by 'the Courses and Cataracts of the subterraneous Rivers washing away the Earth continually and weakening their foundations, so by degrees causing them to founder, subside and fall in' [294–5]. His conclusion:

The superficies of the whole Earth which is now rough and uneven by reason of Mountains and Valleys and so only rudely Sphaerical is daily from the very beginning of the World reducing to a perfect roundness, in so much that it will necessarily come to pass in a natural way that it be one day overflown by the Sea and rendered uninhabitable. [Ray, 297]

Nor is even this oceanic catastrophe the end of it. Ray believed sunspots to constitute a progressive occlusion, such that

after some vast Periods of Time the Sun may be so inextricably enveloped by the *Maculae* that he may quite lose his Light; and then you may easily guess what

would become of the Inhabitants of the Earth. For without his vivifick heat, neither could the Earth put forth any Vegetables for their sustenance; neither if it could would they be able to bear the extremity of the Cold, which must needs be more rigorous, and that perpetually, than is now under the Poles in Winter time. [Ray, 315–16]

The sublime gloom of this imagined future history resonates by speculating outside the possibilities of biblically sanctioned timescales.

DEVELOPMENTS IN SCIENCE

Earlier in this chapter I laid a certain emphasis on the particular religious component of the cultural logic of the period: the separation of a theological-magical Catholic aesthetic from an imaginative-expansive Protestant one, such that SF begins to emerge under the second ideological umbrella. Its rapid development across the 17th century was linked to a particular, emerging discourse of science. Copernicus' revolution, though apparently limited to cosmological models, in fact gave an (ultimately) unstoppable impetus to new sciences across the range of human enquiry. The shorthand for the distinction is between the traditional scholastic thinkers, who believed that science consisted of the accurate interpretation of traditional authorities, and the newer humanist thinkers who wanted to expand science in original directions.

Many scientists (or, more properly, natural philosophers) of the 16th and 17th centuries worked within an inherited scholastic tradition that was at root neo-platonic. It depended, as Desmond Clarke puts it, on a belief in 'the certainty of necessity of genuine knowledge claims, and on their universality', on 'the claim that our knowledge of physical nature depends ultimately on the reliability of our everyday observations and judgements', and on 'the very widely used distinction' between *matter* and *form*, a distinction that goes back to Platonic and Aristotelian models [Clarke, 259–60]. Forms were thought of as ideal essences, matter as contingent appearance. So (for example) insects come in a profuse variety of shapes, sizes, colours and behaviour whilst still all being recognisable as insects. According to the Platonic model, the common essence that links all insects would be thought of as the *form*, whilst the variable non-essential aspects of actual examples of insect life in the world as the *matter*. A great deal of pre-Enlightenment science involved definition and pronouncement upon the form of things.

René Descartes effectively challenged this scholastic tradition, redefining science in the process. He argued that talking about form was 'both redundant and pseudo-explanatory' [Clarke, 266]. To say, for instance, that a magnet attracts metal because it possesses magnetic form does not go beyond tautology, although such an explanation can give the investigator a false sense of having solved the question of magnetism. Descartes' writings encouraged a shift from the speculative to the practical in science, from essentialist thinking about forms, to thinking about the mechanisms that operated in the physical world,

although he ‘continued to accept the scholastic assumptions that we should construct our metaphysics first’ [Clarke, 281] before proceeding to do science. As he put it in his *Principia Philosophiae* (1644)

The whole of philosophy [today we would say ‘knowledge’] is like a tree. The roots are metaphysics [we would say ‘philosophy’], the trunk is physics [‘general material science’], and the branches emerging from the trunk are all the other sciences, which may be reduced to three principal ones, namely medicine, mechanics and morals [‘biology’, ‘physics’ and ‘ethics’]. [Cottingham et al., 1:187; my glosses]

The more science itself became an empirical, experimental discourse, and therefore the less place the speculative impulse had in the practice of science, the more important science fiction became.

Descartes exercised an immediate and direct influence upon science fiction. The French Jesuit Gabriel Daniel published *Voyage du Monde de Descartes* in 1690 with the specific intention of critiquing Cartesian ideas. The book was quickly translated into English, by Thomas Taylor in 1692, as *Voyage to the World of Cartesius*. Daniel makes reference to Lucian’s fantastical adventures as a precursor, but he uses this device not for free imaginative play, but rather to challenge ‘*l’hypothèse de [Descartes] tourbillons, qui est cependant le fondement de tout ce qu’il enseigne touchant le mouvement des planètes, [et] le flux et le reflux de la mer* [his hypothesis of vortexes, which is the foundation of all his teaching about the movements of the planets and the tides]’ [Daniel, p. 8]. Most of the volume is a dry discussion of the particulars of Cartesian philosophy, and the ways they confirm or deny Religious orthodoxy. The protagonists eventually travel to a third heaven postulated by Descartes, although how they do so is not described: ‘*Je ne vous dirai rien du détail de ce voyage. J’espere dans quelques jours vous le faire faire à vous-même* [I won’t tell you any details about this voyage. I hope in a few days you’ll undertake it yourself]’ [Daniel, p. 56]. They walk for a long time in the ‘*grands déserts de l’autre monde*’, which represent (we are told) the chaos of Cartesian thought, and have lengthy conversations about Cartesian science, and finally convince him that his theoretical ‘*tourbillons*’ are not the true explanation for cosmic activity. In place of a materialist explanation of the cosmos, Daniel retreats to a Catholic doctrinal one: for example, the physical translation of narrator to this distant world is, he insists, akin to the translation of divine substance in place of bread at the Catholic sacrament (p. 70). The point here is (in the words of James Sutherland) that ‘Descartes came under criticism’ by many thinkers, precisely ‘because his theory of vortices was thought to support a merely mechanical conception of physical law, and to leave no scope for divine will to operate’ [Sutherland, 377]. Even at the end of the 17th century the religious anxieties of Copernicus’s revolution still haunted scientific, and science-fictional, exploration. They would continue to do so as the genre developed.

NOTES

1. 'Si in hoc globo vites provenirent, an vinum quod ex illis producitur, an vinum quod ex illis producitur, in usum S Eucharistiae adhiberi posset?'
2. These numbers are cited to give a sense of relative proportions, not absolute numbers: the figure of 21 texts only includes works published in other languages if they were translated into English during this time; if we include continentally published works the number would double. Salzman's complete breakdown is as follows: 1. Elizabethan fiction (105 titles); 2. Sidnean Romance and additions to Sidney's *Arcadia* (16 titles); 3. 'Attenuated' Short Romance (6 titles); 4. Continental Romance, including adventure romance and pastoral romance (15 titles); 5. Didactic Romance (10 titles); 6. Political/Allegorical Romance and Religious Allegory (23 titles); 7. Didactic Fiction (21 titles); 8. French Heroic Fiction (15 titles); 9. Jest-Books (15 titles); 10. Criminal Biography (23 titles); 11. Imaginary Voyage/Utopia/Satire (20 titles); 12. Picaresque Fiction (24 titles); 13. Popular Chivalric Romance (26 titles); 14. Popular Compilations of History (9 titles); 15. Anti-Romance and 'Impure' Romance (18 titles); 16. The Novella (17 titles); 17. Memoirs (11 titles); 18. Scandal Chronicles/Secret Histories (17 titles); 19. Nouvelle Historique and Nouvelle Galante (72 titles); 20. The Political/Allegorical Novel (9 titles); 21. Oriental Tales (15 titles); 22. Restoration Novel (58 titles); 23 Popular Non-Chivalric Fiction (34 titles).
3. One antecedent for this work may have been *Les Hermaphrodites* (1605), a satirical dystopia by Thomas Artus in which a hermaphroditic society is located on a floating island. Kathleen P. Long's *Hermaphrodites in Renaissance Europe* (2006) traces the development of hermaphrodite fables and utopias out of the Renaissance fascination with alchemy, where double-sexed individuals were symbolic of the conjunction of elemental and chemical forces.
4. The most important newspaper of the English Civil War was the *Mercurius Aulicus* (established January 1643). Dozens of books were published in the 17th century under the Aulicus rubric, from Eberhard von Weyhe's *Aulicus Politicus* (1615) through William Sanderson's *Aulicus Coquinariae* (1650) and beyond.

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Eighteenth-Century SF: Big, Little

In the 18th century science fiction expanded from a small-scale literary sub-culture of scientific and utopian-social speculation into something more substantial and imposing. Eventually it would grow to dominate the European and American cultures that birthed it, but that is to look ahead. What we have in this century is a genre beginning to come into its own as the correlative of Enlightenment cultural discourse. Bigness and its inverse ratio, smallness, prove to be the dominants.

By Enlightenment, critics and historians of ideas mean a mostly 18th century philosophical consensus that agreed on the primacy of reason and the importance of experimental and evidential science, and which challenged older religious myths and superstitions. This movement gained much of its initial impetus from the scientific advances associated with figures such as Newton and Leibniz; and by 1784—when Immanuel Kant published his essay ‘Beantwortung der Frage: Was ist Aufklärung?’ [‘Answering the Question: What Is Enlightenment?’]—it was a well-established enough term to have become a contested notion. Kant’s answer to his own question, incidentally, was *intellectual maturity*: ‘the emancipation of the human consciousness from an immature state of ignorance and error’ (Porter 1; see also Deligiorgi). Other thinkers have seen *die Aufklärung* in less ideologically neutral terms. According to Jonathan Israel, it was the function of a broad radicalisation of political debates during the period, while Isaiah Berlin considers it a ‘fundamental type of approach to social and political problems,’ the approach in question being ‘rational and sentimental’ (183). Jonathan Rée usefully summarises:

There might be dozens of alternative histories of the present age, but they all intersected at some point in the 18th century known as the Age of Reason, or more vividly the Enlightenment (or *le siècle des lumières*, *die Aufklärung* or *l’illuminismo*). Essentially, the Enlightenment was taken to be Europe’s concerted effort to cleanse itself of the last residues of barbarism and medieval superstition and replace them with liberalism, science and secular philosophy. (21)

All of these last-named qualities, we can note, are eminently science-fictional—although most contemporary critics would argue that superstition and myth aren't so much cleansed as repressed and reconfigured, in both Enlightenment thought and in SF.

Complex though arguments about the nature of the Enlightenment may be, it is worth isolating one key term, reason, newly conceived as systematic knowledge or totalisation. It is this ideal that is most indicative of an Enlightenment world view, which in turn shapes a particular logic of science fiction as a systematic or quasi-systematic elaboration of the novum. Reason is both suddenly very big (that is, universally totalising), and very small (which is to say narrow). Max Horkheimer and Theodor Adorno's influential monograph *Dialektik der Aufklärung* (*The Dialectic of Enlightenment*, 1947) styles the 'Enlightenment program' as 'the disenchantment of the world,' a movement 'to dispel myths, to overthrow fantasy with knowledge' (1). They add that 'technology is the essence of this knowledge' (2), which in turns means that the imaginative literature of the period can look forward with sometimes uncanny prescience to 20th and 21st century saturations of technological innovation: 'The "many things" which, according to Bacon, knowledge still held in store are themselves mere instruments: the radio as a sublimated printing press, the dive bomber as a more effective form of artillery, remote control as a more reliable compass' (2). We could replace radio, dive bomber, and remote control with more science-fictional versions such as ansible, X-Wing fighter and cyborg wetware. On a purely imaginative level, the technical fixtures articulate the same root exhilaration—and anxiety—at the heart of Enlightenment culture.

Horkheimer and Adorno are sometimes summarised as arguing that the Enlightenment world view can be traced in a direct line from the 18th century to Auschwitz (as they say, 'Enlightenment is totalitarian' [4]); but their thesis is a little more complicated than that. Indeed, not despite but *because* of its totalising ideological impulse, Horkheimer and Adorno see the Enlightenment as deeply conflicted and contradictory. The dialectic of the book's title is not mere window dressing, as they put it: 'myth is already enlightenment, and enlightenment reverts to mythology' (xviii). And although the *Dialectic of Enlightenment* is not specifically interested in SF, we can extrapolate precisely this insight into a critique of science fiction—a mode that, even today, is simultaneously the articulation of enlightened values of reason, science and knowledge, *and* powered by an immanent quasi-mythic cultural subconscious. SF is exhilarated by and superstitiously fearful of technological advance, or alien life, or the scale of the cosmos. *Scientia*, the Latin behind the first term in the genre's brand name, means knowledge; but science fiction is really only a knowledge fiction in a mythological sense. Horkheimer and Adorno observe that '[h]umans believe themselves free of fear when there is no longer anything unknown. This has determined the path of demythologization'; but 'Enlightenment is mythical fear radicalized' (11).

In the 18th century, as today, this fear of the unknown manifests very often as a fear not just of unexplored topographies but of previously unencountered peoples—to use the SF terminology, of the alien. It will not surprise us, indeed,

that the imaginative extrapolation of Enlightenment writers tends both to celebrate and to satirise imperial expansion, to be both excited by and suspicious of the possibilities of technology and its implementation in the world. More importantly, there is a deeply embedded fascination with shifts of scale in much 18th-century SF, of which arguably the two most important are Swift's *Gulliver's Travels* (1726) and Voltaire's *Micromégas* (1752). It is no coincidence that both works are based upon seeing the universe anew in terms of the very large and the very small.

Nor are they alone in this. A great many Enlightenment works find the macroscopic and the microscopic to be new imaginative resources of wondrous possibility, as well as of satirical precision. This has to do, I think, with two things. First, various new scientific discoveries and inventions had revealed that the universe is incomparably huger than had been previously thought. It also revealed that whole ecosystems existed far too small for the unaided eye to see. But there is both a metaphorical and an empirical dimension to this new fascination with scale; knowledge itself, the cornerstone of Enlightenment praxis, had been reconceptualised as something simultaneously very large and very small—the vast overall project of total knowledge, combined with the endless minutia of accumulated data. As Kant put it in his Enlightenment essay, rationality consists in ‘processes of ascending to the higher genera and of descending to the lower species [by which] we obtain the idea of systematic connection in its completeness’; the resultant systematisation of knowledge lying in ‘the connection of its parts in conformity with a single principle’ [Horkheimer and Adorno, 63].

Here are two contemporary examples to illustrate these two new modes of scale. The first is Dutch scientist Bernard Nieuwentyt's 1715 work *The Religious Philosopher: or the Right Use of Contemplating the Works of the Creator*. Nieuwentyt calculates that ‘a Cannon-Bullet will require 26 years in passing from hence to the Sun, [and] with the same Velocity wherewith it was discharged, it would require, in order to arrive at the fix'd Stars ... almost Seven hundred thousand Years; and a Ship that can sail 50 miles in a Day and a Night, will require 30,430,400 Years’ [Nieuwentyt, 819]. The 700,000 years figure was widely cited by other 18th-century thinkers, emphasising the sheer scale of the new Copernican cosmos.¹ This sense of limitless astronomical vistas played a key role in the resurgence of interest in the sublime or, to give it its SF name, sense of wonder. The second example, a key Enlightenment text, is the *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers* (1751–1772) edited by Denis Diderot and Jean le Rond d'Alembert. This was a genuinely ambitious attempt to synthesise and summarise all that was known. As Isaiah Berlin puts it, ‘the 18th-century was perhaps the last period in the history of Western Europe when human omniscience was thought to be an attainable goal’, and when almost all thinkers, despite their disagreements, agreed that ‘the truth was one single, harmonious body of knowledge’ the acquisition of which would solve humanity's problems [Berlin, 14]. This *Systematic Dictionary of the Sciences, Arts and Crafts* makes no bones about

the work's totalising ambition; it eventually ran to 28 volumes, weathering difficulties created by its perceived radicalism and impiety [see Blom, 283–302].

We might want to argue that, conceptually and formally, science fiction possesses an encyclopedic logic—or, more precisely, that its synchronic encyclopedic impulse exists in dynamic tension with its diachronic narrative impulse. One of SF's main activities is world-building, a totalising project that is often reified into appendices, maps, glossaries, and even—with many of the most popular works of 20th and 21st century SF—a whole paratextual sub-culture of guides, handbooks, encyclopedias, and wikis. But SF *embodies* its world-building, to varying degrees of aesthetic elegance, in terms of story, character, form and style. Not for nothing did Isaac Asimov make the compiling of a huge *Encyclopedia Galactica* the conceit behind his most influential work, the Foundation series (1942–1993); the accumulation of knowledge in that story is both a disinterested project of research and synthesis *and* the covert elaboration of a strategy of galactic-scale social reform—just as with the original *encyclopédistes*.

SF's fascination with other worlds, aliens and the interplanetary fantastic voyage comes most fully into its own during the Enlightenment period. The *Encyclopédie* entry on World raised the question of whether extraterrestrial planets might be inhabited, citing Bernard Le Bovier de Fontenelle's 1686 book on the plurality of worlds, which had inspired, as we saw in the last chapter, so much debate and controversy.

M. de Fontenelle a le premier prétendu que chaque planete depuis la lune, jusqu'à saturene, étoit un monde habité, comme notre terre L'auteur se met à couvert des objections des Théologiens, en assurant qu'il ne met point des hommes dans les autres planetes, mais des habitans qui ne sont point du tout des hommes. ... Après tout, pourquoi cette opinion seroit-elle contraire à la foi? L'Ecriture nous apprend, sans doute, que tous les hommes viennent d'Adam, mais elle ne veut parler que des hommes qui habitent notre terre. D'autres hommes peuvent habiter les autres planetes, & venir d'ailleurs que d'Adam. [M. de Fontenelle was the first to suggest that each planet from the Moon to Saturn is an inhabited world, like our Earth. He attempted to address the objections of theologians by pointing out that he was not insisting that there are men in these other worlds, but rather beings quite unlike men. ... After all, why should this opinion be considered contrary to religion? Scripture makes it clear that all men are descended from Adam, but it is only speaking of the men who inhabit *our* world. Other kinds of men might inhabit the other planets, and be descended from other points of origin than Adam.] ['Monde', *L'Encyclopédie* (1re édition/Volume 10)]

A degree of defensiveness is detectable here (the entry ends on a note almost of abdicated intellectual responsibility: '*Que faut-il donc répondre à ceux qui demandent si les planètes sont habitées? Qu'on n'en sait rien.* [How to answer those who ask if other planets are inhabited? Only that *we don't know*]'). It is true, as A J Meadows notes, that 'the early 18th-century' in Europe 'saw an almost universal acceptance of a belief in a plurality of worlds' [Meadows, 126]; but accepting plurality is not the same as accepting an inhabited plurality. At

any rate, the 18th century saw a sudden flurry of narratives that imaginatively explored this new cosmos—Bonamy Dobrée describes the new astronomy as releasing ‘a terrific tidal wave of imaginative description, phosphorescent with wonder’ [Dobrée, 80]—but it’s also true that in almost all these works, the authors struggle hard to find consonance between wonder and piety. For example, Richard Blackmore’s *Creation: A Philosophical Poem Demonstrating the Existence and Providence of a God* (1712) is a seven-book epic poem designed to refute atheists, but its most powerful sections look outward, to the cosmos science was discovering, rather than backward to Milton and Genesis:

Th’expanded Spheres amazing to the Sight,
Magnificent with Stars and Globes of Light;
The Glorious Orbs, which Heav’n’s bright Host compose [Blackmore, 5]

Interestingly, Blackmore takes the situation of Earth’s orbit in what we now call the Goldilocks zone (that is, the ideal distance from the Sun to sustain a climate and atmosphere conducive to life) to be proof of divine providence—so far as I know, the first person to discuss this question. Had, he says, the Earth occupied the orbits of Jupiter or Saturn ‘Unsufferable winter, had defac’d/Earth’s blooming Charms, and made a barren Waste’; this vision of a Plutonian Earth, in the grip of ‘Eternal Frost, with Ice that never flows’ (40) has a genuine sense-of-wonder chill about it.

Samuel Boyse’s *Deity: A Poem* (1739) adopts the imperative voice (‘Go!—all the sightless realms of space survey,/Returning trace the *Planetary Way!*’ [Boyse, 23]), assured that the contemplation of so large a prospect will nurture our religious awe. William Derham’s *Astro-Theology, or a Demonstration of the Being and Attributes of God from a Survey of the Heavens* (1714) makes the argument that divine utility must mean the planets are inhabited: ‘what is the use of so many Planets as we see about the Sun, and so many as are imagined to be about the Fixt Stars ... [unless] they are *Worlds*, or Places of *Habitation*’ (xlvii; emphasis in original)? This judgment, as his rather touchy ill-temper makes plain (‘this Conclusion is so natural, so cogent, that any thing but *stupid prejudiced Blockheads* ... would have naturally and easily made it’ [Derham 75]), manifests a degree of wishful thinking. Unlike the Ptolemaic system, so comfortably populated by Dante, this new universe is frankly *too* big, ontologically hostile to the scale of human living. On the one hand, surely God has created the profusion of stellar bodies for a reason; on the other hand, science shows that most of this vast cosmos is egregiously inhospitable to human life. Henry Baker’s *The Universe: A Philosophical Poem* (1729) speculates about Saturnians living on a world where ‘our Poles’ are warmer than ‘its burning Zone’:

Who, there inhabit, must have other Pow’rs,
Juices, and Veins, and Sense, and Life than Ours.
One Moment’s Cold, like their’s, would pierce the Bone,
Freeze the Heart-Blood, and turn Us all to Stone. [Baker, 18]

This groping towards actually alien aliens is the very stuff of modern SF, and a completely new note not present in earlier fantastic voyages.

David Mallet's *The Excursion* (1728) propels the narrator into a cosmos teeming with alien life:

Ten thousand Suns blaze forth; each with his Train
Of peopled Worlds; all beneath the Eye,
And sovereign Rule of one eternal Lord. [Mallet, 49–50]

Indeed, 'ten thousand' is so patently an underestimate that a little later he corrects himself:

stupendous Host!
In flaming Millions thro' the Vacant hung,
Sun behind Sun, with Gulphs of Sky between. [62]

Nevertheless, the impression Mallet's poem gives of outer space is chilly. Travelling to the edge of things ('last, outmost *Saturn* walks his Frontier-Round/The Boundary of Worlds; with his pale *Moons*,/Faint glimmering thro' the Gloom' [57]), he looks back at the Sun, once an 'Ocean of Flame' that now only 'twinkles from afar,/A glimmering Star amid the Train of Night!' (64). Here the beauty outweighs the terror, but as Mallet shifts into sublime mode, the tenor of his work becomes less comfortable still:

While in these deep Abysses of the Sky,
Spaces incomprehensible, new Suns,
Crown'd with unborrowed Beams, illustrious shine....
Myriads beyond, with blended Rays inflame
The *Milky Way*, whose stream of azure Light,
Pour'd from innumerable Fountains round,
Flows trembling, from Wave on Wave, from Sun to Sun [Mallet, 64]

The narrator is overwhelmed by the unimaginable vastness of these cosmic processes, where worlds are born and die unceasingly:

Dazzling the view; here nameless Worlds afar,
Yet undiscover'd: there a *dying Sun*,
Grown dim with Age, whose Orb of Flame extinct,
Incredible to tell! ...
Millions of Lives, that live but in his Light,
With Horror see, from distant Spheres around,
The Source of Day expire, and all his Worlds
At once involv'd in everlasting Night! [Mallet, 66]

This splendidly rebarbative portrait of wholly alien life-forms facing the termination of their world takes much of its force from its cool distance from the more familiar religious conventions of the Apocalypse.

Newton's eminence as a scientist, and the novelty of the world-view he elaborated, gave inspiration to a crowded school of scientific poets who stand in the margins of the development of SF. James Thomson, after Alexander Pope the leading poet of his age, wrote a poetry that was, in the words of Bonamy Dobrée in 'thralldom to Newtonian physics' [Dobrée, 482]. Thompson's early panegyric 'A Poem Sacred to the Memory of Sir Isaac Newton' (1727), published a year after the scientist's death, was the first of a great many Newtonian verse-fictions. Richard Glover (1712–1785) a merchant and MP, wrote 'A Poem on Newton' (1728) in which he asserted that 'Newton demands the Muse ... [he] shall raise her to the Heliconian height,/Where on its lofty top enthron'd, her head/Shall mingle with the stars'.² This anticipation of sublime possibilities in linking science and literature was only intermittently justified in the decades that followed. Often Newtonian science-poetry strayed into bathos as it attempted imaginatively to recreate scientific knowledge. This from *The Universe* (1752) by Moses Browne:

Convenient Form, that round his *central Sun*
The circling Planet might his period run;
That purging *Tides* might unresisting flow,
And seasons change, and genial Breezes blow;

An authorial footnote explains that seasons and breezes depend upon the deviation of the Earth's axis from the angular plane. This sort of deadening apprehension of contemporary science also informs the poetry of John Reynolds (1667–1727) who was deeply struck that planets remain in 'this elliptic Race,/Nor gallop out into the Fields of Neighb'ring Space' [*A View of Death, represented in a Philosophical Poem*, 1725].

But Newton—a fiercely devout religious man—in addition to being the icon of the rationalist New Science, was also fascinated throughout his life by alchemy. The same SF dialectic between reason and magic filters through into some of the Newton poetry of the age. Samuel Edwards' poem *The Copernican System* (1728) attempts to blend Newtonian physics with astrological mysticism. In the same year John Theophilus Desaguliers (1683–1744) made plain in his title the hierarchical political agenda of his epic *The Newtonian System of the World, the best Model for Government. An Allegorical Poem* (1728). Bowden's 'A Poem Sacred to the Memory of Sir Isaac Newton' (1735) imagines the now deceased scientist's soul travelling through the solar system, stopping to observe wonders on the way.

Mark where he halts on Saturn, tipt with snow,
And pleas'd surveys his theory below;
Sees the five moons alternate round him shine,
Rise by his laws, and by his laws decline,
Then thro' the void takes his immortal race,
Amidst the vast infinity of space. [Meadows, 117]

This mystical-religious trope of souls touring the *material* solar system ('Saturn tipt with snow') was to become particularly popular in the later 18th and 19th centuries.

SWIFT'S *TRAVELS*

The two key SF texts of the age were both written before a third of the century had passed: *Travels into Several Remote Nations of the World* (commonly known as *Gulliver's Travels*, 1726) by Jonathan Swift, and Voltaire's *Micromégas* (written 1730, published 1750). What these two works articulate is something crucial about SF itself. The many other *voyages extraordinaires* that were published during the century (discussed below), although often interesting, do little more than add marvels to a traditional narrative framework. Swift and Voltaire, however, rewrite the rules of imaginative speculation, freeing it both from the choking literalism of science poetry and from the deadening constraints of conventional religious thought.

Swift's *Travels* remains one of the most famous novels of the 18th century. The book's narrator, Lemuel Gulliver, afflicted with a mania for travel, leaves England and sails the world. Shipwrecked on the island of Lilliput, Gulliver discovers a kingdom of people 'not six inches high' [Swift, *Travels*, 55–56]. He takes the Lilliputian side in their war with the equally diminutive Blefuscians. He puts out a fire in the royal quarters by pissing on it, and in doing so, despite saving the palace and many lives, falls into disfavour at the court for rendering the royal person urinous. The king decides his punishment must be to put out his own eyes, and to avoid this fate Gulliver leaves the island, eventually returning to England. In the second volume, Gulliver travels again, this time to the land of the Brobdingnags where everything, including the inhabitants, is twelve times as large as conventional humanity. In the third volume, Gulliver sets out on a new voyage, and encounters a number of new lands, such as Balnibarbi over which a magnetically powered flying island called Laputa hovers. The fourth and final volume sees Gulliver encountering a utopian race of sapient horses, the Houyhnhnms.

Critics today are divided over whether it is proper to call Swift's *Travels* science fiction. For Brian Aldiss, the work 'does not count as science fiction, being satirical and/or moral in intention rather than speculative' [Aldiss, 81]—a strange reason to exclude it, we might think, since there is a great deal that is speculative about the book; and satire and speculation are by no means mutually exclusive. Kingsley Amis thought the difficulty in calling Swift's novel science fiction was that 'there is no science (or technology) as such in the first two parts'. He suggests ways in which this 'problem' might be remedied:

The Lilliputians perhaps represented as the fruits of an experiment in genetic microsurgery, the Brobdingnagians as those of mutation—though when one comes to think of it the births of the first-generation of Brobdingnagian babies to normal-sized mothers would raise acute difficulties. [Amis, 12–13]

Amis' attitude reflects a widespread critical misunderstanding that takes the book to be unscientific ('there is no science (or technology) as such'), or even *anti*-scientific. The latter reading is common enough, and is advanced by critics who contrast the absurdity of life aboard the flying island of Laputa (in part 3), where the inhabitants are devoted to natural philosophy, and the purity of life amongst the Houyhnhnms (the equine utopians of part 4), who are so removed from science that they have not even discovered metallurgy. But it needs to be stressed that not only is Swift's great novel *inherently* science fictional, all four parts are deeply imbued with science, to such a degree that it becomes hard to avoid reading the book as being *about* science, or more particularly about the relationship between science and representation. Which latter phrase might function as a shorthand definition of science fiction itself.

Such a reading, I should add, is at odds with most critical analyses of the book. The most common interpretation of Swift's *Travels* sees it as being 'about difficulties of identity and problems of judgment' [Erskine-Hill, 3]. It is almost a commonplace amongst critics that Gulliver's wide-ranging travels in the external world are actually internal explorations of the individual psyche and 18th-century codes of subjectivity. In Terry Eagleton's opinion, the world explored by Gulliver is actually Gulliver himself, and his travels reveal himself to himself as 'an area traversed and devastated by intolerable contradiction' [Eagleton, 58]. This reading of *Travels* as an ideological text has a great deal to recommend it. So the Lilliputians, for instance, are read as a satire upon the small-minded inwardness of Western court politics, with wars fought over which end of the egg to break when eating it, and political office won by those able to jump the highest.

But this is not the whole picture. Gulliver has nothing but praise for most of Lilliput's affairs: he admires the way that 'they look upon fraud as a greater crime than theft'; the way the law not only punishes delinquency but actively rewards virtue (anyone who obeys all the laws for 'seventy-three moons' can claim certain privileges and is paid money out of the public purse); and the way the children are bred up 'in principles of honour, justice, courage, modesty, clemency, religion, and love of their country' [Swift, *Travels*, 94–97]. In other words, Swift's portrait of Lilliput engages *at one and the same time* in satirical mockery and quasi-utopian celebration. The same is true of the Brobdingnagians, a people from whom Gulliver receives wisdom and insight such that, at the end of the book he adjudges them 'the least corrupted' of the Yahoo-humans he has encountered [Swift, *Travels*, 341]; although in their land he also suffers from court intrigue, is an unwilling participant in lechery and lives as a prisoner and freak to be exhibited.

Despite Amis' assertion that 'there is no science' in the first two parts of the novel, Swift returns to a number of scientific and technical discourses. The Lilliputians, for instance

are most excellent mathematicians, and arrived to a great perfection in mechanics by the countenance and encouragement of the Emperor, who is a renowned patron of learning. This prince hath several machines fixed on wheels for the car-

riage of trees and other great weights. He often buildeth his largest men-of-war, whereof some are nine-foot long, in the woods where the timber grows, and has them carried on these engines three or four hundred yards to the sea. [Swift, *Travels*, 61]

The first two parts of Swift's novel not only represent mathematics, they *embody* it, and engage the reader in a continual process of multiplication and division that works through this particular scientific method. As soon as the six-inch archer appears on Gulliver's chest, which is to say as soon as we readers understand that Lilliput has the dimensions of a one-twelfth scale model of a conventional-sized kingdom, and that Brobdignag a twelve-times scale, then maths becomes core to our appreciation of the narrative.

Despite being excellent mathematicians, and very capable with machinists, the Lilliputians have not encountered clockwork, and they react with bemusement on discovering Gulliver's pocket-watch. The Brobdignagians do possess clockwork, which technology is apparently raised to 'very great perfection' [Swift, *Travels*, 142]; but they lack military ordnance, and Gulliver tries, and fails, to interest the king in metal cannon fired by gunpowder. In other words, these various sciences, embodied by Swift in his fiction, relate back to one science in particular: naval navigation. The Lilliputians, for instance, are represented as either expert or else innocent of a range of sciences, all of which specifically relate to the business of navigation. Similarly, the analogies Gulliver uses to describe Brobdignagians are mostly drawn from the world of shipping—unsurprisingly, perhaps, given that an early 18th-century writer looking for correlatives to great size would naturally look to nature, architecture or shipping, and that only the last of these categories combines great size with mobility.³ The Brobdignagians possess excellent maps, in addition to having mastered mathematics and 'all mechanical arts' [Swift, *Travels*, 176], but they lack even the basic knowledge of the sort of armament a British ship of the line would carry as a matter of course. This encourages us to read *Travels into Several Remote Nations of the World* along the lines its title suggests; not (as the vulgarisation of that same title, *Gulliver's Travels* prompts us) as being about Gulliver himself, whether as bourgeois subjectivity or cipher for Swift, but as about *travelling* into *remote* parts of the world. The science in this 18th-century science fiction is the science of ocean navigation that enabled Swift's contemporaries to travel to places practically further away and less-well known than was effectively the case for those 1960s Americans who travelled to the Moon.

The third part of *Travels*, 'A Voyage to Laputa', is more obviously concerned with science. Gulliver is taken aboard a floating island, and discovers it populated with a culture of scientists so entirely caught up in speculative astronomy that they have lost touch with reality. They can only converse when servants, 'flappers', knock their mouths with little bladders, and only pay attention to what is said to them when these same flappers knock their ears. Their scientific studies have created in them enormous disquietude:

Their apprehensions arise from several changes they dread in the celestial bodies. For instance: that the Earth by the continual approaches of the Sun towards it, must in course of time be absorbed or swallowed up. That the face of the Sun will by degrees be encrusted with its own effluvia, and give no more light to the world. That the Earth very narrowly escaped a brush from the tail of the last comet, which would have infallibly reduced it to ashes. [Swift, *Travels*, 206]

Meanwhile their houses are poorly built and their wives have sex with strangers. As satire of a particular type of intellectual, externalising the tendency of thinkers to ‘have their heads in the clouds’ by imagining a whole city that is literally up in the sky, this is effective, if not subtle. But Swift goes to some pains to rationalise his fantasy island. Its mechanism for flight is a ‘loadstone ... in shape resembling a weaver’s shuttle ... in length six yards, and in the thickest part at least three yards over’. The island of Balnibarbi, over which Laputa flies, is made of a particular stone which this loadstone forcibly attracts or repulses, depending on its orientation—a reasonable extrapolation from the then-new science of magnetism. This more technically described SF novum relates, nonetheless, to the underlying ideological factor of the novel. It functions as an imaginative translation of the ocean-going ship, the ‘wooden world’ that carries an entire society with it as it goes. Translated into allegorical terms, the flying island is a fantastic extrapolation of the British fleet, an expensive aspect of the same Standing Army of which Tory Swift disapproved.

This is true both in terms of the totalising scientific aspirations of the age, and in its burgeoning totalitarian imperialism. Swift ends his novel with the rather plaintive appeal that ‘those countries which I have described do not appear to have any desire of being conquered, and enslaved, murdered or driven out by colonies’ [Swift, *Travels*, 344], but his rationale for wanting his discoveries left inviolate is unconvincing, deliberately so we may assume. For instance, he claims that the countries he visits do not abound in gold, although the Brobdingnagians for one use myriad gold coins ‘each piece being about the bigness of eight hundred moidores’ [Swift, *Travels*, 140]. More to the point, it requires a sort of blindness of imperial ideological logic to argue, as Swift ironically has Gulliver do, that ‘the Lilliputians, I think, are hardly worth the charge of a fleet and army to reduce them’, or to imply that the Brobdingnagians and Houyhnhnms would be too formidable as opponents, despite having already established that neither people possess the destructive technologies of artillery or explosives [Swift, *Travels*, 342–3]. We read past the end of the novel, following its own logic and applying our sense of the ideological conditions of early 18th-century Europe, and we see colonisation, exploitation, expropriation, slavery and death visited upon Lilliputians, Brobdingnagians and Houyhnhnms alike. Such is, of course, one of the key facets of the scientific rationalism of Swift’s age. The Enlightenment world view is, with devastating straightforwardness, a view of the whole world as open to conquest, colonisation and immiseration—in the name precisely of reason, liberty and the perfectibility of mankind. In this regard, science fiction remains one of its principal

heirs (see Csicsery-Ronay and Rieder). In both discourses, the universe has become simultaneously much bigger and much smaller, and the imaginative vertigo of that state of affairs is as relevant today as it was then.

Swift's novel was immensely successful and influential. Pope wrote five poems based on its episodes; unauthorised editions, translations and sequels proliferated across Europe. Many of these latter proved disposable, although Pierre Guyot-Desfontaines' *Le nouveau Gulliver, ou voyage de Jean Gulliver, fils du capitaine Gulliver* (*The New Gulliver, or the voyages of John Gulliver, Captain Gulliver's son* 1730) is a cut above. Desfontaines, an Abbé, carries Swift's voyage on: to lands where people, despite being born old and dying 'de bonne heure', live with greater intensity and force than we do ('vivent néanmoins en quelque forte plus longtemps que nous'; [Desfontaines 14]); to the lands of Emperor Dossogroboskow where ugliness is prized and beauty spurned; to the people of the Island of Letalispons who achieve immortality by repeated rejuvenation treatments. Inventive, absorbing and wholly in the spirit of Swift, a repeated theme of *Le nouveau Gulliver* is the sort of micro- or macro-expansion of human *time* that the original novel enacted upon human corporeality.

LITTLE AND BIG: VOLTAIRE'S ALIENS

The first microscopes began appearing at the end of the 16th century, although microscopy didn't become fully an aspect of scientific discourse until the 1640s, when works such as the sumptuously illustrated *Micrographia* (1642) of Robert Hooke created a sensation. But the discursive and imaginative possibilities of this miniaturising shift in scale began to inflect science fiction much earlier than this. One starting point might be Joshua Barnes' *Gerania* (1675), an adventure story located upon a hitherto hidden 'great lake on the utmost Borders of India' [1], which introduces the idea of a miniaturised population of which Swift and Voltaire went on to make such potent imaginative use. In Barnes' titular kingdom, the narrator encounters tiny people who not only are 'able in all the sciences' but also speak English—indeed, they are 'skill'd in fifty four Languages; a thing, which to the Europeans may seem incredible' (48). Barnes' British-Tory ideological biases inform his imagination. His miniature Geranians are, improbably, not only Christians but Protestants, with a deep animus against Jesuits; they have no taxation, instead the population spontaneously gift the exchequer with voluntary donations. But the thoroughness with which Barnes elaborates his imagined world makes it live with more than merely satirical vividness. Another example is George Psalmanazar's *Description of Formosa* (1704), this fictional account of a strange society upon a far eastern island was believed by many to be true, a fact upon which its mysterious author capitalised (see Keevak).

The thing to stress is the extent to which such satirical-fantastic extrapolations were interpenetrated by contemporary discourses of science. Indeed, the Enlightenment is arguably the last epoch in which scientific and literary texts

could be essentially the same thing. John Armstrong's long poem *The Art of Preserving Health* (1728), often reprinted, was as highly regarded by medical specialists as by literary critics. What is interesting about it for our purposes is the way it makes the human body itself the ground of an Enlightenment fascination with miniaturisation. Armstrong's post-Harvey imaginative realisation of blood flow turns a simple, indeed universal, dynamic—the operations of the human corpus—into a narrative of the collapse of a beautifully realised alien landscape:

The blood, the fountain whence the spirits flow,
 The generous stream that waters every part,
 And motion, vigour, and warm life conveys
 To every particle that moves or lives;
 This vital fluid, thro' unnumber'd tubes
 Pour'd by the heart, and to the heart again
 Refunded; scourg'd for ever round and round;
 Enrag'd with heat and toil, at last forgets
 Its balmy nature; virulent and thin
 It grows; and now, but that a thousand gates
 Are open to its flight, it would destroy
 The parts it cherish'd and repair'd before.
 Besides, the flexible and tender tubes
 Melt in the mildest, most nectareous tide
 That ripening nature rolls; as in the stream
 Its crumbling banks; but what the vital force
 Of plastic fluids hourly batters down,
 That very force, those plastic particles
 Rebuild: So mutable the state of man. [Armstrong, 4]

This depiction not only anticipates Erasmus Darwin's attempts to meld epic poetry with biological instruction, it is also a forerunner of works like the 1966 SF film *Fantastic Voyage*, in which a group of miniaturised doctors are injected into a patient's bloodstream. As in Swift's *Gulliver*, the human body itself is contracted or expanded to become a whole world.

The point is that in the best fantastic fictions of the era, the satire does not overwhelm the imaginative possibilities of the mode. Voltaire's *Micromégas* (*Littlebig*, written 1730, published 1750) is a perfect example. On the one hand, it is a satirical positioning of the things we consider important in order to show how trivial such things are on a cosmic scale. But it is more than just that; like Swift's *Travels*, by which it was directly inspired, it generates a memorable imaginative surplus, lifting off into the spheres of wonder that animate the best SF.

Micromégas, the protagonist, is a gigantic alien from the star Sirius, eight leagues (five kilometres) tall. He travels through the galaxy, befriending a native of the planet Saturn who is only a thousand fathoms high, a mere pigmy beside the protagonist. Together these two travel to Earth where they encoun-

ter a shipload of philosophers who are returning from an exploratory voyage to the Arctic Circle. Micromégas lifts the ship out of the ocean and examines the people aboard. Once the two extraterrestrials have got over their amazement that such '*insectes invisibles*' could possess intelligence and soul, they enter into conversation with them. The aliens question the philosophers on matters of physics—the distance from the Earth to the Moon, the weight of the Earth's atmosphere—and are impressed at humanity's knowledge of these matters. But when Micromégas extends the questions to inner matters ('*dites-moi ce que c'est que votre âme, et comment vous formez vos idées* [tell me about the nature of your soul, and how you form your ideas]', *Micromégas* 111) the philosophers reveal a multitude of conflicting theories, '*de Descartes ... de Malebranche ... de Leibnitz ... de Locke*'. Further questioning reveals man's essential ignorance. '*Mais qu'entends-tu par esprit?*' asks Micromégas of the Cartesian ('What do you understand by *spirit*?'); the human replies '*que me demandez-vous là ... je n'en ai point d'idée* [why are you asking me that? I've no idea]', *Micromégas* 111). Another thinker promises that everything to do with souls is to be found in the *Summa* of Thomas Aquinas, assuring the two extraterrestrial giants that they themselves, their worlds and stars, were all made '*uniquement pour l'homme* [solely for mankind's benefit]'. At this, Micromégas and the Saturnian '*se laissèrent aller l'un sur l'autre en étouffant de ce rire inextinguible* [fell over one another laughing with such inexhaustible laughter]', *Micromégas*, 112–113). Before departing, Micromégas gives mankind a book of philosophy, which he promises contains all the truth about things; this book is donated to the Paris Academy, but when opened its pages are revealed to be all blank. Voltaire's Lockean sympathies are evident throughout the work, not least in this gift of a *tabula rasa* at the tale's end.

Critics have noted how Voltaire's fable re-uses the trope of giants and midgits from Swift's *Travels*. What is not so often noticed is his major innovation of inverting the dominant 17th-century SF premise; instead of travellers from the Earth encountering aliens and quizzing them about their Christian-religious orthodox, he imagines aliens coming to Earth, the first such story. The earthlings act according to SF type, and try to convince the aliens of the universal applicability of the Christian revelation, but Micromégas erases such certainties. The work is science fiction not only in its premise of alien visitors to the globe, but in its ubiquitous connection to and fictionalisation of the scientific discourses of the day. As Roger Pearson observes:

The celestial journeys of Micromégas to Saturn and then of Micromégas and the Saturnian to Earth are based on the very latest cosmology. As well as Newton's *Principia*, this included the work of Christiaan Huygens—especially his *Systema saturnium* (1659) but also his *Cosmotheoros* (1698)—as well as the work of Kircher, Keill and Wolff. There is nothing intrinsically fantastical about these journeys, for Micromégas has a sure knowledge of 'les lois de la gravitation et toutes les forces attractives et répulsives', and he is so well organised that he never has to stop for a comet. [Pearson, 59]

Voltaire's premise allows him to extrapolate the Copernican cosmological revolution into human affairs. Just as the Earth is no longer the physical centre of the solar system, so mankind cannot be considered the philosophical or theological focus of the universe. Micromégas marvels at the physical insignificance of our planet's microscopic inhabitants, and his perspective is large enough to reveal the absurdities of human endeavour, which in turn focuses Voltaire's satire. So, we see the ridiculousness in the fact that, as one of the philosophers explains, '*il y a cent mille fous de notre espèce, couverts de chapeaux, qui tuent cent mille autres animaux couverts d'un turban* [100,000 idiots of our kind who wear hats, are killing 100,000 fellow creatures who wear turbans]', *Micromégas*, 110) for the sake of a tiny portion of the, to Micromégas, insignificant globe.

The key to the text can be found in its animadversion towards the very notion of comparison. Micromégas and the Saturnian, before arriving on Earth, discuss Nature.

—*Oui, dit le Saturnien; la nature est comme un parterre dont les fleurs ...* ['Yes,' said the Saturnian. 'Nature is like a flower bed in which the flowers...']

—*Ah! dit l'autre, laissez là votre parterre.* ['Ah!' said the other. 'Let it alone with your flower bed!']

—*Elle est, reprit le secrétaire, comme une assemblée de blondes et de brunes, dont les parures ...* ['She is like,' the Secretary continued, 'a gathering of blondes and brunettes, whose costumes ...']

—*Eh! qu'ai-je à faire de vos brunes?* dit l'autre. ['Eh! What have I to do with your brunettes?'] said the other.]

—*Elle est donc comme une galerie de peintures dont les traits ...* ['She is, then, like a gallery of paintings in which the individual traits ...']

—*Eh non! dit le voyageur; encore une fois, la nature est comme la nature. Pourquoi lui chercher des comparaisons?* ['No!' said the voyager. 'I'll say it again: nature is like nature. Why do you look about for comparisons?']

—*Pour vous plaire, répondit le secrétaire.* ['To please you,' replied the Secretary.]

—*Je ne veux point qu'on me plaise, répondit le voyageur; je veux qu'on m'instruise.* ['I don't want to be pleased,' said the voyager. 'I want to be instructed.'] [*Micromégas*, 98–99]

This hostility to the very idea of simile is integral to Micromégas' approach to the universe; as with the misguided human philosophers at the end of the tale we understand that it is a mistake to try and translate the universe into metaphorical *other* terms. This, in turn, provides an explanation for the various enormousnesses within the narrative. Voltaire is not using shifts of scale for metaphorical purposes. He is highlighting the *actual* enormousness of the cosmos, the sheer hugeness of the universe that 18th-century astronomy was beginning to reveal. Micromégas is as tall as he is, and the Saturnian as tall as he is, because these—Voltaire is saying—are the scales of the universe in which we live. *Micromégas* is not, in this sense, a metaphorical text. It is, precisely, an instructive one.

18TH-CENTURY VOYAGES EXTRAORDINAIRES

Both Swift's *Travels* and Voltaire's *Micromégas* are examples of the *voyage extraordinaire*; the one of a Western bourgeois subject travelling out into wondrous places, the other of wondrous aliens travelling to visit us. Between them, driven by the approximate ideological and religious similarities of their Swift-Voltairean, Tory-Protestant/Catholic-liberal (or magic-materialist) determinants, these two works establish the axes of future science fictional textual production.

The emergent Western culture of quasi-imperial exploration-expansion shapes both works of course; and there is nothing surprising in finding many fantastical extrapolations of the principle of voyages of discovery and even conquest. Swedish writer Olof von Dalin's story of extraterrestrials visiting Earth, '*Saga om Erik hin Götske*' ('The tale of Erik and the Goths', 1734) might have had more impact had it been written in either Latin or a major European language. Eliza Haywood published *The Invisible Spy* (1755) under the pseudonym Exploralibus. It is a shapeless but entertaining novel based upon two particular pseudo-technological novums: a 'belt' that renders its wearer invisible; and a Dictaphone-style 'wonderful Tablet' which records 'every word that is spoken in as distinct a manner as if engraved' [Haywood, 5]. These enable Exploralibus to spy on whomsoever he fancies and pass on to us, his readers, his accounts. Although these technical facilitators are treated partly in the tradition of the magical-fantastic (the narrator inherits them from 'a certain venerable person ... descended from the ancient Magi of the Chaldeans' Haywood, 3) they are nonetheless actual material objects subject to material problems—the book ends when the narrator loses the ability to delete what is written on his magic tablet, so that it fills up and he is forced to publish. In this lies its significance, its secularisation of a trope that had previously been the province of a magical-romance tradition. Haywood has adapted the device from French writer Alain-René Lesage's (1668–1747) *Le Diable boiteux* (*The Lamed Devil* 1707; frequently reprinted in English in the 18th century as *The Devil upon Two Sticks*). In Lesage's novel the protagonist chances to free a crippled devil from a glass jar; the demon proceeds to lift the house-roofs of sleeping Madrid to reveal the secret histories of the people beneath. By replacing this wholly magical premise with a quasi-technical one, Haywood shows how half a century had changed the inflection of the fantastic adventure.

An earlier Haywood novel is *The Adventures of Eovaai, Princess of Ijaveo* (1736; reprinted as *The Unfortunate Princess* in 1741). The beautiful heroine of this utopian novel, set in a land that is temperate despite being located near the South Pole, is snatched into the sky by a wicked magician who flies away with her on a hybrid monster 'part Fowl, part Fish'. Although the book is rather stifled by its anti-Walpole satirical intention, it does illustrate one persistent concern of 18th-century SF; flight, either in the form of alien creatures with the innate ability to fly or else humans aided by machine. Flying men are also the novum of Robert Paltock's novel *The Life and Adventures*

of *Peter Wilkins* (1751). The bones of the story in Paltock's novel are conveyed in the lengthy sub-title to be found on the title page, as concerning the protagonist (Wilkins, a Cornish mariner) and 'his shipwreck near the South Pole; his wonderful Passage thro' a subterraneous Cavern into a kind of new World; his there meeting a Gawry or flying Woman, whose life he preserved, and afterwards married her; his extraordinary Conveyance to the Country of Glums and Gawrys, men and women that fly'. These Glums and Gawrys are humanoid terrestrial aliens, whose extensive wings (illustrated with four beautiful woodcuts in the first edition) are worn as a sort of clothing when they walk on the ground, to be unfolded—leaving them naked—when they wish to fly through the air. Aerially transported by a group of these flying humanoids, Wilkins finds out about their country, their customs, and intervenes on behalf of his wife's nation in a civil war, ensuring victory and reconciling the two nations. After his wife's death, certain that his children will be well provided for, Wilkins yields to his homesickness and returns home. Clearly influenced by Swift's *Travels*, although with an ingenuousness of tone and invention quite at odds with Swift's sharp genius, *Peter Wilkins* is a striking little *voyage extraordinaire*, with well-realised alien creatures and a compelling knack for narrative verisimilitude. It is a tale of radical otherness that is nevertheless rationalised cognitively. Indeed, the tale is more expressive of the dialectic at the core of the developing genre than many 18th-century works.

This is because of the rather obvious way Paltock's tale functions as a material rationalisation of fables of angels. The 18th-century craze for narratives of angelic encounter, and the exact nature of angelic being, was just coming to the boil. Peter Wilkins' Christian name might remind the reader of the first Catholic Pope; and although it was also a common enough Protestant name in the period, there does seem to be something significant in Paltock's nomenclature. Peter (Rock) begins his adventure with a precipitous shipwreck upon 'a Rock of extraordinary Height' [Paltock, 62], referred to many times subsequently in the narrative as 'the Rock'. It is through this externalisation of his Christian name that Wilkins passes, sucked by a cataract, into the land of the Gawrys beyond. Wilkins' first encounter with Youwarkee, the Gawry he will later marry, is preceded by a dream of his English wife, dead and transformed into an angel. Immediately on his waking Youwarkee falls from the sky, like Adam's dream. Her beauty, purity and nakedness (she 'had [no] other Covering than what they were born with', namely her wings, Paltock, 117) align her with angelic representation. The Gawry live more or less Edenic lives, eating the fruit of trees—when Wilkins brings them fish and birds to eat they take them to be a strange form of fruit—and inhabiting cities laid out on a grid-like pattern that resembles, in a diagram included in the text, nothing so much as a Christian cross [Paltock, 315]. The Gawry take Wilkins to be a saviour, in accordance with an ancient prophesy uttered by an eminent Ragam, or priest, who had reformed the Gawry religion, overturning the Papistical-sounding 'Country-Worship of the great Image' only to be thwarted by 'the rest of the Ragams opposing him'. He declares on his deathbed that because

the people have ‘rejected the Alteration in [their] Religion’ they will endure generations of civil war between West and East which only the coming saviour, Wilkins, will be able to end [Paltock, 243]. But the point of this novel is not to present a satirical allegory of Catholicism, or Christianity, but precisely to refigure supernatural topoi in secular and material terms. Symbolically *Peter Wilkins* explores questions of sin, of otherness and of redemption.

Wilkins comes in like a missionary, banishes Gawry superstition and, as he puts it, ‘settles Religion’ [Paltock, 276]; but he does this in a remarkably non-doctrinal way, informing the Gawrys only that there is a ‘Supreme Being, Maker of Heaven and Earth, of us and all things’, [Paltock, 280–1] (he later translates the Bible into their native tongue). Instead of theology he brings a wide range of technological skills and devices into this new world, and works on a resolutely material level, for example abolishing slavery, leading his people to victory in their civil war and so on. Paul Baines has shown how thoroughly the novel inhabits a technological idiom. Wilkins’ narrative is a detailed account of tools, mechanics, domestication of animals, rationalisation and the individual mastery of his environment, but his various devices, from pennywhistles to guns and cannons, are taken by the innocent Gawry to be forms of magic. According to Baines it is the novel’s ‘juxtaposition of technological power and imaginative fantasy ... its dramatic encounter between mechanics and superstition’ [Baines, 21] that is most distinctive about *Peter Wilkins*. In the larger context of the development of SF we can see that it is indeed precisely the balance between sober-minded Protestant technological materialism and the symbolic level of transcendent spiritual association that the novel mediates; the textual conflict between religious and technical discourses expresses that still-potent cultural anxiety that determined the origins of the genre to begin with. Another interesting ‘flying man’ fantasy, Rétif de la Bretonne’s *La découverte australe par un homme volant, ou le Dédale français* (*The discovery of Australia by a flying man, or the French Dedalus*, 1781) is discussed below.

SUBTERRANEAN ADVENTURES AND INTERPLANETARIES

In 1741, the Norwegian-Danish writer Ludvig Holberg (at this time, Norway and Denmark were politically connected countries; Holberg was born in Norway but educated and lived in Denmark) published his hollow-Earth fantasy *Nicolai Klimii iter subterraneum* (*Nicolai Klim’s journey beneath the Earth*). The work was a great success, translated into most European languages, popular well into the 19th century. It’s not hard to see why, for it remains a superbly inventive and entertaining narrative. Klim, a penniless ex-student, narrates how he fell into a chasm through the Earth’s surface and into an interior cosmos, lit by a sun at the Earth’s centre around which various worlds orbit. Klim himself falls into orbit around one of the planets of this internal system. A biscuit from his own pocket goes into orbit about him, turning him, as he himself puts it, into a planetary body in his own right—an eloquent emblem of the materialising shift in emphasis of the *voyage extraordinaire*. Step back to Greene’s *Planetomachia*

(*Battle of the Planets*, 1585) and the planets are supernaturally figured as individuals; a century and a half later Holberg quite properly reverses this, making a person into a planet, wittily pointing to the truth that in a Newtonian cosmos any material body might so become.

Landing on the world of Nazar Klim discovers a quasi-utopian society populated by walking-talking intelligent trees, the Potuani. Brian Aldiss does not think much of Holberg's arboreal aliens ('trees,' he opines, 'do not effectively



Fig. 5.1 Illustration showing Nicolai with the tree-people of Potu, from the 1845 English edition of Nicolai's journey under the ground

serve didactic purposes. Their bark is better than their bite', Aldiss, 79) but the potent imaginative strangeness of Klim's subterranean voyage, its rather frenetic succession of satirical alien societies and details, lend the world a distinctive and impressive flavour. To take only the sentient trees, what is especially interesting about them is the way Holberg inhabits and materialises a religious-mythic convention of the pre-SF literary imagination: the forest of the suicides from Dante's *Inferno*; or the magical transformations of humans into trees scattered through Ovid's *Metamorphosis*. The novel is also genuinely funny (Fig. 5.1).

After gaining work with the Potuani as a courier, on account of his (by arboreal standards) long legs, Klim offends his hosts by suggesting they pass a law to make their females second-class citizens, as in superterranean human societies—Holberg's satire in the novel is usually less obvious than this. They banish him to the *firmamentum*, their sky, the underside of the Earth's crust. Here he falls in with the simian Martinians and the barbaric human Quamese. Klim sells the former wigs, then teaches the latter to make gunpowder, raises an army and conquers the whole firmament. He eventually tumbles back through the hole through which he originally came in, is reduced to penury in our world, but eventually marries and lives happily ever after.

Voyages extraordinaires into worlds within the Earth like *Nicolai* enjoyed considerable popularity throughout the 18th century. Many of these spun imaginative adventures off the popularity of Athanasius Kircher's 1678 dull work of speculative science, *Mundus Subterraneus*. The anonymous French work, *Relation d'un voyage du pôle arctique au pôle antarctique par le centre du monde* (*Account of a Voyage from the Arctic to the Antarctic Pole Through the Middle of the Earth* 1721) is one example. Most of the novel details the protagonists' arctic explorations, including exciting encounters with polar bears and monstrous fish in volcanically heated seas. The actual intermundial passage is described only at the end, and runs the risk of anticlimax: '*de quelques minutes trois ou quatre mouvemens précipitez du Nord au Sud ... à tomber en ligne perpendicular* [falling in a straight line down North-South, for a few minutes and three or four movements]' [Anon 1721, 169]; although on the way down the narrator does see a 'very bright Sun-like shape' and a long line of clouds ('*Il offrit à mes yeux un feu très-brillant de figure circulaire, comme le Soleil ... [et] une longue suite de nuages*').

An anonymous English text, *A Voyage to the World in the Centre of the Earth* (1755) locates a utopian society of animal-respecting vegetarians at the heart of the globe. 'In this world,' we are told, 'there is no such Thing as Servants'. In fact it transpires that the servants' work is undertaken by children: 'as it is the custom to marry very early, they are soon well stock'd with Children and there always remains sufficient of them unmarried, to do the Family Work' [Anon 1755, 59–60]. Replacing adult employment with enforced child-labour may strike the modern reader as less enlightened than perhaps was the author's intention. Charles de Fieux de Mouhy combined the popular genres of oriental tale and subterranean adventure with an Egyptian hero in *Lamekis, ou les voy-*

ages extraordinaires d'un Égyptien dans la terre intérieure (8 volumes, 1735–8). This long and varied narrative sees Lamekis, son of an Ancient Egyptian High Priest, encounter strange worm-men in the interior of our hollow Earth, as well as journey to the celestial Island of the Sylphs, from whence beings can ascend to the Heavens. Playfully metatextual, at one point the author himself is brought into the narrative, rebuked for the extravagance of his imagination, and shown his own novel—the one we are reading—as a series of bas-reliefs (each bas-relief is described, and a footnote points us back to the relevant section of the novel). The final portion of the novel, we are informed, will be written by a mysterious force.

One of the most interesting of these subterranean stories was by the famous sexual adventurer Giacomo Casanova De Seingalt (more usually known as just Casanova) who, towards the end of his life, published a lengthy subterranean imaginary voyage, *Icosameron, ou Histoire d'Édouard et d'Élizabeth Qui Passèrent Quatre-Vingt-Un Ans chez les Mégamicres Habitans Aborigènes du Protocosme dans l'Intérieur de Notre Globe* [*Icosameron: or the History of Edward and Elizabeth who spent 81 years with the Mégamicres, original inhabitants of the protocosmos in the interior of our world*], five volumes (1788). Casanova's Mégamicres (or Biglittles) owe an obvious debt to Voltaire; but the conception of these interior aliens engages directly with the sorts of theological anxieties that are more common in 17th-century SF. The idyllic life of the Mégamicres is revealed as a function of the fact that their world predates, and was not contaminated by, Adam's original sin; but at the same time, and so as not to trespass on conventional theology, they are revealed as lacking souls. Their name derives from their little stature but great spirit. Biglittles' conceptual contiguity with Voltaire's superterranean Littlebig also points up the structuring little-big rationale of hollow-Earth stories as such. The world, itself contained within the solar system, is revealed as containing within itself another solar system; the microcosmic logic emblematises the way the 18th century conceptually crystallised the emergent bourgeois sense of self.

Exploration for the sake of discovery was giving way to international travel for the purposes of trade, conquest and the accumulation, or appropriation, of wealth. Holberg's satirical portrait of his European anti-hero raising an alien army, giving them weapons and conquering the *new* world was no mere caricature. In turn, as European fortunes were being made out of the new worlds, a degree of nostalgia began to enter the account of the *voyage extraordinaire*. The century saw more than a dozen epic poems on the subject of Columbus' journey to his new world alone, most written in Latin. America began to focus the desire for new worlds and new civilisations to which writers might boldly go.

To take one example as an indicative case. Ubertino Carrara's Latin epic poem *Columbus, Carmen Epicum* (1715) retells Columbus' voyage to America in twelve fat books of Latin hexameter, replete with mythological machinery and magical appurtenances. It's a poem that looks back to the 15th century in order to look further back to Ancient Rome, and to load every rift with Virgilian allusion. Yet some sections break free from its Jesuit author's rather

stifling classicism and begin to create estranging fables that function on their own terms. So, in book 10, Columbus' son Ferdinand falls overboard and is rescued by the underwater inhabitants of a gigantic 'sea tree', whose roots are in the ocean bed and whose top touches the waves. Ferdinand is given a tour of this submarine realm by a nymph called Aletia, an episode which becomes more science fictional and less mythological the longer it goes on. It climaxes in a special chamber adorned with many mirrors and lenses through which Aletia shows Ferdinand the heavens and reveals that mankind's journey to the stars will be achieved 'not on the doomed, waxen wings of Daedalus', but through new technologies which will slide people aerially into the hard tracts of space ('*aëriosque perambulat ardua tractus*') as easily as the eye is led up one of Galileo's telescopes.

*Latiùs extendens famam terraeque, polique.
Utraque pars Mundi posthac jactantior ibit,
Luce planetarum quod creverit amplior Æther,
Terraque Mediceis quod nomina fecerit astris.*

[Your fame will encompass the Earth, and also the sky:

Both will comprise the world into which you are thrust,

Towards planets already grown larger, to the ether,

To territory in those stars to which the Medicis gave their name.] [Carrara, 217]

That is, to Saturn, whose moons were named after members of the Medici family by Galileo in the *Sidereus Nuncius* (by way of flattering his patrons), and which was believed at the time to be the outermost planet of the solar system.

As the West colonised the actual world, western writers extrapolated wider colonial goals. German author Eberhard Christian Kindermann's novel *Die Geschwinde Reise auf dem Luft-Schiff nach der obern Welt, welche jüngstlich fünf Personen angestellt* (*The rapid journey by airship to the upper world, recently taken by five people* 1744) takes its five protagonists—representative of the five senses—to Mars by a flying craft made of sandalwood. Didacticism does not overpower Le Chevalier de Béthune's *Relation du Monde de Mercure* (*An Account of the Planet Mercury*, 1750), a work of early SF unusual in not using the description of an imaginary Mercurian society as a vehicle for political satire or utopian fantasy. Béthune's aliens are diminutive winged creatures who are ruled by mysterious but benevolent beings who dwell in the Sun. Béthune insisted, in a preface, that the book was merely '*une fable, dans laquelle on a essayé de joindre à des idées amusantes par leur nouveauté, quelques observations utiles*' [a fable in which I have tried to link ideas amusing because of their novelty with a number of useful observation]; but the charm and power of the book belie this understatement. By living nearer the Sun, a source as much of spiritual as physical illumination for Béthune, the novel points its satire at those who can see only superficialities, the outer epidermis of things, never apprehending the elixir and quintessence ('*qu'il ne voit que la superficie, l'enveloppe des choses, ne touche qu'à l'épiderme, et n'en prend que l'élixir et la quintessence*'

[Béthune, 2:137]). This insistence on penetrating below the mere surface, literalised in the many subterranean adventures of this period, is a spiritual imperative and presented as such; but it is also the actualisation of the new insights of science.

Swedish theologian Emmanuel Swedenborg followed in the tediously mystical-religious footsteps of Kircher's *Iter exstaticum* (1656) with his allegedly visionary *De Telluribus* (*Of Earths* 1758; translated into English by John Clowes in 1787 as *Concerning the Earths in Our Solar System, which are Called Planets, and Concerning the Earths in the Starry Heavens, Together with an Account of their Inhabitants*). This work does involve imaginative voyages to a number of different planets, but the whole is suffused with a dogmatic, if wishy-washy, magical mysticism; the planets and aliens encountered are not differentiated in any but a spiritual sense, and the whole works directly towards justifying the religious cult Swedenborg was establishing. That the work has little merit does not mean it had no influence; quite the contrary, some very major literary talents were inspired by Swedenborg's vision, most notably the Romantic poet William Blake. Blake as a young man was probably a straightforward Swedenborgian, although his greatest poetry was written in angry reaction against Swedenborg's influence. *The Marriage of Heaven and Hell* (1790) is a prose-poetry parody of Swedenborg's writings which surpasses the original so stratospherically as to render it irrelevant. It is also, in part, a subterranean fantasy in which the protagonist descends into a huge underground realm inhabited by some very alarming creatures through an entrance behind the altar of a church. His earlier *An Island in the Moon* (written 1774–1775, though not published until long after Blake's death) belongs to the sub-genre of satirical Moon-visits [see the following section of this chapter], and expresses Blake's profound hostility for the systematising tendencies of Western scientists.

Frenchwoman Marie-Anne de Roumier's *Les Voyages de Milord Céton dans les sept Planètes* (*The Voyages of Lord Ceton in the Seven Planets*, 1765) is more astrological than scientific. An English lord and his sister flee the court of Charles I and, carried up by an angel called Zachiel, tour the solar system, where they discover Mars to be a planet of war, Venus a planet of love and so on. But although this veers towards the pre-scientific (not unlike Greene's *Planetomachia*, which perhaps inspired it) it is nevertheless part of a broader 'scientific' idiom. This is true to an even greater degree of French scientist Louis-Guillaume de Lafolie's *Le Philosophe sans Prétention ou l'Homme Rare* (*The Unpretentious Philosopher, or the Rare Man* 1775). This strange but rather wonderful work concerns a visitor from the planet Mercury called Ormisais who flies to Earth in an electrically powered sky-chariot, which he breaks by crash-landing it on Earth. Aided by an earthling called Nadir, Ormisais searches for the materials to mend his spacecraft. The Russian Vasily Levshin's *Нове́йшее путеше́ствие* (*The newest voyage*, 1784) is another materialist fantasy of interplanetary exploration—this time to the Moon—rationalised according to the latest discourses of 18th-century science. Which brings us to the matter of lunar adventure.

THE 18TH-CENTURY MOON

As a location unmistakably other and yet close enough to be reachable by man, the Moon is the prime SF site. But the plausibility of the Moon as an actual site of habitation or exploration was eroded by 18th-century advances in astronomy. At the beginning of the century, in 1701, Nehemiah Grew could take it wholly for granted that the Moon 'is another Terraqueous Orb, having its Atmosphere, Winds, Seas, and Tides; and herewithal a suitable tho' perhaps a different Furniture of Animals, Plants and Mines' [Grew, 10]. By the end of the century, however, more accurate observations, especially of stars viewed near the Moon's rim, revealed that the satellite lacked an atmosphere, and therefore must be bereft of 'winds, seas and tides'. Samuel Taylor Coleridge (1772–1834) jotted in his notebook in 1794:

Moon at present uninhabited owing to its little or no atmosphere but may in Time—an atheistic romance might be formed—a Theistic one too.—Mem! [Coleridge, *Notebooks*, p. 1]

Though he never wrote this particular romance, Coleridge's balance of 'atheistic'(materialist) and 'Theistic' (spiritual) perspectives on this tale of future lunar colonisation is very much to the point. In the 1830s Coleridge's view of possible alien life in the solar system was similarly negative; where most commentators were assured that some if not all planets were occupied, Coleridge complained 'Must *all* possible Planets be lousy? None exempt from the Morbus pedicularis [louse disease] of our verminous man-becrawled Earth?' [Coleridge, *Marginalia*, 2: 887]. This is a remark that carries a flavour of the way a previously spiritual realm had been contaminated by the material observations of the scientists.

Somewhere between this ideal inhabitable Moon and the airless desert is to be found in English poet Thomas Gray's Latin poem '*Luna habitabilis*' ('The Inhabitable Moon', 1737), which populates the satellite with bizarre aliens worthy of Kepler. The poem looks forward to the times when imperial Britain will turn the Moon into a colony, conquering the terrifying and apparently cyborg aboriginals: '*acies ferro, turmasque biformes, monstraque feta armis, et non imitabile fulmen* [the army of iron, regiments of biform monsters, great beasts full of armed men, and their inimitable lightning]'. Gray styles this war as a necessary pre-emptive strike against a '*Lunae in orbe tyrannus, se dominum vocat* [a tyrant in the Moon's orb who says he is *our* master]'; and there is an unambiguous triumphalism in his portrait of the first British colonists ('*primosque colonos*') crossing space in '*classem volantem*' ('flying boats') to settle the pacified new world [Gray, 301].

But by far the most common use of the Moon in 18th-century literature is as a location of comico-satirical ludicrousness. A work such as Aphra Behn's *The Emperor of the Moon: A Farce As it is Acted by Their Majesties Servants, at the Queens Theatre* (1687) makes no attempt to rationalise the science of its satire, based as it is on the Italian commedia dell'arte tradition. *The Consolidator*,

or *Memoirs of Sundry Transactions from the World of the Moon* (1705) by Daniel Defoe is an uncharacteristic offering from this usually entertaining writer—uncharacteristic in the sense that it is so constipated with satiric and contemporary-allegorical reference as to approach a state of absolute unreadability. More readable, in a knockabout sense, is the rather breathless *A Voyage to Cacklogallinia* (1727) by ‘Captain Samuel Brunt’, which soon moves beyond its initial purpose—satirising the economic catastrophe that was the South Sea Bubble—to achieve a weird believability of its own, as its protagonist journeys to the Moon, carried thence by the winged humanoid Cacklogallinians who populate the book’s comic utopia. Murtagh McDermot (the name is a pseudonym) published *A Trip to the Moon ... containing Some observations, made by him during his Stay in that Planet, upon the Manners of the Inhabitants* in 1728. According to Pythagorolunister (John Kirkby), in his *A Journey to the World in the Moon* (1740), ‘no material Engines, nor any possible Inventions can ever convey our Bodies to the World in the Moon’ and therefore it is only possible to ‘visit these Regions by *spiritual Analogy*’ [in Claeys, 2:5]. *A Trip to the Moon: Containing an Account of the Island of Noibla* (1764) by Sir Humphrey Lunatic (also, obviously, a pseudonym) is another work of this type. *The Life and Astonishing Transactions of John Daniel* (1751) by Ralph Morris (about whom little is known; the name may also be a pseudonym) also involves a journey to the Moon. The book’s sub-title makes the rather rash promise that it details ‘the most surprising adventures that any Man in the Universe ever met with’, a promise the story itself proves unable to keep. William Thomson’s *The Man in the Moon; or, Travels into the Lunar Regions by the Man of the People* (2 volumes, 1783) sees ‘the man in the Moon’ descending to snatch up English radical politician Charles Fox (Thomson’s description of him as ‘the man of the people’ is sarcastic) on a tour of a satirical-allegorical Moon.

Much of the point of the lunar location of these satires is its unarguable distance from Britain, a function that was also served by setting satires in far-flung portions of the globe. Tobias Smollett’s peculiar and scatological allegory *The History and Adventures of an Atom* (1769) uses Japan for this. The title character is a sentient atom that, lodging itself in the pineal gland of one Nathaniel Peacock, is able to communicate to him its adventures. It was originally part of the arse of the Japanese prime-minister Fika-kaka, whence it passed through a duck and a sailor into Peacock. It relates the hectic, slapstick events of the Japanese court, invoking a series of teenagesque comic names (Sti-phi-rum-poo, Nin-kom-poo-po and so on) by way of re-presenting English political life 1757–1767. These sorts of lunar fantasy were also popular on the continent. Cornélie Wouters, Baronne de Wasse’s *Le Char Volant, ou, Voyage dans la lune* (*The Flying Chariot or Voyage to the Moon*, 1783).

A few slightly more interesting examples can be isolated from this mass of satirical-fantastical *jeux-d’esprits*. Polish churchman Michal Dymitr Krajewski’s *Wojciech Zdarzyński życie i przypadki swoje opisujący* (*The Life and Adventures of Wojciech Zdarzyński, narrated by himself* 1785) takes its titular protagonist to the Moon by hot air balloon, to explore the inhabitants and civilisations

thereon. And the anonymous *A Journey Lately Performed Through the Air in an Aerostatic Globe* (1784) has its narrator fly, once again in a hot-air balloon, improbably enough, all the way to Uranus (or to ‘the lately discovered planet Georgium Sidus’ as it was then known)—the astronomers, he says, who declared it large and distant are wrong, for it is small and near by. Slight as this satire is, it may be the first interplanetary voyage by balloon in English, as Krajewski’s almost certainly unrelated story was in Polish. This was to grow into a sub-genre that was to demonstrate surprising longevity. The protagonist of the anonymous *A Voyage to the Moon, Strongly Recommended to All Lovers of Real Freedom* (1793) also travels into space by means of ‘that curious machine an Air-balloon’ [Claeys, 4:281], flying to the Moon, here called Barsilia, which he finds populated by serpentine aliens. These hard-working creatures are, in a parody of Tory England, oppressed by the ‘Great Snake’, who taxes sixth-sevenths of all their earnings, using most of the money to keep a pointless ‘great wheel’ turning in the capital city. The satire is of the sledgehammer sort (“‘As to truth and justice,” I replied, “they seem to be treated here as imaginary or contemptible things”’, Claeys, 4: 1997) but the detail is deftly handled and the whole thing achieves a surprising degree of freedom from the merely polemical.

SF AND GOTHIC FICTION

Although SF was being written throughout Europe during the 18th century, two nations emerged as the key producers: Protestant England and Catholic France. This in turn reflects cultural and historical contexts. England and France enjoyed a more textually nutritive culture than pre-unification Italy and Germany, or the smaller nations of Europe, in part because both countries were engaged, often with some violence, in the nascence of technological and imperial augmentation. They were also two of the countries with the most pronounced history of Catholic/Protestant religious reformation, and therefore cultures determined by the dialectic at the core of SF.

But a graph of SF textual production throughout this century would demonstrate one curious feature; towards the end of the century the number of SF texts being written in English dropped away, a circumstance not reflected in France. This fact is made more remarkable when we consider that it was exactly this period in England that saw the great craze for Gothic fiction; a curious thought, give that most historians of SF link the birth of the genre with Gothic writing. Brian Aldiss, in an influential argument, goes so far as to define SF as an offshoot of Gothic—he begins his critical history with ‘the dream world of the Gothic novel, from which science fiction springs’ and defines the genre as ‘characteristically cast in the Gothic or post-Gothic mode’ [Aldiss, 25]. Given the wide currency of this argument, we are entitled to wonder if it is correct.

Gothic fiction is a popular category of academic pedagogy and research; a usefully delimited sub-genre of fantastic literature of which many works remain very readable today (and which are therefore popular with students and

with the framers of contemporary university syllabi). Typically, a Gothic novel includes mysterious and sinister goings-on, usually involving supernatural agency such as ghosts or devils, although sometimes these events are explained away in rational terms. Many Gothic novels are located in distant, wild places, castles or monasteries in inaccessible portions of central Europe, where innocent young women are terrified, men have commerce with the Devil and there is much to do with graveyards, ruins and madness, all flavoured by a distinctive atmosphere of eroticised suspense, shock and terror.

There was an enormous vogue for such novels in Britain in the latter decades of the century. The start of this sub-genre is usually taken to be 1764, with the publication of the hysterically overheated haunted-house novella *The Castle of Otranto* by Horace Walpole. Writers such as Ann Radcliffe, Matthew Lewis (whose novel *The Monk*, 1796, is a particularly extreme tale of devilish imposture and priestly corruption) and Charles Maturin enjoyed tremendous success. By the time Maturin's soul-sold-to-the-devil yarn *Melmoth the Wanderer* was published (1820) the craze for this kind of writing was on the wane. Still, the influence of Gothic continued unmistakably in other genres, in works as diverse as Coleridge's poetry, Charlotte Brontë's *Wuthering Heights* (1847), Bram Stoker's vampire story *Dracula* (1897) and latterday horror fiction and films.

That said, there *is* something inimical to SF in Gothic writing. I say this with no desire to revisit the tedious rule-games engaged in by so many critics seeking to define science fiction (as per my opening chapter), but rather to restate the basic thesis of this present critical history of SF. Gothic is another iteration of the magical romance, modelled explicitly on the textual protocols of that long-standing mode, although one with a newly 'dark' flavour, and a widespread popularity. On those few occasions where apparently supernatural events are revealed not to be supernatural (the most famous instance of this is Ann Radcliffe's *The Mysteries of Udolpho*, 1794) the novel in question folds back into bourgeois love-story (the events of *Udolpho* are revealed as impedimenta designed to make the course of true love between Radcliffe's heroine and hero run unsmooth and so make for a more interesting read). In general, Gothic fiction is irrational and magical in a pseudo-Catholic sense, or to be a little more precise, in ways inspired by English Protestant paranoia about the supposedly monstrous aspects of Continental Catholicism. SF, as it had been developing for two hundred years, was modulated by discourses of rationality and Protestant Deism: systematic, mobilised and about the buffering of the porous self. Perhaps the closest any of the hundreds of Gothic novels published between 1764 and 1820 come to science fiction are the little known *The Balloon, or Aerostatic Spy* (1786, author unknown), which stays within the logic of ballooning established by the Montgolfiers; and the even more obscure *The Invisible Man, or Duncam Castle* (1800, author unknown), which recycles the 'belt of invisibility' from Eliza Haywood's *Invisible Spy* (1755; see above). Otherwise Gothic fiction was a non-SF idiom.⁴

But the reader prepared to entertain my assertion that SF does not begin with Gothic may nevertheless be curious why SF diminished in England in the last decades of the 18th century whilst continuing to flourish in France. In fact, Gothic is part of this answer. The shaping cultural context of European life was shaken-up radically by the French Revolution of 1789. Rapid social change presented itself as a pressing reality, and artists reacted, as might be expected, by attempting to mediate these new social circumstances via their art. French and Continental writers, most of them caught up in excitement about the new political developments, wrote (amongst other things) some forward-looking rationalist and fundamentally revolutionary science fiction. Many English writers, working in a climate generally hostile to these developments, retreated into a Gothic rehearsal of fears and terrors. Putting it so baldly inevitably distorts a more complex actual set of textual problematics, but goes some way, I think, towards explaining why so few of the remaining writers mentioned in this current chapter are English.

PRE-REVOLUTIONARY AND REVOLUTIONARY SF

Robert Darnton, in his persuasive literary history *The Forbidden Best-Sellers of Pre-Revolutionary France* (1997), has shown the extent to which the repressive instincts of the French *ancien régime* were thwarted by an underground network of writers, booksellers and readers, circulating clandestine works that challenged the prevailing ideological orthodoxies. Many of these were science fiction, often utopian works that implied criticism of the imperfections of contemporary life by contrasting it with an alternative and often future ideal.

Indeed, romances set in the future formed the backbone of late-18th-century Continental SF. After various scattered examples in the 17th century (such as Guttin's 1659 *Epigone*), future fiction became increasingly coherent as a sub-genre, and increasingly popular in the early 18th. Irish churchman Samuel Madden published *Memoirs of the Twentieth Century, Being Original Letters of State under George the Sixth ... from the Middle of the 18th, to the End of the Twentieth Century, and the World* in 1733. This is a partly satirical work, but makes long—six volumes—and dull reading, although it is interesting both for its Protestant author's hostility to the Pope, and for its ambiguous mediation of SF and fantasy. On the one hand, Madden is very interested in the advances of science. On the other, as with Kircher (whom Madden mentions), it is an angel that brings the documents from the future that provide the subject of the *Memoirs*. In Madden's 1990s the non-British world has been overrun by Jesuits, and the book, more admonitory than premonitory, exists largely to agitate for anti-Catholic political action. The anonymous English cod-history *The Reign of George VI: 1900–1925* (1763) details a wish-fulfilment English victory over France led by the hero-monarch of the work's title, although the supposedly future world differs in very few particulars from the 18th century in which it was composed. Another anonymous work, *Private Letters from an American to his Friends in America* (1769), imagines a world only a few

decades beyond its date of composition, dramatising some major changes, including a largely depopulated Britain ruled by America (rather than, as was the case in 1769, the other way around). More serious literary considerations of 'time' were also being written. Russia's greatest 18th-century poet Gavril Derzhavin published his poem 'На смерть князя Мещерского' ('On the death of Prince Meshchersky') in 1779. In this ('his finest poetic work' according to Ilya Serman) Derzhavin contemplates 'the relationship between time and eternity' and 'the irreversibility of time's flow' [Moser, 88], and looks forward to the end of the whole universe, in which death 'И звезды ею сокрушатся,/И солнца ею потушатся,/И всем мирам она грозит [will shatter the stars, extinguish all the suns, threaten every world]'.

But it took the French Revolution, and its pre-Revolutionary ideological climate, to turn future fictions into a major mode of late 18th-century SF. By far the most influential practitioner of this kind of writing was Louis-Sébastien Mercier, political radical, writer and journalist, who was active during the French Revolution. His political sympathies were evident a decade before this in his future-fantasy *L'An deux mille quatre cent quarante: rêve s'il en fut jamais* (*The year 2440: a dream if ever one was 1770*). This was a highly popular work. Darnton notes that it went through 25 editions and calls it 'the supreme bestseller' of clandestine pre-Revolutionary French novels [Darnton, 115]. Its narrator, dissatisfied with contemporary life, falls asleep and wakes in the future Paris of the title date to find a utopian city run on rationalist and Republican lines: citizens cohabit peacefully; the Catholic Church has been abolished (replaced by a universal, rational Deism), as has slavery and colonialism; school education is based not on outmoded subjects like Greek and Latin but rather on algebra and physics. Everything is immeasurably improved from the *ancien régime* France of the late 18th century.

L'An 2440 circulated widely, despite being considered a dangerously incendiary work by the pre-Revolutionary French authorities. Indeed, this contemporary political *cachet* goes some way to explain its popularity, for it is a very dull read when judged by other criteria. Robert Darnton, quite accurately, describes its 'heavy and bombastic' moralising, 'always straining for sentimental effect, never betraying the slightest sense of humor' [Darnton, 115]. But it is a significant text nonetheless. As Paul Alkon perceptively notes, its date is well chosen: 'what Mercier conspicuously avoids is some future date, such as the year 2000 or 2666, with possible millenarian or other religious significance' [Alkon, 122]. The very specificity and the unremarkability of a year such as '2440' set an interesting precedent for subsequent SF future-visions. The replacing of Catholic-magical sensibilities not with atheism (John Carey notes that there is 'not a single atheist in the whole kingdom' and that 'if one were found he would be despised as a stupid wretch', Carey, 159) but with a Deism more familiar from writers in the High Protestant tradition, points to what would become the mainstream of 19th- and 20th-century SF. And *L'An 2440* provided undeniable imaginative liberation to a great many writers.

Mercier's influence is unmissable in the work of German writer Johann Albrecht. His *Dreyerley Wirkungen: Ein Geschichte aus der Planetenwelt* (*Three-way Effects: A Story from the Planet-world*; eight volumes appeared between 1789 and 1792) catches the French Revolutionary mood of its time, criticising King Friedrich Wilhelm II via a romance ostensibly set on the planet Hidalschin. Albrecht's democratic political sympathies also inform *Uranie: Königin von Sardanopalien in Planeten Sirius* (*Uranie: Queen of Sardanopolis on the Planet Sirius*, 1790), in which SF reference is used as a way of coding subversive political sympathies. The title character of *Uranie* is a straightforward version of Marie Antoinette transferred to the monarch of a distant planet. Swiss writer Heinrich Zschokke's three-volume *Die schwarzen Brüder* (*The Black Brotherhood*, 1791–1795) also expresses the radical-democratic opinions of its author; the third volume being set in a 24th-century dystopia. Another Mercier-influenced text is the future-set play *Anno 7603* (1781) by the Norwegian John Hermann Wessel, which sharply interrogates assumptions about gender roles.

The prolific French writer Nicolas-Edme Rétif de la Bretonne also used SF as a means of exploring radical reappraisals of conventional social mores. Indeed, he was so much a person of his time that he 'took upon himself nothing less than the total reform of society' [Poster, 4]. Perhaps his most famous book is *La découverte australe par un homme volant, ou le Dédale français* (*The discovery of Australia by a flying man, or the French Dedalus*, 1781). The young protagonist Victorin invents a mechanical flying device that comprises cape-like wings and a head-worn umbrella-device. Utilising this he carries his girlfriend away to 'Mont-Inaccessible', an otherwise unreachable alpine summit, where the two of them live happily together and start a family. From there they fly to Australia where Victorin establishes a colony, marries his son off to a giant native from the island of Patagonie, and encounters many beast-hybrids—from monkey-men, bear-men, dog-men through to sheep-, goat- and bird-men. The novel concludes with a description of the land of Mégapatagonie, an antipodean anti-Europe whose capital, Sirap, occupying the exactly opposite point on the globe to Paris, has natives (as we might guess from the city's name) who talk backwards-French, wear shoes on their heads and hats on their feet.

Rétif had something of a reputation in his own day for licentiousness, but this reflected a belief in free love rather than any Sadean excess (indeed, Rétif 'hated Sade bitterly' and wrote an antidote to Sade's novel of sexual violence and rape, *Justine*, replacing that book's cruelty with 'eroticism', Porter, 385–386). Indeed, part of the point of *La découverte australe* is to articulate Rétif's idiosyncratic cosmology. He conceptualised the solar system in terms of 'the copulation of the sun and the planets. All matter was alive and emitting seminal fluid; the sun gave forth light which fertilized the planets ... there was a God in Rétif's universe who resembled the Deist's God in that he was the remote force who gave momentum to all matter. But in Rétif's strange vision this God was composed of pure passion ... he was seminal fluid' [Porter 38]. The beast-men are, in part, a cod-Rabelaisian satire on contemporary European life; but

they also represent an inchoate but nonetheless interesting effort on Rétif's part at a sort of evolutionary theory, a description of '*l'origine de l'homme et des animaux*' that sees the different species as originally linked.

Rétif's other science fiction works belong to a similarly radical climate of moral and political reappraisal. His collection of forty-nine short stories, *Les Contemporaines, ou Aventures des plus jolies Femmes* (1781) all spin erotic variations on heterosexual love as a challenge to contemporary sexual mores. Some of these veer into science fiction, as with number 27, '*La Femme au Mari Invisible*', the woman who was married to the invisible man. More substantial is his late novel *Les Posthumes* (*The Posthumous Ones*, 1802), sub-titled '*Lettres du tombeau* [letters from the tomb]'. It is a compendium of various tales purportedly contained in letters written by a man, the Président de Fontlhète, who, in the knowledge that he must die within one year, writes to his wife Hortense in order, gently and over time, to break the news to her. His strategy is to encourage her to believe in life after death, and thereby lessen the shock of his own demise. Volume one largely concerns the story of the lovers Yfflasie and Clarendon who die in an earthquake at the moment of consummating their marriage, and whose souls then float about learning the secrets of reincarnation. Volume two is more to our purpose; Fontlhète has invented mechanical wings and flies about the globe. On his travels he meets the Duc de Multipliandre, a man several thousand years old who is able to insert his own consciousness into other people by displacing their souls. Using Fontlhète's wings, and his own psychic ability, Multipliandre becomes lord of the Earth and establishes a Utopia (based, of course, on Rétif's own utopian writing). He then travels around the solar system, meeting various alien humanoids, to whose inmost thoughts he has access through his ability to displace their souls. Multipliandre discovers that comets are living creatures, and planets merely the corpses ('*ne sont que des cadavres flottants dans le fluide solaire*') of dead comets. The closer he approaches the Sun, including to an unknown planet inside the orbit of Mercury called Argus, the more wisdom he discovers, from the inhabitants of which Multipliandre discovers the true nature of the cosmos ('*la vie est le produit de la copulation ineffable de Dieu* [life is the product of the ineffable copulation of God]').

CONCLUSION

Science fiction is modular because science, as it developed across the 18th century, is modular. Scientists developed models to explain physical, chemical and biological phenomena. Revolution is an experiment too, and one that imposes a modular sense of social praxis upon a nation in a quasi-scientific way. Of course, experiments often do not follow the course anticipated by the experimenter. Eighteenth-century SF is full of imagined travels, as the era itself was by real voyages of trade and war, but with this difference, that these voyages project outward, or (in the case of hollow-Earth stories) inward in order to externalise the discursively coalescing sense of bourgeois individualism. Similarly, the *voy-*

age extraordinaire takes the imagination into places that force a radical revision of the bigness of the cosmos, the smallness of the individual. It is in the nature of models to force the comparison of scale. The solar system is vastly bigger than an orrery, and science fiction can too easily become only an orrery of the imagination. If one's orrery is constructed cunningly enough it can function as a kind of inverted 'Total Perspective Vortex', with a similarly destabilising effect on one's subjectivity. At the end of the century the minor English poet Capel Lofft published his epic poem *Eudisia, Or a Poem on the Universe* (1781). Most of it involves cramming the astronomical scientific knowledge of the day into rather inert blank verse ('receive the great KEPLERIAN rule! / Such as the Cube of numbers that express / The distance of each planetary Sphere, / Such is the Square of periodic time' and so on [Lofft, 39]). When Lofft contemplates what he feels sure will be humanity's eventual diaspora into the cosmos his imagination struggles to articulate the sheer size of these new horizons:

For this bold Commerce spread the restless sail,
And to new points stretches her aching eye;
Isles and ideal continents. O mass,
Great and stupendous, if the grovelling soul
Cling ant-like to the hillock! But how small
If to the starry Universe compar'd!
Even a Point; an Atom! Multiply
The might aggregate of land and sea
Ten thousand by ten thousand times; proceed
Till Computation faints beneath the toil,
And Industry herself cries out 'no more!' [Lofft, 26]

For a social order premised upon precisely commerce, industry and rational computation, such an overwhelming environment could hardly be other than destabilising. The 19th century beckoned.

NOTES

1. 'The Dog Star (which is the largest and consequently the nearest to us) appears 27,650 less [bright] than the Sun and therefore must be above two million of millions of miles from us! Stupendous distance! So great that a cannon-ball would spend near seven hundred thousand years in flying thither with the same velocity it has at the cannon's mouth' [Anon, *A Succinct Description of that Elaborate and Matchless Pile of Art Called the Microcosm, Interspersed with Poetical Sentiments on the Planets* (1773), 20]. In point of fact, these figures seriously underestimate the distance to the star Sirius, which is 25,000 times further away (8.6 light years, or 50,000,000,000,000,000 miles).
2. Marjorie Hope Nicolson found in this passage the title of her study of Newton-influenced poetry, *Newton Demands the Muse* (Princeton: Princeton University Press 1946).
3. Hence the first Minister of Brobdingnag carries 'a white staff, near as tall as the mainmast of the *Royal Sovereign*'; that Gulliver being carried overland in his box

experiences ‘agitation ... equal to the rising and falling of a ship in a great storm’; that Gulliver sleeps under a ‘clean white handkerchief’ that is ‘larger and coarser than the mainsail of a man-of-war’ and so on [Swift, *Travels*, 146, 136, 131].

4. Aldiss’ insistence on SF as a mode of the Gothic is shaped at least in part by his choice of Mary Shelley’s Gothic novel *Frankenstein* (discussed in the next chapter) as the starting point for the whole genre. But *Frankenstein* is in many ways an uncharacteristic Gothic novel. Appearing very late in the craze, it can be read with equal justice either as a novel founded on a supernatural occurrence (which is to say, as Gothic horror) or as a purely materialist science-based extravaganza (and therefore as SF). There is a well-balanced discussion of ‘Gothic SF’ by Peter Nicholls in Clute and Nicholls, 510–512.

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Early 19th-Century SF

Taking the whole busy 19th century in overview, we can see a number of broad fascinations working their way through the SF writing: an increased interest in the mystical and theological component of interplanetary or interstellar romances; reflections in imaginative literary form of 19th-century advances in science, technology and industry; in some cases a direct mapping of imperialist or political concerns into SF or utopian fantasy; and above all a much greater emphasis on the *future* as the arena for science-fictional storytelling. But more than all this, there is a new focus on individual subjectivity, or it might be better to say the elaboration of a new sort of subjectivity, that has to do with the larger cultural logic of Romanticism, and which for good and ill was to come to dominate European and American SF. Keats famously deprecated Wordsworth's later writing as informed by a kind of 'egotistical sublime', and although he was not thinking of science fiction when he said so that handy phrase epitomises the key direction in which the genre moves. In a nutshell, this is what happens across the 19th century to the new category of the sublime (our genre's sense of wonder) that was inaugurated by 18th-century science: it gets individuated.

So much is evident through much of the science fiction written over these decades, but it is particularly evident in the writers who provide the three main foci for this chapter, two Anglophone and one Francophone, all figures who would, in different ways, prove significantly impactful on the continuing development of the genre: Mary Shelley, Edgar Allan Poe and Louis-Napoléon Geoffroy-Château.

VISIONS OF THE FUTURE AND 'LAST MAN' FICTIONS

Late 18th-century revolutionary turmoils, and their cultural consequences, carried through into the 19th century, especially with regard to future-fantasies. For many the distinctive characteristic of SF is its fondness for representing possible futures. More, there has been what amounts to a critical consensus

that this systematic imagining of futurity only begins to happen in the 19th century—a theory sometimes offered as support for the argument that SF ‘begins’ in that epoch. According to Darko Suvin, the ‘central watershed’ of the development of SF as a specifically futuristic fiction can be located ‘around 1800, when space loses its monopoly upon the location of estrangement and the alternative horizons shift from space to time’ [Suvin, 89]. As we have seen, romances of the future were being written long before this, and the idea that humanity only acquired the habit of speculating about future developments is, *prima facie*, pretty hard to swallow. It may be better to think of a new sub-junctivity entering the genre around this time: the future as unfulfilled wish or condition that in turn required a mode of imaginative dramatisation more nuanced than divinely sanctioned prophesy; or the rigid protocols of advanced military, engineering or social planning. At any rate the future certainly became a common trope in the Romantic literatures of the early 19th century. It is not clear why the late 18th to early 19th century marked such an expansion of interest in this topic. Suvin himself notes that ‘this turning, that cuts decisively across all other national, political and formal traditions in culture, has not so far been adequately explained’ [Suvin 73].¹ The important consideration is not so much that SF became a predominantly futuristic fiction, but that—early in the century—so many of these visions of the future looked to the very end of time, and to the figure of the last living human.

One particularly influential example of this sort of writing was *Le dernier homme* (*The Last Man* 1805) by Jean-Baptiste François Xavier Cousin de Grainville. Ridiculed on original publication so savagely that Grainville is reputed to have drowned himself in the Somme in misery, this book later came to be regarded in its own country as a great epic in prose. Indeed, to bring out its epic qualities it was rewritten in verse by Auguste-François Creuzé de Lesser in 1831 as *Le dernier homme, poème imité de Grainville* (it was later rewritten in verse a second time by Élise Gagne in 1859 as *Omégar ou le dernier homme*). The idea was not original to Grainville; the concept of a single ‘last man’ looking around him on the end of the world goes back at least as far as La Bruyère’s *Caractères* (1688). But it was Grainville’s work that had the greatest impact, especially but not exclusively in its native country. Indeed Grainville’s posthumous grip on early 19th-century French literary imaginations probably had much to do with its intoxicating intercalations of religion and secularism. Alkon’s lengthy chapter discussing the novel is entitled: ‘the Secularization of Apocalypse’.

Grainville, a priest, had been defrocked during the French Revolution and afterwards married. His book is balanced between visions of religious apocalypse and a rational, materialist view of the end of the world. Some of the narrative is explicitly biblical (Adam watching a procession of damned souls into Hell) but the key characters, Omegar and Syderia, the last human couple, fertile but childless, live, as Alkon points out ‘in a world without any trace of Christianity. Remnants of an advanced technology’ such as airships and the ruins of advanced cities ‘provide appealing glimpses of what human civilization

might achieve if its reversion to barbarism could be turned around' [Alkon *Origins*, 165-6]. The complicated plot hinges on the question of whether Omegarus and Syderia will become a new Adam and Eve, re-populating the world; but the story mediates explicitly religious and explicitly materialist idioms in a way that makes it impossible to separate them. The novel ends with a general apocalypse, one partly familiar from the biblical *Revelation* of Saint John, but also described in ways incompatible with scripture; this end of the world is, rather nihilistically, the end full stop.

Gloomy visions of a specifically secular future apocalypse became a staple of English Romantic poetry. Charlotte Smith's poem 'Beachy Head' (1806) imagines a Britain fallen into ruins, an (in the words of Penny Bradshaw) 'almost post-apocalypse world in which the remaining human inhabitants are forced to return to pre-civilised existence and inhabit the wrecked shells of once impressive buildings' [Bradshaw, 6]. Anna Barbauld put her radical political sympathies into the very many heroic couplets of *Eighteen hundred and eleven* (1812), a poem which imagines the end of Britain's 'Midas dream' of prosperity, and dramatises wealthy American tourists ('from the Blue Mountains, or Ontario's lake', l.130) sightseeing in ruined London, 'the fractured arch, the ruined tower,/Those limbs disjointed of gigantic power', ll. 153-4). A much more complete evocation of apocalypse is 'Darkness' (1817) a broodingly powerful poem by George Gordon, Lord Byron, in which the sun is extinguished and the inhabitants of Earth live out the brief remainder of their days in desperation and despair:

I had a dream that was not all a dream.
The bright sun was extinguished, and the stars
Did wander darkling in the eternal space,
Rayless, and pathless, and the icy Earth
Swung blind and blackening through the moonless air. [Byron, 40]

Byron's friend Thomas Campbell wrote a Grainville-inspired poem entitled 'The Last Man' (1812) set 'ten thousand thousand years' in the future, although its solitary protagonist piously and un-Byronically declares that even the extinction of mankind cannot 'shake his trust in God' [Campbell, 232-4]. Mary Shelley's novel *The Last Man* (1826)—discussed below—and Thomas Hood's rather goofy poem 'The Last Man' (1829) are later examples of the same sub-genre. American poet Charles Ives imagines death looking down upon the tomb of the last man, although this vignette is not the end of his story. What, he wonders, if humankind were to be superseded by some new form of life?

And those who dwell where man before them dwelt,
May deem that earth was made for them alone;
But some may feel, as I have often felt,
That myriads have flourished and have gone,
Whose destinies and natures, now unknown,

Eternity's vast cycles may reveal;
 And some, to antiquarian research prone,
 Striving to break eternity's dark seal,
 May bid the wrought and scattered ore its history tell. [Ives, 98]

In all these texts, and to heightened and melodramatic effect, the action of time, either *longue durée* or else catastrophe-truncated, is to reduce 'man' as a large group to 'man' as an individual. It is, in other words, to literalise the sense of individual self-importance that attends the crystallising of the bourgeois Romantic subject as existential benchmark. These visions of end time touch on the sublime, and very specifically filter it through a representative egoist. That's what a last man, by default, must be.

It's worth adding that not all future-fantasies were limited to this apocalyptic last man idiom, just as not all Romantic poets wrote in the Wordsworthian or Byronic mode of the egotistical sublime. The 18th-century Enlightenment impulse to imagine rational possible future worlds continued to inspire writers. More balanced, neither overly pessimistic nor deadened by piety, was the detailed future world portrayed by German writer Julius von Voss in *Ini: ein Roman aus dem ein und zwanzigsten Jahrhundert* (*Ini: a novel from the twenty-first century*, 1810): a text set in a 21st century in which technological advances (eagle-drawn airships, motorised ships painted with waterproof paint) are matched by the socio-political sophistication of a happy, free populace. In 1834 Félix Bodin published *Le Roman de l'avenir* (*The novel of the future*), a novel whose relatively low contemporary profile has been boosted by Paul Alkon's compelling reading of it in *Origins of Futuristic Fiction* (1987) as providing, for the first time in the genre, a 'poetics for futuristic fiction'. The novel certainly does include a detailed preface in which Bodin argues that 'the epic of the future' (*l'épopée de l'avenir*) should be conceived using novelistic, rather than fabulist, satirical or merely utopian textual strategies, since the novel is best suited to the apprehension of how science and technology transform society. Still, it is possible for a reader to find the book duller and less inspiring than Alkon evidently does. Pitched somewhere between '*un burlesquement sérieuse et sérieusement burlesque*', *Le Roman de l'avenir* is as much a disquisition on whether imagining the future is best done in an optimistic or pessimistic frame of mind, as it is a novel. Top heavy with elaborately elongated dedication, preface and introduction, the novel's episodic narrative breaks off before it concludes. Still, as Alkon notes, 'no writer of futuristic fiction before Bodin actually created a novel whose elements all worked coherently to elicit a sense of the marvellous within a plausible framework of realistic setting and action' [Alkon, 246]. This did indeed become a governing aesthetic for the long tradition of subsequent future-fiction.

Amongst the strategies for mediating the strangeness of possible futures was comedy. Emile Souvestre's *Le Monde tel sera qu'il sera* (*The World as it will be* 1846) takes a less optimistic perspective than many, its future Tahiti being blighted by industrialism and mechanisation, although its vision is leavened

with a well-handled humour. An English dystopia from a few years later, the anonymously authored *The Last Peer* (1851) is set in a grimly over-industrialised 20th-century Britain, although it treats its topic with a slightly ponderous wit. In English author Catharine Irene Finch's Arabia-set novel *Noureddin, or the Talisman of Futurity* (1836) a specie of 'time viewer' comes into the possession of the titular character, a small 'casket' containing twelve ivory components that enables him to know the future. This foreknowledge brings him no joy, which circumstance the novel handles with an appealing lightness of tone.

EXTRAORDINARY VOYAGES AND AUTOMATA

The traditions of 18th-century *voyages extraordinaires* continued in the early century. American fabulist Washington Irving ironically reimagined the European colonisation of America in terms of an invasion of the Earth by Lunarians in *A History of New York from the Beginning of the World to the End of the Dutch Dynasty by Diedrich Knickerbocker* (1809). The men of the Moon 'riding on hyppogriffs [as in *Orlando Furioso*, 1534],—defended with impenetrable armour,—armed with concentrated sunbeams, and provided with vast engines, to hurl enormous moonstones' [Franklin, 252] overrun the Earth, treating its inhabitants as hopeless primitives. Irving's rather charming Lunarians have the distinction, as far as I am aware, of being the first *green-skinned* aliens in literature (they also have their heads under their arms, sport tails, stand on many legs and possess only one eye). English poet Percy Bysshe Shelley (husband of the more famous Mary) includes a journey round the solar system in his youthful allegorical poem *Queen Mab* (1813). More interesting than the rather conventionally elevated poetry of this work ('Earth's distant orb appeared/The smallest light that twinkles in the heaven; .../Innumerable systems rolled,/And countless spheres') is the extensive prose annotation which Shelley appended. Note 2, for instance, uses the vastness of the cosmos and the plurality of worlds as an argument in favour of Shelley's own atheism: 'the plurality of worlds,—the indefinite immensity of the universe is a most awful subject of contemplation. He who rightly feels its mystery and grandeur, is no longer in danger of seduction from the falsehoods of religious systems, or of deifying the principle of the universe' [Percy Shelley, 296]. Shelley takes the theologically destabilising Brunonian ideas of the plurality of worlds to a more rigorous materialist conclusion than most early practitioners of SF, although it should be added that, despite professing atheism, Shelley in fact believed in a universal 'principle of Necessity' that approximates more closely to Deism.

English utopian writing during this period was thinner on the ground; the cultural reaction against Napoleon's continental ambitions (until the Battle of Waterloo in 1815) creating a climate in which only radicals were prepared to follow French rationalist ideals to logical, or at least imaginatively propelled, conclusions. The four fat volumes of James Henry Lawrence's *The Empire of the Nairs, or the Rights of Women, A Utopian Romance* (1811) allow what could have been an interesting premise—a society which grants rights to women—to die slowly

of fatty degeneration of the imagination. The longer the book goes on the more boring it becomes. Indeed, though utopian novels continued to be published throughout the century, it was not until the 1880s and 1890s that they again enjoyed widespread popularity, a fact explicable either in terms of the shift in broader tastes, or the badness of the utopias actually published, or possibly both.

Dutch writer Willem Bilderdijk was predominantly a religiously inclined poet, but his novel *Kort verhaal van eene aanmerkelijke luchtreis en nieuwe planeetontdekking* (*Short account of a remarkable aerial voyage and discovery of a new planet*, 1813) took the 17th- and 18th-century traditions of *voyages extraordinaires* in a new direction. Bilderdijk's balloonist protagonist flies up to a planetoid that orbits the Earth within the atmosphere. This world is described in plausible terms (it possesses flora and fauna but no indigenous civilisation), and the book, though brief, has considerable charm. But its publication in Dutch, and the lack of translation into other European languages—until, that is, the late 20th century—seems to have severely limited its possible impact on the development of the genre.

Much more influential in the subsequent development of the genre was *Der Sandmann* (*The Sandman* 1816) by German writer and musician Ernst Theodor Amadeus Hoffmann. This spooky story relates how a supersensitive and poetic young man, Nathanael, falls in love with the beautiful Olympia; but he cannot see, until the end, what is obvious to everybody else in the story, that Olympia is an automaton, constructed by the sinister Doktor Coppelius. This simple-seeming story has had an astonishingly long life; both in its original form, and in interpretations such as Léo Delibes' ballet *Coppélia* (1870) and, more famously, Jacques Offenbach's popular opera *Tales of Hoffman* (1881). It remains a marvellously potent little piece. Hoffmann's story was also the subject of one of Sigmund Freud's most important pieces of literary criticism, *Die Unheimlich* (*The Uncanny* 1919). What is most characteristically Romantic about this tale is its deep comprehension of the way childhood, and young childhood in particular, shapes adult sensibility. Nathanael was terrified in his infancy by stories of the fabled Sandman who brings dreams to children; and Doktor Coppelius reignites this terror, which in part explains why he is so susceptible to the appeal of Olympia. Childhood in this sense—as a psychic substrate for adult life, the ground of later neurosis and terror (as opposed to childhood as a simple chronological phase of human immaturity)—is an invention of Romanticism. Freud's theories grew out of the climate bequeathed to the world by Wordsworth's insistence that 'the child is father to the man'. And if there is something infantile in Nathanael's blind love for Olympia, it also expresses a truth about love. As Birgit Röder points out, all of us 'see more in the object of our affections than the rest of the world does'. Hoffmann's fable positions Nathanael as a paradigmatic lover ('*Nur mir ging ihr Liebesblick auf und durchstrahlte Sinn und Gedanken* [Only I understood her look of love and it shone through my mind and my thoughts]', he says). 'The Romantic artist,' Röder argues, 'is in a similar situation to the lover in that both are distanced from the world of instrumental reason' [Röder, 60]. The uncanniness



Fig. 6.1 ‘Automaton Police Office’; a George Cruikshank illustration to Dickens’s *Mudfog Papers* (1838)

of *Der Sandmann* inheres in its sense that subjective intensity may be betrayed by the new technological objectivities precisely because our capacity for instrumental reason has been compromised—an intensely science fictional thesis.

Actual automata, most of them relatively simple clockwork devices, were popular in the 18th and 19th centuries, and they often appear in literature as a means of commenting comically or satirically upon the regimentation of human society. An early piece of Dickens’ journalism, for instance, imagines the ludicrous possibilities of automated policemen (Fig. 6.1).²

What gives Hoffman’s robot its enormous purchase on the European imagination is precisely its refusal of the comic possibilities of its premise. As Freud notes, Hoffman’s robot is ‘uncanny’, unsettlingly neither human nor non-human; a borderline creation of technology that forces the reader to reappraise her own relationship to notions of ‘humanity’ and ‘nature’. In this respect it anticipated, by only two years, an even more influential SF tale (although there is no evidence of direct influence) in which an ‘uncanny’ technological creation unsettles our assumptions about the identity of the human. This book has often been called the origin-point of all modern science fiction: *Frankenstein, or The Modern Prometheus* (1818) by Mary Shelley.

MARY SHELLEY’S *FRANKENSTEIN* (1818)

This study does not concur with the belief—so commonly stated by critics as almost to approach dogma—that (in Paul Alkon’s words) ‘Science fiction starts with Mary Shelley’s *Frankenstein*’ [Alkon, *Science Fiction*, 1]. This is

not to deny that the novel proved immensely influential upon subsequent SF. Chris Baldick's acclaimed study *In Frankenstein's Shadow* (1987) traces its presence in a myriad other texts, through Carlyle, Dickens, Marx and into the 20th century, via cinema, cartoons, comics, and many other examples of cultural dissemination. Indeed, so famous are these often distorting versions of the central mythos of Shelley's tale that it can be something of a shock for a reader to return to the original text. The narrator, Robert Walton, is a restless English gentleman who takes passage on a ship bound for polar realms in order to 'accomplish some great purpose' for which his soul yearns, although he is not specific about what [Shelley, 15]. In the Arctic he meets the scientist Victor Frankenstein, who is near death, and who tells his own story, a lengthy embedded narrative within Walton's frame. Frankenstein as a youth was 'deeply smitten with the thirst for knowledge' and after long researches in both alchemical and scientific texts he resolved upon 'the creation of a being like myself' [Shelley, 36, 52]. Frankenstein is deliberately uncommunicative about how he accomplished this action. 'I dabbled,' he says, 'among the unhallowed damps of the grave, or tortured the living animal to animate the lifeless clay ... I collected bones from charnel houses' [Shelley, 53]; although whether as raw materials or merely as a model to copy is not made explicit. Nor does he explain how he was able to 'infuse a spark of being into the lifeless thing' [Shelley, 56]. Some critics have seen this vagueness as a flaw in the novel, and it's tempting to believe that Mary Shelly had no idea how it was done and therefore threw a cloud of unknowing over her narrative. But not only has this non-specificity *not* adversely affected the book's popularity, it has worked in its favour. The 'spark' mentioned may only be a metaphorical turn of phrase. At least, there is no mention in the 1818 novel of electricity, although a second edition of the novel in 1831 included a preface in which Shelley suggests ways in which this conceptual gap might be filled in ('perhaps a corpse would be re-animated; galvanism had given token of such things: perhaps the component parts of a creature might be manufactured', Shelley 8). This oblique hint was taken up by later adaptors of Shelley's novel, the most famous of which, James Whale's 1931 film *Frankenstein*, revisions Shelley's dour creation scene with a climactic electrical storm in which a monster not 'manufactured' but rather assembled from dead body parts is brought to shuddering life.³

This is an important point, because Shelley's studied ambiguity of creation has licensed some critics to read the novel outwith the context of its contemporary discourses of science or technology. Frankenstein refuses to tell Walton the secret of his creation: 'I will not lead you on, unguarded and ardent as I then was, to your destruction and infallible misery. Learn from me ... [how miserable is] he who aspires to become greater than his nature will allow' [Shelley, 52]. The emphasis of the novel, in other words, is on the hubris of Frankenstein himself, and his ambition to usurp the status of God:

A new species would bless me as its creator and source; many happy and excellent natures would owe their being to me. No father could claim the gratitude of his child so completely as I should deserve theirs. [Shelley, 52–3]

The automaton (perhaps more robotic than zomboid, constructed as it is from 'lifeless matter', not bodies 'devoted ... to corruption', [Shelley, 53]) appals Frankenstein on its coming to life. In the first of a number of implausible plot-developments, the scientist flees his laboratory and apparently forgets that he has even created the creature in the first place. The monster, whose own narrative is the second narrative embedded within Frankenstein's (in turn embedded within Walton's) awakes as an intelligent but blank being, a Lockean *tabula rasa*. Lacking a teacher—the role Frankenstein irresponsibly abandoned—he soaks up experience from his immediate environment. But, so hideous in appearance, he encounters only hostility and persecution and flees to the wilderness. In a splendidly implausible development he learns to speak *and read* purely by eavesdropping on a rural family through a hole in their house wall. His nature now formed by the reactions people have had to him, and by textual identification with the three books he has read (*Paradise Lost*, *The Sorrows of Young Werther* and Plutarch's *Lives*), he has adopted a melodramatically antisocial and self-consciously tragic persona. Potentially good, he instead becomes malign, violent and even murderous. Tracking down his creator he demands that Frankenstein makes him a mate. Fearing for the lives of his friends and fiancée, Frankenstein at first agrees; but having constructed a female monster has a change of heart, struck that this monstrous bride would result in 'children, and a race of devils would be propagated upon the Earth' [Shelley, 160]. He tears the inanimate body of the female monster to pieces with his own hands. In revenge the monster murders Frankenstein's bride on his wedding night, and in turn Frankenstein pursues him across Europe and into the Arctic wastes. The novel ends with Frankenstein's death, and Walton's own encounter with the monster, who carries away the corpse of his maker, declaring 'I shall die ... polluted by crimes, and torn by the bitterest remorse, where can I find rest but in death?' [Shelley, 214].

Despite moments of rather adolescent over-writing *Frankenstein* remains a powerful piece of fiction. Brian Aldiss puts it well: 'despite her youth Shelley achieved something remarkable in this novel: the creation of a new archetypal figure' [Aldiss, 145]. Indeed, the archetype has tended to overwrite the actual novel. The manifold versions of the book (as, in Emma Clery's words, 'film icon, breakfast cereal, figure of speech', [Clery 126]) have effectively superseded the original text. One victim of this cultural dissemination, which Clery notes, is the loquaciousness of the monster; the eloquent narrator of the central third of the book is reduced to grunts and incoherence in later cinematic versions. In one crucial sense, the point of this text is precisely *to give a voice* to the monstrous outsider; and later adaptations, by removing that voice, have reverted to an older cultural model.⁴

De-emphasising the nebulous science of this science fictional tale, Franco Moretti has instead advanced a reading of the tale as ideology fiction—something not as far removed from science fiction as might be thought (ideology is a technology, after all, in the Heideggerean sense of an enframing of the world as 'ready-to-hand'). Moretti's persuasive reading of the book sees the monster as an emblem of the increasingly ubiquitous 'alienated' or 'monstrous' figure of

the industrial proletariat. The reason the novel has been so successful, Moretti implies, is that it touched a chord in early 19th-century culture that continues to resonate. Derationated, estranged from his or her labour, isolated and characterised as ‘monstrous’ by the ruling classes, the industrial worker bore much of the brunt of 19th-century economic downturns. Moretti suggests that ‘between Frankenstein and the monster there is an ambivalent, dialectical relationship, the same as that which, according to Marx, connects capital with wage-labour’ [Moretti, 83]. What cannot be denied, as Baldick’s study shows, is how common an icon Frankenstein’s monster went on to become as a visual shorthand for the threatening working-class mob, or for Fenian Irishmen, or any kind of extra-bourgeois group. According to this reading, what is ‘monstrous’ about the monster (a creature, like the proletariat, with enormous potential for good that is thwarted and turned to destructive ends) is precisely its aggregate nature, its brute strength, the fact that it stands outside the discourses of polite society.

Shelley’s other SF novel, *The Last Man* (1826), is a much less engaging work. The lengthy, and frankly dull, first part of this book concerns a 21st-century England after the abolition of the monarchy, centring on the political career of Raymond (modelled on Lord Byron) who seeks to become President. Things become more interesting with Raymond’s death in Constantinople of the plague, which disease then depopulates the entire globe, leaving the titular protagonist and narrator, Verney, in Rome, the last human being on the planet. As we have seen, this sort of secular apocalypse was a common trope in late 18th- and early 19th-century SF. In fact Shelley’s *The Last Man* fails precisely where *Frankenstein* succeeds so well; it cannot generate an archetypal resonance from its premise. Then again, in another sense it’s valid to see both novels as versions of one another. Both Verney and the Monster must face the cosmos alone, like the lone man on the mountain-top in Caspar David Friedrich’s celebrated 1818 painting *Der Wanderer über dem Nebelmeer* (*Wanderer above a sea of mists*).

We all face the chilly hostility and crushing scale of the cosmos revealed by post-Enlightenment science with the same blank slate subjectivity of the hunted Monster from Frankenstein. This newly revealed environment makes us all last men, or women.

This, I think, is the critical salient where Shelley’s epochal novel is concerned. It demonstrably has had a vast and enduring influence on the development of science fiction, and it is commonplace to treat it as a fable about science and unintended consequences, or an intervention into science more broadly conceived (see, for instance, Knellwolf and Goodall 2008). Deciding whether to read it as a symbolic articulation of social, cultural and (indeed) revolutionary politics, or to read it as the expression of the isolated consciousness of the sentient novum, will have consequences for how we then interpret the development of the genre through the 19th century and beyond.

An example of what I mean would be the scene in volume 2, chapter 3, where the monster, on the run, hides in the outhouse of a remote cottage. Inside the house live a virtuous, blind old man and his children Felix, Agatha

and Safie, and an Arabian maiden loved by Felix who is learning the language. This outhouse is attached to the back of the building like a kennel, and by eavesdropping on these people the monster learns not only to speak but to read—entirely unnoticed by the occupants of the cottage. The whole scene beggars belief, and would be comical if Shelley didn't play it so very straight.

One way of explaining it would be to argue that it is only ridiculous if we read it on the level of manifest content of the text. Take the monster, as Chris Baldick does, as revolution (stitched together from myriad ordinary bodies, bearing upon itself the marks of its violent history, potentially benign but turned to terror and horror by societal incomprehension and over-reaction)—that is, take the novel as a specifically post-1789, or post-1793 fable—and the scene becomes much less absurd. The thing about revolution is how enormous and obvious and inevitable it is, looming up at us; and yet people somehow contrive to continue living as if the *ancien régime* will never end. Poverty and injustice are so unmissable in the world, yet otherwise kind, literate people living in a cottage simply do not see them. The revolution is right there; you'd think people couldn't miss it. But they do miss it, right up until it starts pulling their heads off.

Then again, another way of explaining it would be to take the Monster as a potent emblem of existential solitude. Nobody really sees or hears the Monster—certainly not, as I have suggested, the many people who have adapted his story for other media by silencing him. They only notice what the Monster does, and even then only when he acts violently. The default state of this sensitive, intelligent being is isolation, and it is that loneliness that becomes refracted upon the uncaring world as terror. This is the novel less as political satire and more as dream—Shelley claimed the novel came to her in a dream, after all—and therefore potent and dream-haunting in ways Freud would go on to theorise, that have little to do with the historical contexts of revolutionary politics. According to this reading, Frankenstein's monster has more in common with Hoffmann's uncanny automata: alive yet not alive; human yet non-human; a psychological externalisation of our own subconscious terrified elation, or elated terror.

It is hard to deny that Shelley's novel evokes terror brilliantly, as existential unease and dread as much as shock and fear. Perhaps this is the way to bring these two prominent, seemingly opposed readings of the novel into constellation. What, to begin with, do we make of the creator's name, Frankenstein? It's a common-enough Germanic moniker, and although Shelley herself insisted that it had simply appeared in the dream-vision that occasioned the novel, critics have speculated whether it has some connection with Castle Frankenstein (Burg Frankenstein) in Hesse or Castle Frankenstein in Frankenstein, Palatinate. Such direct specificity is hardly the novel's currency. Alternately, we might take the first syllable, Frank, as a reference to France, by way of encoding, or else simply recording on a subconscious level, the French Revolution. The rest of the name invites more fanciful interpretation. I have sometimes wondered if the link to stone (*Stein* in German) might not connect with the French

for stone, *pierre*, as a sort of sidestep towards Robespierre, architect of the French revolutionary Terror. Like Frankenstein, a well-bred, well-educated man impatient with old forms, who wished to conquer the injustices of the world but who ended up creating only a monster of Terror. This may strike you as more tortuously implausible than it does me, for I tend to see in this rebus (Frankenstein = Frankish 'stone' = French [robes]-*pierre*) an example of the way the creative subconscious works. Like the revolution, the monster is a creature of power and uncanny novelty, brought into being with the best intentions, but abandoned by its architect and running into bloodsoaked courses of remorseless violence and terror. Which is to say, the monster emblematises revolution because it focuses *terror*. For an English liberal in the first decades of the 19th century there were two key revolutions in recent history: the French and the American. It may not be a coincidence that, after making his European monster, the French-Swiss Frankenstein is persuaded to make a second, on the understanding that the pair of monsters will emigrate to America. He changes his mind:

Even if they were to leave Europe and inhabit the deserts of the new world, yet one of the first results of those sympathies for which the daemon thirsted would be children, and a race of devils would be propagated upon the Earth who might make the very existence of the species of man a condition precarious and full of terror. [Shelley, 142]

That last word—terror—strikes the keynote. It chimes like a bell through the whole text. Terror, of course, was Robespierre's touchstone. Here, for example, is his *Discours sur les principes de morale politique* (1794):

Si le ressort du gouvernement populaire dans la paix est la vertu, le ressort du gouvernement populaire en révolution est à la fois la vertu et la terreur : la vertu, sans laquelle la terreur est funeste ; la terreur, sans laquelle la vertu est impuissante. La terreur n'est autre chose que la justice prompte, sévère, inflexible ; elle est donc une émanation de la vertu ; elle est moins un principe particulier, qu'une conséquence du principe général de la démocratie, appliqué aux plus pressants besoins de la patrie.

[If virtue be the motivating force of a popular government in times of peace, the motivating force of that government during a revolution is virtue combined with terror: virtue, without which terror is destructive; terror, without which virtue is impotent. Terror is only justice prompt, severe and inflexible; it is then an emanation of virtue; it is less a distinct principle than a natural consequence of the general principle of democracy, applied to the most pressing wants of the country.]

Terror is an emanation of virtue because it is the purest form of justice; and Frankenstein's mythic heft and potency derives surely in large part from the sense that there is a cruel, implacable *justice* behind the monster's violence. If people had treated him well, and seen past his hideous exterior, he would have repaid their trust. Because they treated him with violence and disgust, those are

the human qualities he mirrors back. I say ‘they’, but the novel’s skill consists in converting that to a ‘we’. This comes close to the secret eloquence of the book: that our creations will punish us, they will pursue us (as we pursue them, seeking to punish them); and that this will happen because, in a crucial sense, *they are us*. *Frankenstein* is a novel that says: out of ourselves and against ourselves comes the fiercest and most unrelenting urge to punish, to bring to justice, the most acute terror. Hazlitt once wrote ‘it is the wound inflicted upon our self-love, not the stain upon the character of the thoughtless offender, that calls for condign punishment. It is not the errors of others, but our own miscalculations, on which we wreak our lasting vengeance. It is ourselves that we cannot forgive.’ I can’t think of a book as eloquent in its apprehension of the dark truth embedded in that last sentence as *Frankenstein*.

What, then, is *Frankenstein*’s monster? It is revolution (and its bloody aftermath), *as myth*. It is the excavation of the guilt of Enlightenment creation and action bodied forth into the individual soul. It is, in short, a descent into Hell. Indeed, I would suggest, we can read the novel as a thoughtfully structured piece of mythic intertextuality about this great theme. I’m thinking of Western culture’s many narratives about infernal descent; in particular, think about Dante’s great *divina commedia*. Dante’s Hell is a funnel shaped cavern located inside the Earth—something Shelley’s own funnel-shaped narrative structure apes, with Walton’s frame narrative containing the smaller but deeper account of Frankenstein himself, and that circle of story containing again the smaller yet more profound narrative of the monster. Thinking in these terms perhaps explains some of the odder moments in Shelley’s text. For example, one stumbling block for many readers is Frankenstein’s weird hysterical amnesia—having spent months making his creation, he is so horrified by the result that he stumbles away and forgets all about it until four months later, when the monster’s murders bring it all back to him. A reader who judges by standards of psychological verisimilitude will find this hard to swallow; but to read it with a sense of the mythic provenance strikes a less jarring note—for of course entry to the underworld happens only after the shades of the dead have drunk of the waters of Lethe, or forgetfulness. By the same token, the novel’s final scenes in the frozen polar wasteland may be modelled on Dante’s final encounter with Satan at the conclusion of the *Inferno*: trapped forever not in fire, but embedded in a vast field of ice. The monster’s self-identification with the devil (occasioned by his intense reading of Milton’s *Paradise Lost*) only reinforces this hellish troping. The hell of Enlightenment liberalism is you, or your hideous, monstrous doppelganger, your creation, your child.

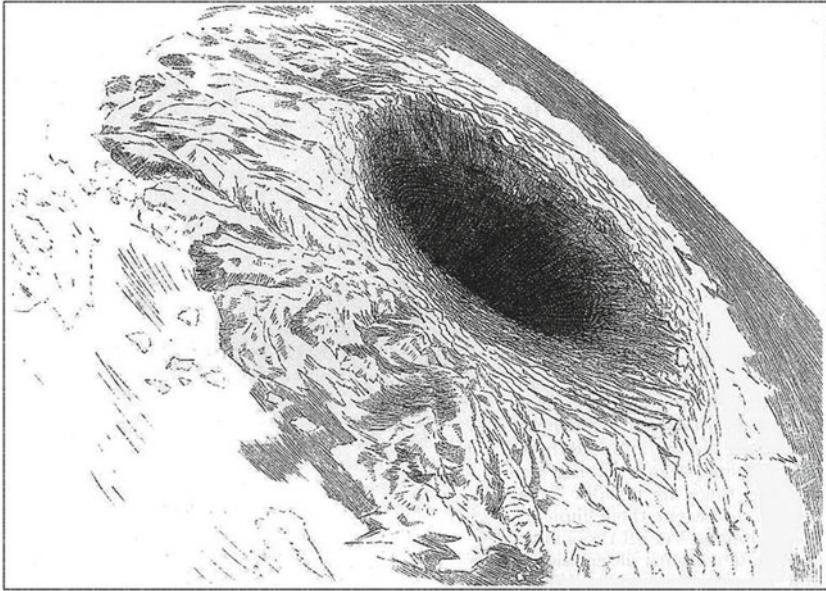
SF OF THE 1820S AND THE 1830S

Shelley’s influence, though large, was not immediate. Through the 1820s and 1830s most SF rolled in familiar grooves of subterranean adventure, future fantasy and journeys offworld. The whiff of the tedious-eccentric attaches to many of them. Thomas Erskine’s *Armata* (1817) concerns a Margaret Cavendish-

like sister planet to the Earth. A ship *en route* from New York to China is blown by storms to the South Pole, and thence into the world of Armata, connected to the Earth by a bizarre and apparently fluid pathway. The narrator at first believes that this new world proves that the Earth has ‘a ring like Saturn, which, by reason of our atmosphere, could not be seen’ and ‘which was accessible only by a channel so narrow and so guarded by surrounding rocks and whirlpools, that even the vagrancy of modern navigators had never before fallen in with it’ [Claeys, 6:6]. Later he decides that, rather than being a ring, this other world must be a connected globe, ‘the Earth and its counterpart ... like the chain of double-headed shot, both of which might revolve around the sun together, and the Moon around both [Claeys, 6:7]. (Rather implausibly, though, the traveller notes that ‘the heavens above presented new stars’ than any that could be seen ‘from either of our hemispheres’ Claeys, 6:13). Armata is a country on this world, a sort of anti-England; at war with Capetia (which is to say ‘France, after Hugh Capet (938–996) the founder of the Capetian dynasty which reigned in France until the revolution’ [Claeys 28n]). The narrator is given a tour of this improved version of England, and is impressed by what he sees. In one sense *Armata* is a work in the grand tradition of science fiction. The narrator, having described the society and culture of the Armatans, notes with some satisfaction: ‘I found they had a Revelation as we have—simple, eloquent, bearing throughout the stamp of divine truth, communicating, like our own, a fallen condition and a mediatorial redemption’ [6:141]. Close enough to the Earth to be in effect an extension of it, Armata need not trouble the Christian faith of its author by introducing the idea of a plurality of worlds.

John Trotter’s *Travels in Phrenologasto* (1829) takes its hero to the Moon by balloon, where he finds the lunarians to be not aliens but humans, descended from the Ancient Egyptians. The answer to this mystery lies in Trotter’s enthusiasm for phrenology. It turns out that ‘so great was the progress which our ancestors made in craniology ... that at length they brought the development of all faculties of the mind to the very highest perfection’ [7:167], invented a balloon and colonised the Moon—a utopia founded on ‘the important truth ... that the basis of all knowledge is virtually situated in the shape of the skull’ [7:168]. Phrenology leads to a perfect utopian state, because, as Trotter says, ‘as everybody in the state is legally obliged to go with his head uncovered, this very happily precludes all deception, and enables the world to know at once a knave from an honest man’ [7:218].

Adam Seaborn (presumably a pseudonym, although the identity of the author has not been uncovered) published his *Symzonia: a Voyage of Discovery* in 1820. The title alludes to the theories of the American John Symmes, who issued a brief manifesto of his belief that the Earth is hollow in 1818, and who may have been the author of the fiction. Seaborn imaginatively explores this idea—a notion with a long history in science fiction (as we have seen, at least back to Kircher in the 17th century and Holberg and Casanova in the 18th)—relating his own voyage to the North Pole, which he describes as a concavity. Travelling through the polar hole brings Seaborn to an ideal land of ‘gently rolling hills within an easy



SYMMES'S HOLE, AS IT WOULD APPEAR TO A LUNARIAN WITH A TELESCOPE.

Fig. 6.2 A visualisation of Symmes' Hole, from *Harper's New Monthly Magazine*, 1882

sloping shore, covered with verdure, chequered with groves of trees and shrubbery, studded with numerous white buildings ... here was nothing wanting to a perfect landscape' [Seaborn, ch. 7]. The natives salute him by pulling on their noses, and give him a tour of their utopian environment by flying machine. The whole interior world is lit by the same sun as lights the exterior world, its rays refracted through the polar holes in accordance with Symmes' theories (Fig. 6.2).

Symmes was regarded as a crank by many (the phrase 'Symmes' hole' became, in the 1820s and 1830s, a slang term meaning something quackish or fake). Nevertheless the US Congress thought seriously enough of his theories to vote funds for an expedition to the South Pole to uncover his supposed hole (this was the Wilkes Expedition of 1838–42, and it failed to locate Symmes' hole). *Symzonia* is more a curiosity than a satisfying novel, too largely given over to dry lectures on geography and social structures. But hollow-Earth adventures continued to be a popular mode of writing. For instance, *The Fountain of Arethusa* (1848) by Robert Eyres Landor tells of a journey into a utopia located in the Earth's centre, reached by an underground river below Derbyshire. This realm has its own sun, and is modelled on an idealised ancient Greek and Roman model.

A novel more often advanced by critics as a significant work of 19th-century SF is *The Mummy! A Tale of the Twenty-Second Century* (1827) by British author Jane Loudon (née Webb). A spirit gives the narrator a scroll which is 'the Chronicle of a future age', urging her to turn it into a novel. The tale

that follows includes some retrospectively (from a 21st-century perspective) interesting speculations about future society, but is dominated by a wild and rather crazy Gothic plot. In the 22nd century Britain is again a Catholic country, a tunnel links England and Ireland and technological advance has resulted in dirigible transportation and electrically operated lawyers. Loudon's tone is largely satirical, stressing the incompetence of the lawyers and the pollution entailed by future modes of transport. In Egypt two characters penetrate the Pyramid of Cheops and reanimate the mummy therein with electricity:

Another fearful peal of thunder now rolled in lengthened vibrations above his head, and the Mummy rose slowly, his eyes still fixed upon those of Edric, from his marble tomb. The thunder pealed louder and louder. Yells and groans seemed mingled with its roar—the sepulchral lamp flared with redoubled fierceness, flashing its rays around in quick succession, and with vivid brightness; whilst by its horrid and uncertain glare, Edric saw the Mummy stretch out its withered hand as though to seize him. He saw it rise gradually—he heard the dry, bony fingers rattle as it drew them forth—he felt its tremendous gripe—human nature could bear no more—his senses were rapidly deserting him; he felt, however, the fixed stedfast eyes of Cheops still glowing upon his failing orbs, as the lamp gave a sudden flash, and then all was darkness! [Loudon, 1:220]

This passage gives a flavour of Loudon's rather gnashing prose, if the exclamation point in her novel's title hadn't already tipped us off. Cheops escapes to England where he becomes involved in a plot to control the choice of the next Queen of England. By the novel's end it transpires that the mummy is actually a force for good, reanimated not by electricity but by 'God's will'. More explicitly than Mary Shelley's ur-text, Loudon's novel dramatises the dialectic between technology and religion that continues to determine the development of the genre.

Russian author Prince Vladimir Odoevsky is often compared by critics with Hoffmann, who certainly seems to have been the inspiration behind the story 'Fairy Tale about the danger of young ladies walking along Nevsky prospect' (1833), in which a beautiful girl is kidnapped by a shop-owner, turned into a mannequin, and sold to a young man. By the time this latter realises that she is alive it is too late. Odoevsky's later '4338-й год' ('The year 4338', 1840) is a liberal technological fantasy of the relatively distant future, although it was never completed. Another future-fantasy was British writer R F Williams' *Eureka: a Prophecy of the Future* (1837), which looks forward to a time when Africa is the dominant world-power and Britain a forgotten backwater. Alfred Tennyson provided one compact little future-narrative encompassing aerial trade, aerial war and a World State, in his poem 'Locksley Hall' (1841):

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that would be;

Saw the heavens fill with commerce, argosies of magic sails,
Pilots in the purple twilight dropping down with costly bales;

Heard the heavens fill with shouting and there rain'd a ghastly dew
 From the nations' airy navies grappling in the central blue;

....

Till the war-drum throb'd no longer, and the battle-flags were furled
 In the Parliament of man, the Federation of the world. [Tennyson, 123]

The very compression of these images gives them a compact power missing from the often prolix prose future-imaginings of Tennyson's contemporaries—such as the 5,000-years-in-the-future fantasy *The Air Battle. A Vision of the Future* (1859), by Herrmann Lang (an unidentified pseudonym), where Tennyson's 'airy navies' and their battles are dramatised in detail—although in this novel they are flown not by Britain but by the empires of Brazilia, Madeira, and Sahara. Britain has been surpassed as an imperial power.

In the comical 'Christmas Story' by Charles Rowcroft, *The Triumph of Woman* (1848), a meteor crashes into a German astronomer's house. Out of it comes a humanoid alien who learns German instantly by pressing a finger to the astronomer's head and telepathically absorbing the language. He also possesses the ability to turn metal into gold; but he has left his planet because there are no women upon it, a circumstance that leads to the following rather tantalising exchange: "But how do you keep up your population?" asked the apothecary. "By magnetism," replied the planetarian.' [Claeys, 8:291]. The book shifts gear into a love story, as the visitor, called Zarah, falls in love with the astronomer's daughter, and we find ourselves in the realms of Victorian domestic fiction.

On the other side of the Atlantic the journalist Richard Adams Locke concocted a rather lumpen hoax 'Great Astronomical Discoveries Lately Made by Sir John Herschel ... at the Cape of Good Hope' for the New York *Sun* in 1835. On its publication many people believed it to be real, although it is hard in retrospect to see why they were taken in. The account details an implausibly effective reflecting telescope through which Herschel was reported to have observed lunar vegetation, varieties of cow and sheep, and several species of lunarian alien, some of them winged. Locke's *jeu d'esprit* is mentioned now only because it annoyed one of the great SF fabulists of the age, who attacked it in print, and wrote his own lunar fantasy to surpass it, Edgar Allan Poe.

EDGAR ALLAN POE

American writer and journalist Edgar Allan Poe has exercised a particularly powerful influence on subsequent generations of American readers and writers. He wrote in a rather rank 'high' style, of the sort that people who don't know any better sometimes describe as 'fine writing', and he occupies an elevated position in the canon of US literature. His eminence, indeed, may puzzle us, for he is prone to prolixity, his frequent attempts at humour are heavy and unamusing and his characterisation is thin. And yet, the potency and brilliance of his imagination, especially in his SF tales, can root his writing in a reader's

mind in a way that better writers often fail to do. Most of his stories are gothic, tales of hauntings and communication beyond the grave, or uncanny events and bizarre murder mysteries; but a significant portion (perhaps a fifth) of his output was SF, and this includes some of his very best work.

Just as some critics describe Mary Shelley as the starting point of modern SF, so Edgar Allan Poe has his enthusiasts as the originator of the genre. Thomas Disch says it straightforwardly: 'Poe is the source' [Disch, 34]. Brian Aldiss, who thinks Mary Shelley is 'the source', nevertheless traces the notion that Poe is 'the father of Science Fiction' all the way back to an anonymous review in 1905. 'The notion has rattled about ever since,' Aldiss comments, a little sourly, 'like the living dead.' Aldiss thinks that 'Poe's best stories are not science fiction, nor his science fiction stories his best ... far from being the Father of Science Fiction, this genius bodged it when he confronted its themes directly' [Aldiss, 58-9, 63]. He detects a fundamental inarticulacy in his work that is more artistically debilitating than the immaturity and schlock that other critics have sometimes identified as fatal flaws. Disch admits the immaturity and schlock, arguing that SF as a whole has often traded in the same currencies, and asserting, surely correctly, that for all his over-the-top faults there is *something* about Poe, some powerfully imaginative ability to reach the reader. That instinct, and that rightness, find their science-fictional expression above all in a dialectical balance between science and magic, between rationalism and mystic fantasy, that is (as this study has been arguing) the precise determinant of SF as a historical mode of writing. An early long poem, 'Al Aaraaf' (1829; the title is, Poe's own note makes clear, the name of a star 'discovered by Tycho Brahe which appeared suddenly in the heavens' and then 'as suddenly disappeared') is almost 17th century in its assumption of a galaxy barred to mankind to save alien life from the sin of Adam. God addresses the spirit of this new star, instructing it to

"Divulge the secrets of thy embassy
To the proud orbs that twinkle—and so be
To ev'ry heart a barrier and a ban
Lest the stars totter in the guilt of man!" [Poe, 43]

A similarly archaic religious sensibility flavours the otherwise hard SF narratives of other tales. 'The Conversation of Eiros and Charmion' (1839) concerns the destruction of the world by a comet, not by simple collision (although this is what the globe's inhabitants fear) but rather because its near passages infuses so much oxygen into the Earth's atmosphere that apocalyptic fires become inevitable. It is a compelling little disaster story, but Poe frames it with the conversation of the figures mentioned in the tale's title; two disembodied spirits dwelling in Aidenn, after the end of the world, recalling the disaster as a theological object lesson ('let us bow down, Charmion, before the excessive majesty of the great God!', Poe, 363). A similar tale, 'The Colloquy of Monos and Una' (1841) efficiently encompasses future humanity's abuse of its world:

‘huge smoking cities arose, innumerable. The fair face of Nature was deformed’ [Poe 451]. The narrator recalls her life, and then her death and rebirth into the ‘Life Eternal’. ‘The Facts in the Case of M. Valdemar’ (1845) a sick man is mesmerised on the point of death, turning him into a sort of undead zombie.

This reaches a sort of climax in Poe’s last major work, *Eureka: a Prose Poem* (1849), subtitled ‘An Essay on the Material and Spiritual Universe’. This lengthy prose disquisition attempts to marry contemporary scientific and astronomical knowledge with a quasi-idealist religious sensibility in which the whole cosmos is governed by a divine ‘Oneness’. *Eureka* recounts Laplace’s theories on the origin of the solar system, and Mädler’s theory that the Milky Way Galaxy has at its core a hugely massive object that is attracting all the stars. It also posits a version of an originary big bang, and insists that everything will tend towards a big crunch; not because Poe has any observational data to this effect (the work begins with an elaborate dismissal of empirical science in favour of ‘instinctive’ or ‘intuitive’ reasoning), but because he believes the cosmos, or God, to be a unity that operates according to dialectical principles of ‘attraction’ and ‘repulsion’. Some recent critics have attempted to resuscitate *Eureka* as a legitimate work of philosophical cosmology. It isn’t that, though. Poe’s scheme is metaphysically muddled, and for every lucky guess (for instance, the big bang) there are a dozen errors that are culpable, even by the standards of mid-19th-century science: that electricity is a ‘principle of repulsion’; that the planet Venus is ‘wildly self-luminous’; that the evolution of new species on Earth was provoked by the successive creation of planets out of the solar nebula; right down to the old Keplerian chestnut that a harmonious mathematical relation governs the respective distances of the planets from the sun—Poe believes this to be the inverse square law, which he thinks a ubiquitous mathematical truth of the universe.⁵ But, in a sense, this does not matter, for Poe puts all his scientific reading and astronomical speculation into the same mill to grind out one conclusion, that the big crunch at the end of time will unite matter and spirit, and turn everybody into God.

When the bright stars become blended ... [Man] ceasing imperceptibly to feel himself Man, will at length attain that awfully triumphant epoch when he shall recognize his existence as that of Jehovah. In the meantime bear in mind that all is Life—Life—Life within Life—the less within the greater, and all within the *Spirit Divine*. [Poe, 1358–9]

There are respectable cosmological scientists today (I am thinking of Frank Tipler’s work of speculative science *The Physics of Immortality: Modern Cosmology, God and the Resurrection of the Dead*, 1995) who concur with Poe’s windy mysticism here, but it represents a fantasy rather than an SF vision.

The best of Poe’s SF tales are those in which this misty-eyed religiosity is abandoned in favour of a Gothic sublimity, or else a satirical levity, either of which more effectively leavens Poe’s science-based premises than conventional Theism. ‘Mellonta Tauta’ (1849: the title is Sophoclean Greek for ‘those things

that are to be') is set in the year 2848 and uses the form of a balloon journey across the Atlantic to comment, satirically, upon the USA of a thousand years before. This tale uses draft material that was later incorporated into the piously straightlipped *Eureka*, but works much more effectively, with its glimpses of future technology and a future world—its emperor, its ideology that 'no such thing as an individual is supposed to exist', and its affluent inhabitants watching the cosmos through powerful telescopes:

[I] watched with much interest the putting up of a huge impost on a couple of lintels in the new temple of Daphnis in the moon. It was amusing to think that creatures so diminutive as the lunarians and bearing such little resemblance to humanity, yet evinced a mechanical ingenuity so much superior to our own. [Poe, 882]

Poe's most famous literary achievement, his short novel *The Narrative of Arthur Gordon Pym* (1838), moves from a conventional sea-adventure tale (rather bloodthirsty and written in an unusually fruity manner) into something far stranger at the end, where the narrator discovers bizarre lands and cultures towards the South Pole. Indeed, this novel shares with the earlier short story 'MS Found in a Bottle' (1833) a hidden hollow-Earth theme. In the latter story, a brilliantly effective Poe tale, a mariner is swept aboard a massive and technologically advanced ship crewed exclusively by very old individuals who ignore him, and pursue their course relentlessly through stormy seas to the South Pole. Arthur Gordon Pym likewise details a voyage to the far south. In both cases the incidental details resemble *Symzonia* (which Poe almost certainly read), and in both cases the stories end abruptly, hinting that both protagonists are headed for an interior world.

The acme of Poean science fiction, however, is the superb 'The Unparalleled Adventure of One Hans Pfaall' (1835), a quasi-scientific narrative relating a journey to the Moon by balloon. Here, in effect, Poe rewrites Kepler's *Somnium* (Poe's *Eureka* praises Kepler, 'that divine old man', as a greater genius than Newton, Poe 1270) substituting *fancy* for the darker witchery-magic of Kepler's original, but otherwise maintaining a close interrelation between the science and the fiction throughout. The text is divided into three parts. A brief, four-page opening section describes the 'high state of philosophical excitement' of the Dutch city of Rotterdam, occasioned by the appearance of a balloon made of dirty newspapers piloted by a very strange figure, 'two feet in height' with a huge nose and no ears [Poe, 'Hans Pfaall', 953]. This seeming lunar alien brings the balloon to within a hundred feet of the ground, drops 'a huge letter sealed with red sealing wax' over the side, and then ascends rapidly. The second portion of the story, constituting the bulk of the narrative, gives us the contents of this letter, Hans Pfaall's own account of his outlandish adventures. He introduces himself as a Rotterdam bellows-mender, with a family to support, who had fallen on hard times. In debt, he hatched a scheme to build a balloon and (inspired by 'a small pamphlet treatise on Speculative Astronomy ... by Professor Encke of Berlin') to pilot it to the Moon. The canopy of this

balloon is not filled with air, but something far lighter, on the nature of which Pfaall is a little reticent: 'I can only venture to say here, that it is *a constituent of azote* so long considered irreducible, and that its density is about 37.4 times *less than that of hydrogen*' [Poe, 'Hans Pfaall', 958]. This spacecraft is launched on the 1st of April. The following 30 pages are given over to a detailed account of his voyage to the Moon, flying through the attenuated but not vacuum interplanetary atmosphere. On the 19th day of his voyage he finds himself plummeting towards the Moon's surface, and is forced to throw overboard all his ballast including, eventually, the car itself:

And thus, clinging with both hands to the net-work, I had barely time to observe that the whole country as far as the eye could reach, was thickly interspersed with diminutive habitations, ere I tumbled headlong into the very heart of a fantastical looking city, and into the middle of a vast crowd of ugly little people. [Poe, 'Hans Pfaall', 993]

But here Pfaall breaks off his narration, with the promise of more interesting revelations to come if the burghers of Rotterdam are first prepared to give him 'a pardon for the crime of which I have been guilty in the death of my creditors upon my departure' [Poe, 'Hans Pfaall', 995]. In a page-long coda Poe relates 'astonishment and admiration' of the people of Rotterdam, and then immediately undercuts the veracity of the narration by itemising certain salient facts: that 'an odd little dwarf and bottle conjurer, both of whose ears, for some misdemeanour, have been cut off close to the head, has been missing for several days from the neighbouring city of Bruges'; that 'the newspapers which were stuck all over the little balloon were newspapers of Holland and therefore could not have been made in the Moon'; and that Pfaall himself, 'the drunken villain', has been seen drinking 'in a tippling house in the suburbs' with the 'three very idle gentlemen styled his creditors' [Poe, 'Hans Pfaall', 996].

Poe's appetite for hoaxes is one aspect of his genius for which critics today have little sympathy, and the heavy-handed 'hoax' ending has perhaps done more to sink 'Hans Pfaall' in critical estimation than anything else. Criticism nowadays has little purchase on the hoax as literary form. Once the critic has distanced herself from the anxiety of 'being taken in', and once the acknowledgment has been made that hoaxes are supposed to be *funny*, there is little more to say apart from laboriously explaining the joke—and a joke explained ceases to be funny. So, Harold Beaver plots out the various fooleries in the text, notes that Pfaall lifts-off on April Fool's Day, that his balloon is shaped like a 'fool's cap', and that the burgermeisters all have ridiculous names (Professor Rubadub, Mynheer Superbus Von Underduk and so on). Pfaall actually flies to the Moon by utilising the principle of levity, and metaphorical levity is what Poe aims for with his puns and jokes. His hoax inverts normal expectations, and turns the logical world upside down. 'Invert "phaal"', Beaver notes (referring to one of Poe's variants of the name 'Pfaall'), 'what sound do you hear but "*laugh*"?' [Beaver, 339].

But Poe is doing much more with his hoaxing textual strategies than simply having a laugh. He uses some of the conventions of the April Fool's joke, playing them off against the codes of scientific investigation, precisely in order to explore the dialectic relationship between ludic playfulness and scientific seriousness. This same dialectic is also the aesthetic underpinning of science fiction, the interplay between the imaginative and the scientific. Poe's skill is in the balancing of the two elements. We are given a narrative of journeying to the Moon in a balloon; it is clearly more 'plausible' that this is a hoax, a fantastical story, than that Pfaall *actually* travelled to the Moon in such a manner. In the real world, such journeying is impossible. Still, when Poe divides his narrative between the real world of Holland in the 1830s on the one hand, and the balloon-journey through space to the Moon on the other, it is the real world that is rendered in a fantastical manner, and the implausible balloon journey that is treated with pseudo-scientific precision. Rotterdam, a real city, is populated with people named Rubadub and Underduk, with earless dwarfs and balloons made out of newspaper. When Poe details the actual, he adopts an archly satirical tone; Pfaall complains that it is the general march of the time towards 'liberty, and long speeches, and radicalism, and all that sort of thing' that bankrupted him as a bellows-mender, 'if a fire wanted fanning, it could readily be fanned with a newspaper' [Poe, 'Hans Pfaall', 955]. This, together with the 'balloon manufactured entirely of dirty newspaper' in which the dwarf/moonling descends at the tale's opening, points to some self-referential satire on behalf of Poe, a newspaperman himself. Newspapers, the implication runs, fill people's heads with ridiculous notions like liberty and radicalism, things of which the conservative Poe broadly disapproved. At the same time as paying him money and giving him an outlet for his imagination, papers like the *Southern Literary Messenger* and the New York *Sun*, floated their gullible readers metaphorically off solid Earth into airy, lunatic speculation.

Poe's real stroke of genius was to record the balloon journey itself with a scrupulous stylistic exactitude that lifts the whole out of the historically specific quagmire of 1830s satire into a mind-expanding realm of SF. There is a greater imaginative gravity and appeal, a greater literary punch, in this aspect of Poe's conception than in the puffed-up ridiculousness of the 'real' world described. He gives us numerous pseudo-scientific observations, performs experiments upon the birds and cats he has brought with him, and leavens his account with various precise-looking numbers. On the 4th of April he declares the balloon to have reached '7254 miles above the surface of the sea', an impressive height but a tiny fraction of the '231,920 miles' or '59.9643 of the Earth's equatorial *radii*' he has calculated as the distance he has to go. When Mary Shelley writes the fantastic elements of *Frankenstein*, she adopts a strained, elevated Gothic-sublime tone of voice; when Poe writes about the fantastic in this story he does so in as matter-of-fact a manner as he can.

This, in the final analysis, may be Poe's most significant contribution to the genre. It is in his conviction, expressed in *Eureka*, that the *intuitive imagination* (rather than deductive or inductive reasoning) should be the motor of advance-

ments in science. In other words, his philosophy was Feyerabendian *avant-la-lettre*, and it was when he granted his own astonishing imagination the freest reign, when he yoked it least to conventional religious piety, that he wrote his very best SF; and when he blazed a path for subsequent writers in the genre.

GEOFFROY AND THE INVENTION OF ALTERNATE HISTORY

Less well-known than either Shelley or Poe, Louis-Napoléon Geoffroy (a surname later changed to 'Geoffroy-Château') made one major contribution to the developing tradition of SF. He was not the first to write an alternate history, but by inflecting alt-history via the last man logic of the Romantic period, and by working *systematically* at his premise, Geoffroy produced the template that this important sub-genre went on to follow. Geoffroy's novel was originally published as *Napoléon et la conquête du monde* in 1836, and revised in 1841 as *Napoléon Apocryphe*. Its Jonbar point—to use the term that pinpoints the moment an alternate-history deviates from 'actual' history—is Napoleon's successful invasion of Russia in 1812. After this, and in short order, the French emperor conquers English in 1814, and then the rest of the world, leading it into a new golden age of technological advance, peace and prosperity.

Several episodes in the novel particularly epitomise something important, if implicit, in the way Geoffroy conceives of history as such. The first is the ease with which Napoleon conquers the USA. Revolution has so weakened this nation that it simply collapses.

Depuis plus de vingt années, L'Amérique, cette terre sans passé, sans races, sans patries, qui, pour remplacer ses enfants égorgés, avait mendié à L'Europe son trop plein de peuples et à L'Afrique le marché de ses douleurs; cette terre qui, sans avoir eu de jeunesse, était arrivée à la décrépitude au milieu de révolutions innombrables, l'Amérique se dissolvait, et tendait à une ruine complète. [For more than two decades, America, this land without past, without races, without countries, has had to replace its own murdered children by begging Europe for its excess population and trade with Africa at the market of its miseries; this land that, without ever having been young, had arrived at decrepitude in the midst of endless revolutions—America was dissolving, heading for complete ruin.] [Geoffroy, 415]

What can be done to assist this benighted place? Only Napoleon can save it; the Americans have no future outside Napoleonic rule ('*Napoléon seul pouvait sauver l'Amérique ... dans tous les cas, il n'y'avait plus de salut pour elle en dehors de la monarchie napoléonienne*'). America is hardly central to Geoffroy's novel. It's invoked, I think, as an example of history itself as a sort of short-circuit; a country with no history of its own, it has passed directly from '*le jeunesse*' to '*la décrépitude*' without any intervening historical narrative at all. It subsists, vampire like, by devouring the children of Europe and the slave labour of Africa. There is no hope for such a catastrophically extra-historical place except through Napoleon himself. In other words, Geoffroy's Napoleon embodies a sort of solution for history itself.

This early imagining of America as, in effect, a place where history has been botched, or chaotically circumvented is intriguing. We could say that the USA ‘has’ history in two contradictory ways at once: it has too little history to be properly grounded, since it is a new or only potential nation; and it has too much history, as the dead hand of the old world is carried through by its settlers. There’s a third history too, of course, one perfectly invisible to Geoffroy in the 1830s, the history of its native inhabitants. But this is a history inassimilable to the model of the Old World: it is not bookish, not linear, not Whiggish, neither Herodotean nor Thucydidean. It is these latter modes of history that the novel steps completely beyond, whose alternative (Napoleon) brings the only possible stability. To a large extent, this historical problematic has fed through to the genre of alt-historical writing today. America (we could say) ‘has’ more history now than once it did, and a great deal of alt-historical writing has explored American settings—the Jonbar point of a Confederate victory in the Civil War is almost a cliché of the genre. Still, in Murray Leinster’s celebrated short story ‘Sidewise in Time’ (1934), alternative history generates a kind of crazy-paving chaos out of America, not a million miles away from Geoffroy’s failed state. Even in Ward Moore’s splendid novel *Bring the Jubilee* (1953), the richly imagined alternate North America (in which the Confederacy won) exists only for the novel’s time-travelling historian protagonist to revert history back to *our* timeline.

In the timeline of *Napoléon Apocryphe* 1827 is the year global conquest is completed, and ‘Universal Monarchy’ finally instituted:

La monarchie universelle! Combien ont prononcé ces mots qui ne comprenaient pas l'idée qu'ils renferment. Combien le sont balbutiées et répétées froidement ces paroles: enfants, hommes, pédants et rois, qui ne savaient ce que c'était que la monarchie universelle, pas plus que l'infini et que Dieu, dont à chaque instant leurs bouches murmurent les noms. [Universal monarchy! How many have uttered those words without understanding them? How often are they stammered out, coldly repeated by children as by men, by pedants and kings, who had no more idea of their meaning than they did of infinity or God, words their mouths were constantly murmuring.] [Geoffroy 412]

Geoffroy thinks of Napoleon as Napoleon thought of himself, a man elevated above the common herd, looking down upon the ideological and political mists of the world, like the figure in that Friedrich painting. The articles of the new Napoleonic world order include: ‘*Art. 1. Les continents, les îles et les mers qui couvrent la surface du globe composent la monarchie universelle* [all the world’s continents, islands and seas are part of the Universal Monarchy]’; and ‘*Art. 3. La monarchie universelle réside en moi et dans ma race à perpétuité* [I and my descendants own this Universal Monarch forever]’. Paris is made capital of the world and Christianity the only world religion. This distilled essence of totalitarianism makes some of the other articles (for instance the abolition of slavery: ‘*Art. 9. L’esclavage est détruit*’) rather ironic.

Geoffroy appropriates the date of the American Independence Day in order to overwrite US exceptionalism with his own vision of French metahistory. Everyone seems blithely accepting of Christianity as the sole global religion, including all the Jews, with one single exception, the only man to repudiate Napoleonic rule and Christianisation:

Samuel Manassès, rabbin de Strasbourg, protesta avec la plus grande violence contre la décision de ses frères, et, dans un moment d'exaltation, il s'écria: 'a que le Christ signale donc sa vérité et sa puissance! Pour moi, fidèle à la loi de mes pères, je le blasphème hautement, et je défie le dieu des chrétiens!' [Samuel Manassas, a Strasbourg Rabbi, protested violently against the decision of his brothers, and in a moment of exaltation he cried out: 'oh that Christ should thus signal his truth and power! For myself, faithful to the law of my fathers, I blaspheme strongly against him, and I defy the Christian God!'] [Geoffroy, 435]

But this protest doesn't last long: stubborn Manassas is touched by '*le doigt de Dieu*', has a fit, falls to the ground and dies there and then. So much for him! '*Cette circonstance extraordinaire,*' Geoffroy adds blandly, '*porta le dernier coup à la religion juive, elle expira cette année avec le culte et les constitutions de Moïse*' [this extraordinary event delivered the final blow to the Jewish religion, which died that same year, along with the whole cult and constitution of Moses]. The Jews ('*cette nation-mystère*' Geoffroy calls them), of course, stand for the opposite sort of historical force to the Americans. They embody not too little but too *much* history; the antique law that must be overcome for the a-historical, alt-historical Napoleonic utopia to come into being. But if overcoming too little history is a simple matter of military conquest, overcoming too much requires this extraordinary (in several senses) divine intervention.

French is made the universal language; everybody is happy and at peace. Of course '*l'empereur conserva son immense armée*', but you'd hardly expect him to give it up, now, would you. Napoleon draws up a plan to eliminate all other races by selective breeding over seven generations ('*arriver à la suite de quelques générations à une unité de race et de couleur*') and he makes great strides in science, including the invention of superfast trains ('*des voitures qui volaient avec la rapidité de la foudre sur les routes en fer*') and a fleet of '*ballons aérostatiques*' powered by '*les forces magnétiques avec l'électricité*'. There are odder inventions too, including pliable soft-glass ('*le verre, si résistant et si friable, s'amollit sous les doigts de la chimie, il se plia comme une cire assouplie*'). Actual mathematical impossibilities are accomplished, including squaring the circle: '*Une merveilleuse inutilité, long-temps crue impossible, la quadrature du cercle, fut découverte dans des circonstances singulières*' [marvellous, if useless, something long since thought impossible was accomplished: squaring the circle, discovered in the most singular circumstances]. Finally, a new planet is discovered ('*la planète de Vulcain*'). The book doesn't say so, but maybe Napoleon goes off to conquer that one next. These literal impossibilities, mixed in with the various mere improbabilities, speak to the contradiction the novel acknowledges without

making explicit. Napoleon becomes a kind of transcendental signifier, a magic finger capable of altering not just the material but the *spiritual* facts of history.

The contrast that comes with most force to one's mind, of course, is another, rather more famous literary representation of Napoleon from the 19th century, Tolstoy's *Война и миръ* (*War and Peace*, 1869). The whole of this novel's dramatisation of Napoleon—as a man self-deluded about the power he has to shape events—is hammered home by the second part of the novel's epilogue, a lengthy essay on history that lays out Tolstoy's objections to the 'Great Man Theory' of historical change. For Tolstoy, all historical events are the result of millions of smaller events driven by the huge numbers of ordinary individuals that constitute humanity. The comparison he makes is with calculus, and the recently discovered ability of mathematicians to sum infinitesimals. This in turn expresses a fundamental logic of individual human life, which is determined by an inverse relationship between necessity and free will, necessity for Tolstoy being defined by reason and therefore explicable to historical analysis, where free will is consciousness and therefore inherently unpredictable. In other words, Tolstoy is the great *anti*-alternate-historian. He thinks it doesn't matter what any one individual does, no matter how mighty s/he might be in the conventional scheme of things. History is 'like a deaf person who is in the habit of answering questions that no one has put to them' Tolstoy famously said. 'If the purpose of history be to give a description of the movement of humanity and of the peoples, the first question—in the absence of a reply to which all the rest will be incomprehensible—is: what is the power that moves peoples? To this, modern history laboriously replies either that Napoleon was a great genius, or that Louis XIV was very proud, or that certain writers wrote certain books. All that may be so and mankind is ready to agree with it, but it is not what was asked.'

Alternate history as a mode is Geoffroyan in this sense. It is the deaf sub-genre that can only think of history as a succession of great (that is, significant) individuals, of moments around which everything might hinge. We might want to argue that alt-history necessarily styles history as fundamentally fragile; or we might prefer to put the emphasis the other way about and argue that it styles man as possessing the sublime power to bend history and society around him. For Tolstoy one man, even one battle in which hundreds of thousands die, like Borodino, is not enough to overcome the immense inertia of history as such. Napoleon thinks he has won the Battle of Borodino, and so been able to occupy Moscow, and so conquered Russia. But he is wrong. It's the same error that Geoffroy makes in his novel. History doesn't work that way. Yet, science fiction almost always follows Geoffroy, and very rarely does it prove itself Tolstoyan.

And this, to speak a little more widely, is the impetus Romanticism gave to the burgeoning mode we now call science fiction, relocating its sublime from a collectivist to an individualist epiphany, styling the cosmos a backdrop to the drama of the exemplary self. The last man, the tragic or exalted figure on the mountain-top, the brilliant monster shunned by society, the Poe-hero

revelling in his something ghastly intensities, Napoleon turning to an alternate history to manifest his global destiny; these become the new icons of the genre.

NOTES

1. Suvin discusses this possibility, and also advances the theory that increasing fascination with the future matched increasing ideological control of the bourgeois capitalist economy, 'with its salaries, profits, and progressive ideals always expected in a future clock-time' [Suvin, 73]. Alkon, who discusses Suvin's theories intelligently and in some detail, also stresses the formal possibilities of experimental fiction as an enabling device for futurism. Neither critic discusses the publication in 1798, by Thomas Malthus, of *An Essay on the Principle of Population, as it Affects the Future Improvement of Society*. Malthus' theory was that an increasing population would outrun the resources needed to support it with consequent famine, misery and mass death; his work was enormously influential, and may have played some part in focussing European minds on the future as an actual, rather than merely a notional, entity.
2. Brian Stableford notes how common this comic-satiric use of the 'automoton' or 'robot' trope is in science fiction: 'William Wallace Cook's *A Round Trip to the Year 2000* (1903), which features robotic "mugwumps", and the anonymous skit *Mechanical Jane* (1903) are both comedies, as is J Storer Clouston's *Button Brains* (1933), a novel in which its robot is continually mistaken for its human model' [Clute and Nicholls, 1018]. More recently robots such as John Sladek's Roderick, the fussily-comic C-3PO from *Star Wars* and 'Marvin the Paranoid Android' (from *The Hitch-Hiker's Guide to the Galaxy*) have continued this tradition.
3. John Sutherland's *Is Heathcliff a Murderer? Puzzles in 19th-Century Fiction* (OUP, 1996), inspired by Ellen Moers' analysis 'Female Gothic' (in G. Levine and U. Knoepfelmacher, eds., *The Endurance of Frankenstein*, Berkeley, 1979) suggests that the 'physical, eye-averting revulsion' implied in Mary's description of the process 'is a reflex and a rhetoric associated traditionally in Anglo-Saxon cultural discourse with ... sexual intercourse (and its variant, self-abuse) and childbirth (and its variant, abortion)' (31). He goes on to suggest that Mary, whose mother had died ten days after she was born, and whose first child had been stillborn not long before writing *Frankenstein*, had Victor create the monster 'by a process analogous to fertilization and *in vitro* culture. The initial work "of his hands" which Victor refers to is, presumably, masturbatory. The resulting seed is mixed with a tissue, or soup composed of various tissues. The mixture is grown *ex utero* until ... it is released into life. Victor Frankenstein ... is less the mad scientist than the reluctant parent, or semen donor. He does not make his monster, as one might manufacture a robot—he gives birth to him, as one might to an unwanted child, the sight of whom fills one with disgust' (33).
4. Dramatisations of Shelley's novel began appearing early, and were very numerous. Richard Brinsley Peake's *Presumption: or the Fate of Frankenstein* opened in London on 28 July 1823. Over the next two years some fifteen other theatrical versions were staged, including the burlesque *Humgumption; or Dr Frankenstein and the Hobgoblin of Hoxton* (1823), *Presumption and the Blue Demon* (1823),

Henry Milner's *The Man and the Monster, or the Fate of Frankenstein* (1826)—which concludes with the monster stabbing Frankenstein to death and then leaping into the crater of Mount Etna—and John Atkinson Kerr's *The Monster and Magician; or, the Fate of Frankenstein* (1826), whose denouement sees Frankenstein and his monster wrestling in a boat that is struck by a thunderbolt. As William St Clair notes: 'Every single night when one of the *Frankenstein* plays was performed brought a version of the story of the manmade monster to more men and women than the book did in ten or twenty years. The London theatres could hold anything from 1500 to 3800 people and theatre seats were available for as little as a shilling; the first two editions of *Frankenstein* cost 16s. 6d. and 14s. respectively' [St Clair, 369].

5. For a much more sympathetic account of the epistemological ambitions of *Eureka*, see Peter Swirski's *Between Literature and Science: Poe, Lem, and Explorations in Aesthetics, Cognitive Science, and Literary Knowledge* (Liverpool University Press 2000).

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SF 1850–1900: Mobility and Mobilisation

THE 1850s

If the typical Romantic story about the isolate tends to the tragic, a different valence for the mythic solitude of the ego comes, to the fore in the second half of the century. Fantasies of pure, unaccommodated man (the thing itself) speak to the increasing dominance of bourgeois capitalism that underwrites Western literature through the 19th century, and especially its second half. The fantasy is one of being unencumbered by history, class or location, to become as free to circulate as the money that defined this new culture, which means of course to become radically fungible. The ‘mainsteam’ novel gave form to this fantasy in ways always constrained by the sheet-anchor of family, and the perfect liberation of the subject is always limited in crucial ways. We get characters travelling, only to return to the family romance that is the real heart of the European ‘realist’ novel. We get the flâneur, roaming the city (in works from *Sketches by Boz* through Baudelaire and into the modernisms of Joyce and Woolf). Science fiction provides a different scope to this flâneurism, a more radically—that is, a more systematically conceived—ground for existential freedom. The freedom from physical constraint becomes the literalisation of the metaphor that structures Western life. This is one core reason why, in this period, SF begins to transplant so energetically to the territory that would dominate its cultural production throughout the 20th century, America.

One figure overshadows much of the writing described in this chapter, Jules Verne, whose immense and international success many authors attempted to emulate. The exigencies of structuring the present study mean that discussion of Verne’s writing is reserved to Chap. 8, where he is paired, as the venerable if illogical critical tradition requires, with H G Wells, a man a generation younger than he, whom he never met and with whom he has little in common. I did not feel I had the strength of purpose to interfere with a pairing sanctified by the traditions of SF. Still, it’s worth dwelling for a moment on the particular figure embodied by Verne’s successes and, more precisely, how it gives a specific

shape and emphasis to the cultural logic of late 19th-century SF. Verne took inspiration from the technological advances of his age, not only specific pieces of new machinery—especially the machinery of more rapid transportation—but also, and crucially, the larger forces for shaping the environment unleashed by the industrial revolution. Verne’s great appeal for readers had to do with the dream he sold them of mobility, imaginatively extrapolated from the present into a near-future where restrictions and incapacities could be removed and new things become possible. We could, in a manner of speaking, pin Captain Nemo’s motto over everything Verne wrote: *mobilis in mobile* [mobile in the mobile element]. And there’s a deeper resonance to this which has to do with Verne’s vision of mobilisation in another sense; the way his novels over and again portray characters skilled at mobilising labour, material and resources, to some grand, even sublime endeavour: altering the orbital inclination of the Earth; travelling to the Moon; conquering the oceans. Mobilisation was the genius of the age, the motor of the industrial revolution; technologies of steam power, mass transportation, manufacture and so on that had been known for many years, given new force and global scope by being mobilised.

In putting it this way I have what might be termed an ulterior motive; for mobilisation has long struck me as one of the secret fetishes of SF. A lot of SF dramatises the processes of mobilising social energies and resources on a large scale; a lot more takes such mobilisation for granted in peppering its imagined worlds with vast construction projects, colossal artefacts and radically re-engineered social environments. When Charles Taylor describes the modern age, from the 19th century onwards, as ‘the Age of Mobilization’ he is talking about the larger logics of secularisation that are also crucial to the development of SF. Mobilisation in Taylor’s sense is ‘the process by which people are persuaded, pushed, dragooned or bullied into new forms of society, church and society ... induced through new forms of society, church and association not only to adopt new structures but also to some extent to alter their social imaginaries’ [Taylor, 445]. Taylor notes that people have been mobilised throughout history, and often on a large scale (his example is the Crusades), but he insists such ‘changes were taking place within a wider social context, that of Kingdom and Church, which were not themselves seen as the products of mobilization, but on the contrary were already there, the unchanging and unchangeable backdrop of all legitimacy. But,’ Taylor concludes, ‘in an “age of mobilization” this backdrop is no longer there.’

Taylor’s military metaphor ought not to limit our sense of the scope of his idea. It is true that Napoleon’s political career (to pick one example) depended in a literal sense upon his ability to mobilise his population on a vast and unprecedented scale. But Taylor is speaking to something further-reaching even than the invasion of Russia, to a new concept as well as actual mobility as constitutive of social and therefore cultural life. New technologies—extrapolated and in some cases anticipated by science fiction—are only one embodiment of this. One way of thinking about this would be to define mobilisation, in this sense, as the logic of mobility seen under the aegis of systematisation. Both these

terms, mobility in its fullest sense and the systematic or rigorous application of imaginative extrapolation, determine science fiction. Certainly, the cosmos of the later 19th century was a vastly larger place, physically and temporally, than the one conceptualised even by Enlightenment thinkers. Science, we could say, had mobilised its resources on a larger scale than ever before, and the resulting conceptual environment gave writers more space to be mobile in.

The way time was conceptually mobilised was more discursively revolutionary than new cosmological observations to do with space. A few key pointers in this regard: geologist Charles Lyell challenged the Bible-inspired notion that the Earth was less than six thousand years old in *Principles of Geology* (1830–33), introducing the idea of ‘deep time’ to a wide audience; a few years later Charles Darwin, perhaps the most famous scientist between Newton and Einstein, published his world-changing *On the Origin of Species by Means of Natural Selection* (1859), which confirmed this vertiginously long timescale in its portrayal of the valueless proliferation and evolution of life. The post-humously published *Death’s Jest Book, or the Fool’s Tragedy* (1850) of William Beddoes gives a sense of the way this new understanding of time in its aspect of ‘the Sublime’ inflected the far-future imagination. In place of the personalised ‘last man’ narratives of secular apocalypse from earlier in the century, Beddoes tolls a more impersonal and impressive knell:

Tis nearly passed, for I begin to hear
Strange but sweet sounds, and the loud rocky dashing
Of waves, where time into Eternity
Falls over ruined worlds. [Beddoes, *Death’s Jest Book*, IV.iii.107–110]

The same sense of the heady existential release, or perhaps latitude, of global decay increasingly informed late-century future fiction. German scientist Rudolf Clausius coined the term *entropie* in his 1865 description of the tendency of the amount of energy unavailable for conversion into work to increase. Popularised by John Clerk Maxwell and others, entropy entered popular consciousness as a belief that order inevitably disintegrates and chaotic order inevitably increases, until the universe perishes in a heat-death. This isn’t quite what Clausius was saying, but it is in this form that a fascination with *degeneration* enters late-century SF as a corollary to the *evolution* proposed by Darwin—medical scientist Bénédict Augustin Morel was the first to elaborate a comprehensive physical and social theory of degeneration. These various theories were not only science, they were, and are, powerfully coloured with philosophical and ethical drama. Darwinism may only describe, in a properly passionless manner, the likeliest hypothesis for the development of different species, but it was received very passionately indeed as advocating either a deplorable erosion of religious values or, conversely, a creditably progressive narrative of ongoing materialist improvement. Similarly, degeneration, though in essence a purely scientific premise, was never discussed in a morally neutral manner.

It would not be right to suggest that all the SF in the latter half of the century could be located on a notional scale somewhere between positivist optimism or degeneration pessimism. But these two ways of responding to the changes of the present, and the possible directions the future might take, do determine a great deal of the fictional speculation created over this period. Positivism and degeneration are rather over-determined pieces of theoretical nomenclature, actually. It may serve our purpose here to read them as limited cases of the new freedoms of individuals, in all their exhilaration and terror.

Many people were certainly on the hopeful side where future possibilities were concerned. American poet Walt Whitman stood 'Facing West from California's Shores' (as the title of his 1860 poem puts it) pondering that the 'circle' of global exploration was 'almost circled'. Eleven years later, in 'Passage to India' (1871), he looked beyond the exploration of the Earth to new frontiers, the 'sun and Moon and all you stars! Sirius and Jupiter!', although he did not make the imaginative leap to wonder what such new 'passages' might involve. Andrew Blair's *Annals of the Twenty-Ninth Century, or The Autobiography of the Tenth President of the World-Republic* (1874) anticipates a future of a global state and interplanetary travel. Brian Stableford says, with some justice, that this work founders 'under [its] own ponderous weight' [James and Mendlesohn, 23], but in its optimism and its ebullient expansiveness it is very much representative of its time. Edward Maitland's *By and By, An Historical Romance of the Future* (1873) is a utopia set in a future Africa. Its emphasis is much more on the mystical and psychic (and vegetarian) dimensions of the ideal future life, and the book should be considered in the context of the many mystical SF tales being written in the 19th century (for which see below). Others, particularly later in the century, found a more mournful cadence in the imaginative possibilities of SF. The great Hungarian poet Mihály Vörösmarty published a number of pessimistic cosmic epics towards the end of his life, including *Az emberek* (1848) in which the whole of human history is revealed to be circularly tragic, and *Előszó* (1850) which projects the 'tragedy' of Hungarian history onto a cosmic scale.

Whether SF manifests itself as an optimistic or a pessimistic idiom depends, largely, on the broader cultural attitudes to science and technology. Writers persuaded by the Enlightenment project were liable to write positive extrapolations in which society and human life was improved by progress in these areas. There were many writers more sanguine about such projects, many of them part of the anti-Enlightenment reaction that, in part, inspired the late-century craze for psychic phenomena. This dialectic works itself through into a significant cultural binary in the early 20th century (see Chaps. 9 and 10), but is also evident in the work written in the mid and late century.

Irish-born American writer Fitz-James O'Brien wrote a number of SF short stories as significant for their impact on the then-nascent form of the short story as for their fame in generic SF (the term short story was not coined until 1884). Inventive in premise and brilliant in execution, what most strikes the reader of O'Brien's short works is the distinctive atmosphere or mood he

creates, a rather mournful, unsettling and marvellous tone. ‘The Diamond Lens’, published in the *Atlantic Monthly* in 1858, takes the principle of Swift’s diminutive Lilliputians to a new degree. A scientist, using a microscope fitted with a lens of the title, observes a whole universe within a drop of water, and falls in love with a beautiful though infinitesimal humanoid therein, whom he christens Animula: ‘the perfect roundness of her limbs formed suave and enchanting curves. It was like listening to the most spiritual symphony of Beethoven’ [O’Brien, 302]. When her water drop evaporates, she shrivels and dies and the scientist’s grief drives him mad. Part of O’Brien’s technique in this, as in his other SF stories, is to establish what H Bruce Franklin calls ‘a surface realism’ [Clute and Nicholls, 884] against which the poetic strangeness of O’Brien’s themes can be more powerfully contrasted. It is a strategy that becomes so common in 20th-century SF as to become generically normative. Much of ‘The Diamond Lens’ is concerned with the technical challenges of building the instrument, but the pith of the tale is its mystical inflection of the theme of lovers doomed to separated existences. O’Brien’s narrator laments of Animula in her miniscule water-droplet that ‘the planet Neptune was not more distant from me than she’ [O’Brien, 302]. But he is only able to build the telescope in the first place because of the help he received from the famous dead microscopist Leeuwenhoek, via the spirit medium Madame Vulpes. This blend of scientific-technical and mystic idioms is not only characteristic of 19th-century SF, it is also a penetrating gloss upon the theme of the story itself. Because, although it presents itself as a love story, ‘The Diamond Lens’ is actually about death, the veil of which would (many believed in the 1850s) soon be pierced by science.

In *Star ou Psi de Cassiopée: Histoire merveilleuse de l’un des mondes de l’espace* [Star, or Psi of Cassiopeia: marvellous history of one of the worlds of space] (1854), by the splendidly named French writer Charlemagne Ischir Defontenay, a case is discovered in the Himalayas which contains a wealth of information about the alien inhabitants of the planet Psi, which orbits three different-coloured suns in the constellation of Cassiopeia. Defontenay includes details of the alien physiognomy and society and samples from their literature, and indeed tends to overwhelm his readers with his inventiveness, making *Star* a rather exhausting book.

ANTIGRAVITY: MOBILITY’S OBJECTIVE CORRELATIVE

Poe’s solution, in *Hans Pfaall* (1835), to the problem of how to lift a human crew from the Earth’s gravitational field (by balloon) was implausible even in the 1830s. Other SF approaches to the problem faced certain scientific difficulties. Despite the fact that Jules Verne famously propelled his astronauts into space by firing their craft from a gigantic cannon in 1865, in general it was believed that too sudden an acceleration would kill human passengers. Indeed, this danger was more often over-estimated than under-; in the early years of the century some people believed that even steam trains, travelling too rapidly,

could prove fatal for their passengers. Accordingly, although the principles of ballistics were well understood, few SF authors before Verne (or since) ever proposed cannon-launched or rocket ascensions. This left the problem of escaping the gravitational pull of the Earth. One way round this difficulty was the utilisation of anti-gravity devices.

The first such device may be credited to Joseph Atterley, the pseudonym of American author George Tucker, whose *A Voyage to the Moon* (1827) is accomplished in a craft coated with an antigravitational metal (Poe plagiarised several pages from this otherwise rather undistinguished novel). J L Riddell was the author of a little-known lunar romance, *Orrin Lindsay's Plan of Aerial Navigation* (1847), in which the titular scientist-protagonist uses an anti-gravity field created by 'magnetics' to pilot a spacecraft to the Moon. A more widely read novel in the same idiom was written by Chrysostom Trueman, a pseudonym that critics have yet to penetrate, although Darko Suvin makes a good case for James Hinton. Trueman's *The History of a Voyage to the Moon, with an Account of the Adventurers' Subsequent Discoveries* (1864) features an early use of an antigravity device to propel its protagonists to the Moon, an ore called 'repellante', dug out of the Colorado mountains by Trueman's two protagonists, Stephen Howard and Carl Geister. They fly to the Moon in a repellante-powered spaceship, where they crash-land. Here they discover a utopian lunar society of four-feet-tall humanoids called Notol. After a year living amongst these people and exploring the Moon, they inscribe their adventures on metal tablets and fire these back to Earth by dropping them into an exploding lunar volcano. The book speculates that the lunarians are actually reincarnated human souls, an iteration of the 17th- and 18th-century traditions of material-mystical lunar journeys that, as discussed below, was far from unique.

English author Percy Greg picked up on the concept, which he christened 'apergy', for his *Across the Zodiac: the Story of a Wrecked Record* (1880). A veteran of the American civil war is shipwrecked on a strange island in 1867 where he sees a UFO crash ('it had a very perceptible disc ... I came upon fragments of shining pale yellow metal ... [and a] remarkably hard impenetrable cement' [Greg, 9]). From this wreckage he extracts a Latin manuscript which tells of its anonymous narrator's invention of 'apergy' and his use of it in an 1820 expedition to Mars in a spaceship called 'the Astronaut'—the first recorded use of this term. Greg correctly anticipates the weightlessness of space travel, and fills the earlier chapters of his book with carefully recorded scientific data, including detailed linguistic tables and declensions of the humanoid Martians' language. The tale sags in the middle, with lengthy accounts of the society and utilitarian morals of the Martian inhabitants, and the hero's rather listless love for a Martian maid, Eveena; but it ends excitingly, with political intrigue and attempted assassination. Eveena sacrifices her life for the narrator and he leaves Mars in grief. Greg promised a second volume of these adventures, but it was not forthcoming.

Several subsequent interplanetary romances also used the concept. American writer John Jacob Astor adopted both the concept and the name apergy as the motile principle for his *A Journey to Other Worlds* (1894). Frank Stockton's

‘A Tale of Negative Gravity’ (1884) is a more playful variation of the same principle, in which an American inventor creates an anti-gravity backpack which he uses to go hiking, mountain-climbing and lifting heavy objects, before putting it away for fear of destroying his and his wife’s happiness with the fame that would ensue if the invention were made public. The long-lived alien protagonist of *Willmoth the Wanderer, or The Man from Saturn* (1890) by Charles Curtis Dail, flies about the solar system by smearing himself with an antigravity ointment. He arrives on a prehistoric Earth and creates *homo sapiens* by selective breeding. The most famous dramatisation of the concept is H G Wells’ *The First Men in the Moon* (1901), where the anti-gravity substance is named ‘Cavorite’ after its fictional inventor, and possibly as an oblique satire on Italian politics, which novel is discussed in Chapter 8.

These antigravitational spacecraft function as convenient material means of escaping the gravitational pull of the Earth, but they do more than that. The very popularity of this conceit indicates the way antigravity functions as an objective correlative to the very imaginative freedom that makes SF distinctive. Although 19th-century authors employed a wide range of tricks to get into space, from balloons to rockets, the two predominant assumptions were antigravity and will (this latter, in which characters either will themselves into space, or travel as disembodied spirits, has a long pedigree in SF; see the section on Mystical Science Fiction below). The former involves a materialist rationale, the latter partakes of spiritual or mystical discourses, but they both function exactly as externalisations of the imaginative liberty of SF.

CONTEMPORARIES OF VERNE

During the 1860s Jules Verne started publishing his *voyages extraordinaires* (the first of the series, *Cinq semaines en ballon*, appeared in 1863). Verne is discussed in greater detail in the following chapter but, without jumping forward, it is enough to note that the increasing popularity of the extraordinary voyage throughout the 1860s and 1870s drew on roots that long predated Verne, however much it received a huge boost from his international popularity. Indeed, some of the sheer variety of extraordinary voyages and future-fictions published in this period make Verne’s imagination seem, if anything, rather small scale.

Achille Eyraud’s *Voyage à Vénus* (1866) is praised by historians of rocket science as the first fictionalisation of a reaction propulsion system, in this case, pumping water backwards to move the spacecraft onward. The novel rather self-consciously parades its scientific plausibility in terms of the more extravagant milestones of the genre. Volfrang, describing his plans for visiting Venus, is interrupted by his friend Léo: ‘*oh oh! Explique-nous d’abord comment tu y es allé. Est-ce comme Cyrano de Bergerac ou comme Hans Pfaall?*’ [Oho—tell me how exactly you’re going to Venus. After the manner of Cyrano, or Hans Pfaal?]. [Eyraud, 44]. Volfrang pompously demolishes both these methodologies, and explains his own proposed mode of propulsion. This novel proved much less

popular than Verne's *De la terre à la lune* (*From the Earth to the Moon*), published the same year, despite the fact that its rocketry premise was vastly more plausible than Verne's spacecraft-shell fired from a giant cannon; although the reader's surprise at this relative lack of success is lessened by actually reading about the Venus Eyraud's travellers eventually explore. It turns out to be a sort of perfected France, absolutely dramatically inert, with a Venusian '*palais de justice*', a '*chambre representative*' various '*assemblées civiques*' and other '*associations*', all described in wearying detail, along with educational facilities, a stock exchange, an exhibition of '*l'art vénusien*' and many other things. Loyalty to scientific exactitude is neither a substitute for the ability to write dramatically interesting stories, nor a necessary condition of great SF.

In Spain, Enrique Gaspar y Rimbau's lively *El anacronópete* (1887) builds its story around a functioning time machine; not the first time travel story in world literature, but probably the first to feature a piece of technology to transport an individual through time—Wells didn't write the first draft of his *The Time Machine* until the following year. Styled as a three-act prose light opera (the Spanish is *zarzeula*), Gaspar's novel puts his indebtedness to Verne front and centre: '*las hipótesis del famoso Julio Verne tenidas por maravillosas, eran verdaderos* [the marvellous hypotheses of the famous Jules Verne have been proved true]'. [Gaspar, 10], and a great Spanish inventor called Don Sindulfo García has built on Verne's foundations to build a time-machine. This *anacronópete*, or anti-time flier, is a house-sized iron box powered by electricity, with four pneumatic curving pillars at each corner that enable it to move. It produces a certain '*fluído García*' that protects its passengers from the temporal counter-flow. Time, Don Sindulfo insists, is a function of the Earth's atmosphere, something he claims is proved by the fact that food sealed inside tins does not decay. With his friends inside, Don Sindulfo flies backwards against the Earth's rotation and thus moves backwards in time: a theory of such (even by 1880s standards) patent daftness as to indicate the comic extravagance of the whole. The travellers observe history happening in reverse, and end up in 3rd-century China; hence the Sino-chic cover-art, with the *anacronópete* at its centre (Fig. 7.1).

The twist at the novel's end—it turns out to be all a dream—deflates the structural coherence of this fabulation; García has fallen asleep in a theatre during the performance of a play based on one of Verne's novels ('*el teatro de la Porte Saint Martin que, concluida la representación de una comedia de Julio Verne, premiaba la inventiva del autor*' [Gaspar, 217]). The dimensions and form of the *anacronópete* are revealed as a sort of dream-logic theatre building, the whole story a literalisation of the power of art to transport us. That Gaspar's time machine is less coherently or systematically imagined than Wells' version of the same trope may speak to the latter's much greater influence in the genre, but the way this story is bookended by Verne indexes the way the Frenchman increasingly came to stand for imaginative possibility itself.

A list of European SF novels directly inspired by Verne would soon grow tedious. One example, selected for the shamelessness of its plagiarism, is Italian writer Ulisse Grifoni's *Dalla Terra alle stelle: viaggio meraviglioso di due italiani*



Fig. 7.1 Cover art for Enrique Gaspar y Rimbau's *El anacronópete* (1887), showing the time machine

ed un francese è un romanzo avventuroso di fantascienza (*From the Earth to the Stars: the extraordinary voyage of two Italians and a Frenchman*, 1887). He made some superficial changes to Verne's *De La Terre à La Lune* (Grifoni's space capsule is powered by antigravity rather than being shot from a cannon;

his destination is Mars, not the Moon) but is otherwise deeply derivative. Later, like a grocer offering a special deal, Grifoni cut Verne's travel-time by five-eighths for his *Il giro del mondo in 30 giorni* (*Around the World in 30 Days*, 1899). Specific plagiarism aside, writers took from Verne a kind of open-ended optimism that wore very well with readers. One example is Hungarian novelist Mór Jókai, a writer whose 'popularity was enormous' despite the fact that 'serious critics held strong reservations about the aesthetic qualities of his works from the very beginning' [Pynsent and Kanikova, 166]. Amongst his many novels were several intriguing SF tales, especially *A jövő század regénye* (*A Novel of the Next Century*, 1872): a positivist future-history in which new technologies powered by (and indeed built out of) a new substance called 'ichor' lead, via war, to world peace and prosperity, and thence to the colonisation of the solar system. Symptomatic of the newly global spread of SF is the appearance of Brazilian author Joaquim Felício dos Santos' *Páginas da história do Brasil escripta no anno de 2000* (*Pages from the History of Brazil written in the year 2000*, 1868–72), a work which extrapolates what it sees as Brazil's natural advantages as a country in terms of geography and natural resources into a future where it has overtaken the USA as world leader.

This sort of optimistic extrapolation into the future continued to be popular into the later 19th century, rather cutting against the perception that the fin de siècle was dominated by gloomy fables of doom and decadence. One corollary of such future speculation was a parallel speculation about how the past might have developed differently, a now-popular sub-genre of SF known as the alternate history. To speak conceptually, English grammar is uniquely hampering in this regard, to the extent that it does not grasp the close relationship between the future subjunctive and the past subjunctive. Charles Renouvier wrote an early example of this sort of book, whose title is sometimes taken as a shorthand form for the whole alt-historical mode: *Uchronie (l'Utopie dans l'histoire), esquisse historique apocryphe du développement de la civilisation européenne tel qu'il n'a pas été, tel qu'il aurait pu être* (*Uchronia—that is, Utopia in history—an apocryphal historical sketch of the development of European civilisation not as it was but as it might have been*, 1874) which traces the path history might have taken had the Roman Empire not collapsed in decadence after the death of Marcus Aurelius.

A more conventional sort of utopia was written by James Davis Ellis; his *Pyrrna, a commune, or Under the Ice* (1875) concerns an ideal society located beneath the surface of the Earth, in this case underneath a glacier. The use of the politically charged term commune in the title gives some sense of the ideological complexion of this form of utopia (the radical socialist-reformist Communards had taken charge of Paris in 1870, before being ruthlessly suppressed by French and Prussian troops in 1871). Ellis' sternly rational society, organised on eugenicist grounds, will strike many modern readers as more or less repellent. *Etymonia* (1875), by the same author, is another utopian story, this time set on an island. A different tone is set by English author Anthony Trollope who, enormously prolific though he was, published only one science

fictional work, *The Fixed Period* (1882). This short novel is set on an imaginary British colony, Britannula, located somewhere in the vicinity of Australia. Having gained independence from its colonial master, Britannula (its name suggests both Little Britain and Britain annulling) they intend to establish compulsory euthanasia for all citizens when they reach the age of 66, to relieve the country of the burden of supporting a useless elderly population, and supposedly to relieve the elderly from the burden of living through such a disagreeable period of their existence. The satire here is not as Swiftian, or as obvious, as some commentators suggest. The Britannulan President Neverbend, in addition to instituting ‘the fixed period’, has established universal progressive education, abolished capital punishment and in other respects has turned his country into a very attractive environment. In the novel Britain re-colonises Britannula ostensibly to prevent the fixed term practice. The debate, although it is one to which SF will often return (for instance in the 1976 movie *Logan’s Run*) does less to engage us as readers than the occasional glimpses of Trollope’s future-world: ‘the glittering spires of Gladstonopolis in the distance’ [Trollope, 170] or the rules of future-cricket in which bowling is done by machine.

Another difficult to classify work, charming if lacking depth (in a direct sense), was conceived by Edwin Abbott, an English clergyman. His *Flatland: a Romance of Many Dimensions* (1884) remains popular to this day. Essentially a witty and didactic fable designed to elucidate certain mathematical and topological premises, the book manifests a charm far in excess of the didactic requirements of its premise. The narrator, A Square, is a two-dimensional being living in a two-dimensional cosmos, which is described in some detail. In a dream, he visits a one-dimensional world (lineland) and is in turn visited by a sphere from a three-dimensional world (spaceland). Despite some attractive satirical observations about the limitations of Victorian society, and gender relations in particular, this work never quite manages to flesh out its two-dimensional conceit (if that is not too contradictory a statement). A deft sequel by Ian Stewart, a Professor of Mathematics at Warwick University, *Flatterland* (2001) is subtitled ‘Like Flatland, but More So’ and takes its protagonist (the great-great-granddaughter of A Square) through a much more comprehensive set of mathematically determined worlds.

MYSTICAL SCIENCE FICTION

As we have seen, it was a commonplace of 17th- and 18th-century SF to braid together the discourses of materialism and spiritualism. In the 19th century the interrelation of these idioms was assumed by many to have been established on a scientific basis (indeed, there are people alive today who continue to believe this). Organisations such as the American Centre for Psychical Research, founded 1884, attempted to place, so-called, supernatural or psychic phenomena on a scientific footing. As the odour of the crank, or even the fraud, attaches to many 21st-century spiritualists, it is worth repeating that 19th-century spiritualism was a much more respectable business, and often

advocates were eminent scientists themselves. Tracing the roots of the movement we soon encounter individuals of the stature of Humphry Davy, Professor of Chemistry at the Royal Institution, who did much to advance human knowledge of chemistry and physics and who invented the miner's safety-lamp that bore his name. Davy was also a committed believer in psychic phenomena. His SF fantasia *Consolations in Travel; or, The Last Days of a Philosopher* (1830) concerns the meeting between the protagonist Philaethes (Truthlover) and a disembodied spirit he calls his Genius. This Genius relates the true nature of the cosmos, in which material atoms exist alongside spiritual atoms ('the quantity, or the number of spiritual essences, like the quantity, or the number of atoms in the material world, are always the same; but their arrangements ... are infinitely diversified' [Davy, 41–2; see also Stableford in Flammarion, xx–xxii]), from which are constructed spiritual beings who can travel about the universe unconstrained by physical laws. The physical universe strives continually upwards to the preferable spiritual existence; after death humans move up through a number of increasingly elevated spiritual incarnations as extraterrestrials on other planets—a description of sextuple-winged and many-tentacled aliens flying through the atmosphere of Saturn is particularly impressive. This model of a spiritual cosmos interpenetrating the material as a desired destination was common to 19th-century spiritualist discourse; as was the idea that extraterrestrials might, in fact, be beings of this nature. Poe's *Eureka* (1849, discussed above) belongs to this tradition.

The major figure of 19th-century mystical SF is the French astronomer Camille Flammarion. He worked, as a young man, for the Paris Observatoire, and his first published work drew on astronomical science for some sober speculation about the likelihood of life on the other planets of the solar system, which he published under the Fontanelleian title *La pluralité des mondes habités* (*The Plurality of Inhabited Worlds*, 1862). The success of this work (it went through 13 editions in the next 30 years) encouraged him to pursue a career as a writer, but, significantly, his next work was a piece of psychical speculation about the afterlife, *Les habitants de l'autre monde: révélations d'outre tombe* (*The inhabitants of the other world: revelations from beyond the tomb*, 1862) based on 'revelations' via a spirit-medium Mlle Huet. Brian Stableford argues that Flammarion regarded this book 'as a companion piece to its predecessor' [Flammarion, *Lumen*, x], and may have been encouraged by its cautious reception to separate out his mystical interests from his more conventional science. So, for instance, his later *Des Forces naturelles inconnues* (*Of Natural but Unknown Forces*, 1865) appeared under the pseudonym Hermès. But the mystic and the scientific are so closely interwoven in almost all Flammarion's science fiction that it is difficult to believe that such a separation was ever attempted. In fact, Flammarion's own style of—often very powerful, and certainly influential—mystical SF was characteristic not only of the age in which he lived, but also reflects what this study has argued is the fundamental and determining dialectic of the genre.

Les mondes imaginaires et les mondes réels (*Worlds Imaginary and Real*, 1864) is non-fiction, and includes sober astronomical speculation about the solar system, with a comprehensive compendium of previous fictional imaginary voyages around the solar system, this latter having an understandable bias towards the French literary tradition. Flammarion continued making astronomical observations, and took balloon journeys to experiment upon the atmosphere, publishing the results as *L'Atmosphère* (1871). His general introduction to the business of astronomy, *Astronomie populaire* (1875), was immediately successful, and (frequently updated) is still in print. He moved to an estate south of Paris at Juvisy-sur-Orge where he constructed a large telescope, and where he also conducted frequent séances. Both these forms of research informed his fiction.

Lumen (collected in *Récits de l'infini*, 1872) dramatised much of the same material as *Les mondes imaginaires et les mondes réels*. The story consists of five consecutive conversations between a mortal man and a disembodied spirit, the Lumen of the title, who is free to travel throughout the cosmos. Lumen—Latin for light—illuminates the man on many features of alien life, as well as on the spiritual truths of reincarnation and the benign God who providentially governs everything. Two other SF stories from *Récits de l'infini* express this dual nature of Flammarion's interest. '*Histoire d'une comète*' tours the solar system from the point of view of a comet; whereas '*Dans l'infini*' is about a mysterious communication from the spirit world.

The point where these two sides of Flammarion's interest coincide is in an affection for the sublime. *Lumen* is a powerfully affecting read, suggesting the sheer scale of the universe with, in its last two '*récits*' a parade of brilliantly inventive tableaux concerning the forms alien life might take. It deftly generates a sense of the enormous scale and variety, and as such is a tale that broadens the reader's mind. Yet *Lumen* also uses its material premises to adumbrate a specifically ethical and religious point. It's major theme is the way the finite speed of light determines the cosmos; if light from Earth takes 65 years to reach a certain distant star, then an observer on that star (assuming they could command improbably efficient powers of magnification) would see life on Earth as it was 65 years ago—in 1854 they would see the French Revolution. Flammarion explores the various implications of this: if one travelled at the speed of light, the scene would appear frozen; if one travelled slightly less than light speed the scene would unfurl in slow motion; and so on. Flammarion's conceit is that this circumstance renders all the cosmos always present and apprehensible, nothing is lost, good or evil deeds from any historical period are instantly accessible. We discover, for instance, that Napoleon, having caused the deaths of five million men, each of whom would have lived on average 30 more years had they not died, is responsible for 185 million years of human life, and that accordingly his spirit will be prevented from developing for this period of time.

Stella (1877) and *Uranie* (1889) are both novels concerned with reincarnation. *Stella* flirts with sentimentality in its story of lovers separated by death but then reunited. *Uranie* is a broken-backed accumulation of various SF-mystic bits and pieces, although some of the descriptions of strange life-forms on

other worlds have the power of *Lumen*. More effective, but still saturated with religious and mystical discourse, is *La fin du monde* (1893–4). In this work a comet narrowly avoids crashing into a 25th-century Earth, and the anticipation and passage of the disaster is related with all Flammarion's considerable astronomical skill, combined with effective description of social panic attending the event. Flammarion, as is the case in most of his work, mixes in a great deal of factual information relating to previous historical disasters, often to good effect. But after expected disaster is averted Flammarion, in a bold narrative move, fast-forwards his tale. By the 100th-century human beings have evolved into radically different forms, with enormously refined sensory capacities and extensive psychic capacities. Europe is abandoned and falls to ruin. Flammarion then blithely steps several million years further on, to the cooling of the Sun and the slow freezing of the world. The last surviving humans are a young boy and girl, Omegar and Eva, but there seems no possibility of a repopulation and the Earth is doomed. In other words, Flammarion is recycling the last human lovers from Grainville's *Dernier homme* (1805; discussed in the Chap. 6), although he gives that story a positive and rather bizarre twist. Eva's dead mother revives to inform the two of them that Jupiter is where humanity, now cleansed and purified in spiritual forms, lives. Omegar and Eva, ready to die, are instead carried off by the spirit of Cheops, King of Egypt, to the spirit utopia of Jupiter. Rather abruptly, Flammarion then concludes his story by relating the eventual death of the whole solar system, and the cosmos itself, to make way for a new infinite universe. Flammarion exhibits the increasingly intimate relation between materialist and mystic impulses in late century SF; based on his meticulous astronomical-scientific knowledge his fictions enjoyed much of their wide popularity because of the spiritualist flavour of their narratives.

Something similar is true of the hugely popular (in their own day) pot-boilers of British writer Marie Corelli. Her first novel, *The Romance of Two Worlds* (1886), reads like an especially prolix throwback to the mystical voyages of Kircher and Swedenborg. It details a trip round the solar system undertaken by the narrator-heroine in the company of Azùl, an angel, taking in perfected societies of spiritual life on Saturn, Venus and Jupiter, the voyage achieved via a mystical variant of electricity. Its sequel, *Ardath: the Story of a Dead Self* (1889), has an even more occult emphasis, and includes time travel back to BC 5000. Corelli's idiosyncratic 'Gospel of Electricity' won many fans, although it was ridiculed in its day and meets with more robust ridicule nowadays.¹ It may be time to take another look at Corelli's outré fantasias, reading them less as populist trash and more as the eccentric fabulised textual intensities of a self-made woman, whose discretely lesbian lifestyle and socially progressive attitudes are discernible in many of her works. Her reworking of the Faust legend, *The Sorrows of Satan* (1895), was an international bestseller, and was admired by, amongst others, Oscar Wilde. Despite its fruity stylistic excess and its rather lusciously rendered Devil character—an immensely wealthy foreign aristocrat called Lucio—this is a book with heartfelt things

to say about atonement and redemption, and explicitly advocates women's suffrage and the welfare state.

Indeed, the later years of the 19th century saw a remarkable increase in interest in psychical and supernatural affairs, with special interest in telepathy, spirit rapping (communicating with ghosts at séances by means of tapplings on the tabletop), ghostly apparition and reincarnation; a set of beliefs often dignified by scientific pseudo-explanation and often endorsed by respectable scientists. Taken in the broader context of the development of SF, this blurring of the boundary between the mystic and the material can be seen as a determining dialectic for the genre itself. It ought not, therefore, to surprise us that so much late 19th-century SF straddled precisely this boundary.

Realmah (1868) by Arthur Helps includes amongst its various stories a sort of externalisation of heaven as a planet which receives the souls of the dead—an idea Ian Watson reworked, to rather better effect, in his *God's World* (1979). Mortimer Collins' *Transmigration* (1873), a fantasy of multiple incarnations that includes a sojourn on a utopian Mars, conceived rather like ancient Athens. American writer John Astor's *A Journey in Other Worlds, A Romance of the Future* (1894) is set in AD 2000, and details a tour around the solar system in a spacecraft powered by antigravity. The book begins with an impressive array of material details of the future world: from projects on the largest scale—the Earth is purged of its axial tilt so as to ensure a panglobal temperate and regular climate—to the smallest: ocean-going ships carry metallic windmills that are deployed when in port, so as to store the energy of the wind thereby providing 'a great part of the energy required to run them at sea' [Astor, 43]. There is also a eugenicist agenda not unfamiliar from the discourses of psychical and theosophist believers; the non-white races, we are told, 'show a constant tendency to die out' and 'the places left vacant are gradually filled by the more progressive Anglo-Saxons' [Astor 74]. But the tone changes in the latter portions; the space travellers encounter a number of spirits, including the soul of a dead American bishop, who instructs them in standard 19th-century mystical terms about the nature of the afterlife floating through the ether of space. 'Though many of us can already visit the remote regions of space as spirits,' we are told, 'none can as yet see God; but we know that as the sight we are to receive with our new bodies sharpens, the pure in heart will see Him, though He is still as invisible to the eyes of the most developed here as the ether of space is to yours' [Astor 385–6]. The book ends with a sermon in which its SF speculations are reconciled to scripture; it is difficult to imagine a more fell dramatic device.

Prolific English novelist Edward Bulwer-Lytton came late in his career to mystical-scientific romances. His *A Strange Story* (1862) rationalises spiritualism and the posthumous survival of the soul in pseudo-scientific terms. *The Coming Race* (1871) takes its traveller, in now-traditional SF mode, into a subterranean world inhabited by beings superior to *homo sapiens* in a number of ways. These creatures utilise a nebulously defined but enormously

powerful energy 'vril', something between electricity and spiritual-force, to power their lives. The novel ends with the protagonist escaping back to the surface and attempting to warn the complacent surface dwellers that the underworlders are soon to emerge and take over our world, an alarming prospect. The book was a hit, and vril became a term with cultural currency (the makers of a brand of concentrated beef paste cashed-in on its vogue by calling their product bovine vril, or Bovril). But what is most interesting about the book's success was precisely the way it treats science and mysticism as, in effect, versions of one another.

Another mystical writer of some interest to the development of the genre, because of his influence on Wells (discussed in the Chapter 8) is English mathematician Charles Howard Hinton. Hinton yearned to codify his own religious and spiritual views by apprehending them mathematically. His collection *Scientific Romances* (1884–5) gathers together essays and other short pieces, many of them of a scientific-mystical sort; for instance, the mathematical algorithms needed for the precise quantification of sin and virtues, such as might affect a soul's judgment after death. One theme of Hinton's was that time might be conceptualised as a fourth dimension, something that very possibly influenced Wells as he was imagining his own *Time Machine*. For, if time is a dimension, like length, breadth and depth, then perhaps people might travel along that dimension.

FUTURE WAR AND INVASION FANTASIES: MILITARISTIC EXTRAPOLATION

Imagined spiritual realms are one arena in which the egotistical sublime can body forth its fantasies of perfect mobility. Military fantasy is, in some ways, a materialist correlative of such fantasising; and war stories are good vehicles for dramatising not only mobility but *mobilisation*, in the sense discussed above. Which brings us to a significant strand of late-century British, and to a lesser extent European, SF, invasion narratives. The vogue for this sort of story began with Chesney's *The Battle of Dorking* (1871), a near-future fable in which a fearsomely efficient German army invades Britain and defeats the enthusiastic but poorly organised, trained and armed British reserve troops. Lieutenant-Colonel George Tomkyns Chesney (he was knighted in 1890 and promoted to General in 1892) had served with the Bengal Engineers in British India. Invalided home, he concerned himself with what he saw as British military unpreparedness, and made a number of suggestions for military reorganisation to the war office. *The Battle of Dorking: Reminiscences of a Volunteer*, a short story published as a pamphlet in 1871, was part of this campaign. Its intrinsic interest is small, as a rather bland first-person narrative is blended with an annoying and hectoring Tory militarism: 'a little firmness and self-denial, or political courage', laments its narrator, 'might have averted the disaster', the cause of which he ascribes to the fact that 'the lower classes, uneducated, untrained in the use of political rights' had

usurped the powers of ‘the class which had used to rule ... and which had brought the nation with honour unsullied through former struggles’. But there is no denying the tremendous popularity it enjoyed, and the chord of British Imperial anxiety it touched. *Blackwood’s Magazine*, where the story was first published, reprinted six times to meet demand; issued as a pamphlet it sold 110,000 copies in two months. Gladstone, the Prime Minister, attacked it in the House of Commons as alarmist. It was translated into most European languages, and other authors rushed to write plagiarisms of, or counter-blasts to, Chesney’s slim tale.

It was by no means the first tale of future war and invasion—we have already noticed R F Williams’ *Eureka: a Prophecy of the Future* (1837), and we might add *The Invasion of England (A Possible Tale of Future Times)* (1870) by Alfred Bate Richards—but neither of those works achieved the enormous success that Chesney enjoyed. Songwriters Frank Green and Carl Bernstein wrote a popular music hall song ‘The Battle of Dorking: A Dream of John Bull’s’ (1871) which rewrote the story in England’s favour (‘England invaded, what a strange idea!/She, the invincible, has nought to fear’, Clarke, 37). *Punch*, the satirical magazine, similarly insisted that ‘JOHN BULL’s not yet the brainless ass that Blackwood’s prophet would make him’ [Clarke, 76]. The vigorous public debate about the desirability, and extent, of British rearmament was touched by this to the extent that it was often couched, seriously or light-heartedly, in science fictional terms. An example is this logically extrapolated supergun-dreadnought from *Punch* 1875 (Fig. 7.2).

Chesney sought to capitalise on his success. A second future-war tale, *The New Ordeal* (1879), imagined developments of weaponry that would eventually make war obsolescent, but it was much less popular. His novel *The*

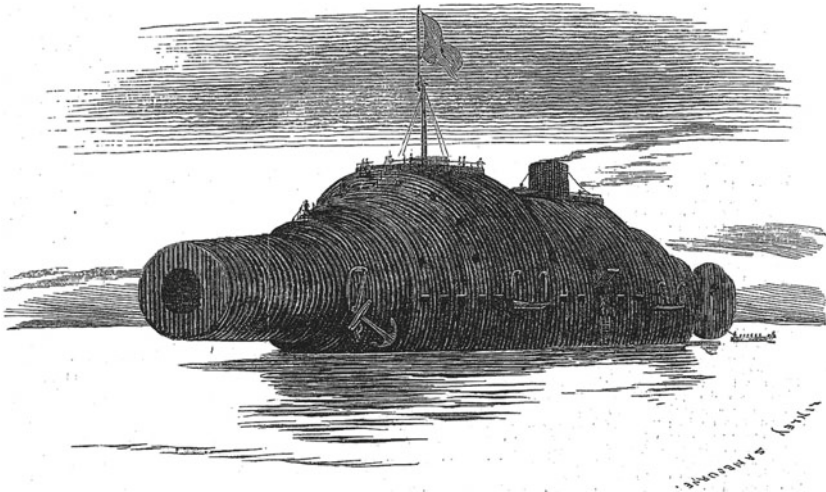


Fig. 7.2 ‘The warship of the (Remote) future’, *Punch* 1875

Lesters (1893) revisits Verne's *Les cinq cents millions de la Béguin* (1879, see the next chapter), recasting it in a more straightforwardly utopian mode. Its hero chances upon a huge fortune which enables him to found an ideal new city which he names after himself, Lestertia, and which embodies all Chesney's right-wing crotchets.

In the words of I F Clarke, *The Battle of Dorking* 'was the beginning of a great flood of future war stories that continued right up to the summer of 1914' [Clarke, 15]. There are too many of these sorts of books and stories to list here (more than sixty titles could be adduced), although it is worth noting that in the 1870s and early 1880s these works tended to trade in an atmosphere of fear and paranoia (an example might be Horace Lester's paranoid *The Taking of Dover*, 1888); when by the 1890s and 1900s such stories had often acquired a more triumphalist flavour which, as Brian Stableford notes, 'helped to generate the great enthusiasm which Britons carried into the real war against Germany when it finally came' [Clute and Nicholls, 1297]. Louis Tracy, a popular journalist, wrote several of this sort of book. *The Final War* (1896) sees future-Britain and its Empire pitted (successfully, I need hardly add) against the rest of the world. In *The Lost Provinces* (1898) an American who has wound-up running France leads that country in a successful war against Germany. Other works had even greater contemporary impact: particularly Erskine Childers' *The Riddle of the Sands* (1903) which treats, excitingly, of the discovery of secret German invasion plans; and William Le Quex, who mined this particular seam to great effect. Le Quex created enormous public stir with anti-German fictions such as *The Great War in England in 1897* (1894), and especially *The Invasion of 1910: With a Full Account of the Siege of London* (1906), which were both serialised in the right-wing popular newspaper, the *Daily Mail*. John Sutherland puts it well when he notes that 'pseudo-documentary in style' *The Invasion of 1910* 'charted the German advance over those parts of England where the newspaper's readership was particularly strong'. Sutherland also mentions the fact that Le Quex's political views 'as reflected in his many novels' became increasingly 'anti-semitic and pro-Fascist' as time went on [Sutherland, 372]. Which fact stands as a commentary, I think, upon this whole sorry sub-genre.

ALBERT ROBIDA

Robida's future-war tale *La Guerre au Vingtième Siècle* (*War in the Twentieth Century*, 1887) is sometimes included amongst the previous class of militaristic fantasies, but unfairly so. Robida was a unique figure in 19th-century SF, who worked both as an illustrator and a writer, and who produced what Philippe Willems anachronistically but suggestively called 'hypermedia SF novels' [Robida, xiii]. Works in which inventive and witty text was supplemented by marvellous line drawings.

The first of his three future-France masterpieces was *Le Vingtième Siècle: Roman d'une Parisienne D'Après-Demain* (*The Twentieth Century: the tale of a*

Parisian lady of the day after tomorrow, 1882). Indeed, in this work the illustrations rather overwhelm the sometimes rather thin narrative line. The protagonist Hélène, a beautiful young orphan, adopted into the wealthy Ponto family, returns to future-Paris from her time in a school on the coast. Robida uses her as an ingénue to whom all the features of Paris unusual to his 1880s readership can be explained. Indeed, Hélène's ignorance of the features of future-French society is so complete it goes beyond what the reasonable reader can accept. She is startled or baffled by the telecommunications network (even though this network is global) via which images are projected onto 'crystal screens' with sound accompaniments from around the world. She must have explained to her the workings of the centralised Food Factories (which pipe soup and food directly to householders; in one incident, the Ponto house is flooded with hot *potage* after a broken pipe), the gender-equalised academies of politics, law and literature and so on. Later in the novel M. Ponto's son Philippe has to be rescued from Britain, which has become a fanatical Mormon colony in which polygamy is obligatory and bachelors are imprisoned as dangerous criminals. After this successful escapade Hélène marries Philippe, and the pair go on a worldwide honeymoon. Travelling through the Pacific, their submarine hits a mine left over from the World War of 1910, and the passengers are marooned on one of the many artificial islands that dot the seaways. There Philippe conceives the plan to build a sixth continent in the Pacific, and the novel closes with this plan being put into action.

We discover, more or less incidentally: that the Moon has been dragged closer to the Earth ('to a mere six hundred and seventy-five kilometers' indeed), apparently for no other reason than to 'brighten our nights'; that Russia has been entirely blown up and flooded during a war; that Italy has been bought by commercial interests and turned into a giant holiday-land. But if the deliberately light-hearted vivacity of all this invention tends to distract the reader from too complete an emotional investment in the story as actual, the pictures draw the reader in. They are illustrations to pore over, somewhere between Phiz and Heath Robinson they are dripping with lovely details; airships, cannons and futuristic machinery are rendered with all the curlicues and fripperies, all the wrought-iron ornamentation and frilly dresses of late century fashion (Fig. 7.3).

The success of *Le Vingtième Siècle* encouraged Robida to extend his imaginative creation of 20th-century life with *La Guerre au vingtième siècle* (*War in the Twentieth Century*, 1887), which details a war in 1945 with an even more advantageous proportion of illustration to text; and *La vie électrique* (*The Electric Life*, 1892), which praises the possibility of the force that Robida assumed would power most 20th-century technology. But endearing as Robida's prose imaginings are, his greater anticipation was in the form of SF; he predates by nearly a hundred years the major development of late 20th-century SF, from being a merely written thing and towards becoming a fully integrated visual-verbal text.

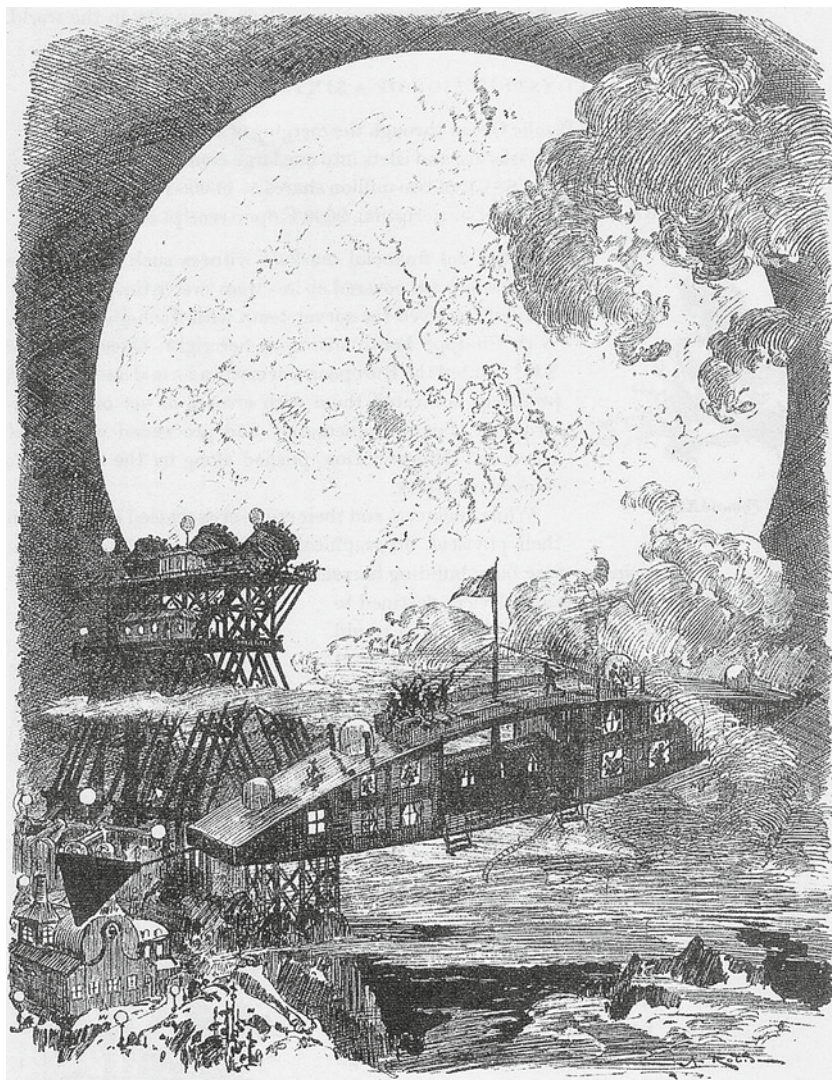


Fig. 7.3 The Moon brought closer to Earth: Illustration from Robida's *Le Vingtième Siècle* (1882)

LATE CENTURY UTOPIAS

Although utopias were written throughout the century, becoming increasingly popular in the latter decades, one particular example of this mode had greater impact than any other: *Looking Backward 2000–1887* (1888) by Edward Bellamy—an author H Bruce Franklin has called ‘the most influential American science-fiction writer of the 19th-century’ [Franklin, 255]. *Looking*

Backward takes its protagonist Julian West to the year 2000 by means of a hypnotic trance. On awaking, West discovers a harmonious collectivised America founded on the principles of ‘Nationalism’ and ‘the Religion of Solidarity’. Poverty and the attendant misery associated with the individualist capitalism of the past have been abolished. Everybody, male and female, is recruited into the ‘industrial army’ between the ages of 21 and 45, where they work at whichever jobs they are assessed as being best-fitted for. Those who do not pull their weight are sent to solitary confinement until they buck up their ideas. Everybody receives the same national income, although since cash money has been abolished payment takes the form of a credit card. Various technological advances are detailed, including a machine that pipes music directly into people’s homes. The novel ends with West waking up in the America of 1887, horrified that his visit to the year 2000 was only a dream and depressed by the squalor and degradation of 19th-century life. But in a final twist, it turns out that this revisiting of 1887 was itself a dream; West is safe, actually living in Bellamy’s ideal future world.

Bellamy’s utopia, though not uninteresting, reads as just one more example of a very prolific 19th-century sub-genre, with little to separate it from the crowd in terms of writing quality or original ideas. It is a little puzzling, therefore, to note just how large was the popularity it enjoyed (John Carey thinks it had ‘a greater impact than any other single utopia’, Carey, 284).² Within a few years of its publication more than a million copies had been sold, and it had been translated into all major world languages. Hundreds of clubs were formed to lobby for Bellamy’s ‘Nationalist’ collectivist ideals, and a Nationalist political party was formed in America that enjoyed considerable popularity. Opponents, motivated either by party-political or broader ideological worries, hurried into print. According to Tony Barley ‘by 1900 over 60 Bellamy-inspired titles had been published in the United States’ including many refutations by authors such as the American Ignatius Donnelly, whose *Caesar’s Column, a Story of the Twentieth Century* (1890) took Bellamy’s premises in a dystopian rather than utopian direction. ‘Bellamy was also debated in “straight” political tracts such as W J Ghent’s ironically titled *Our Benevolent Feudalism* (1901)’ [Barley, 156]. The most famous of the anti-Bellamists was the British poet, writer and designer William Morris, whose *News From Nowhere, or An Epoch of Rest* (1891) details an anti-industrial, rural-idyllic future England that resembles the middle ages rather than any high-tech extrapolation of industrial progress. Morris’ beautiful book was designedly the antipode of Bellamy’s collectivist vision of society as a giant machine. Its representation of perfect social living is gentle and compelling, with a very attractive emphasis on beauty. Still in print today it is to many socialists a sort of sacred text, although it no longer has its bite as a counter-blast to *Looking Backward*.

That Bellamy could have such impact is explicable, at least in part, with reference to the idiom in which he wrote; the imaginative recreation of utopia, in a popular genre, breathes life into, and throws attractive light over, an otherwise rather repellent social programme. As Chris Fern notes, Bellamy’s

future USA is 'explicitly based on a military model', workers and women are disenfranchised and there is a quasi-eugenicist fascination with the purity of the race. Moreover, there is 'a significant gap between what is described and what is dramatized. While the emphasis of Bellamy's description is heavily on *work* ... his portrayal of how utopian life is *lived* shows only the utopians at leisure' [Fern, 76–83]. With something amounting to disingenuousness Bellamy portrays all the benefits of his centralised society and none of the costs. Something similar can be said of Morris' more elegantly written but, alas, even less plausible blueprint for social change; the practical steps, or even the general logic of the changes that lead to his cod-medieval idyll are simply absent. Another way of expressing the difference between the two works would be to note how much more thoroughly Bellamy *mobilises* his imaginary future.

Bellamy's success certainly breathed new life into the utopian mode (and therefore into certain forms of SF) in the 1890s and 1900s; scores upon scores of utopias were published, of varying merit and interest. One significant strand of this movement was a rise in female or proto-feminist utopias. Indeed, utopian fictionalising of the state of women actually predated the broader cultural discourse (anxiously debated in British society in the 1890s and 1900s) about the, so-called, New Women—women who to one degree or another refused the traditional subservient roles offered by Victorian society. Theatrical burlesques such as Gilbert Arthur à Beckett's *In the Clouds; A Glimpse of Utopia* (first performed at the Alexandra theatre in 1873), located on a gynarchic 'Island of Flying Women', embodies a necessarily frivolous approach to the topic.³ But more serious-minded exercises in gender thought-experiment followed. Mary E Bradley Lane's *Mizora: a World of Women* (1880–1) is set inside a hollow Earth where the women rose up to overthrow a catastrophic military dictatorship, and followed-through to the extent of exterminating all their menfolk, to the great advantage of their quality of life. The rather austere man-free future Ireland of Elizabeth Corbett's *New Amazonia: A Foretaste of the Future* (1889) involves domesticated and disenfranchised men, powerful female warriors and rulers, enforced vegetarianism and a eugenicist ruthlessness in the elimination of deformed babies and bastards. British Suffragette Elizabeth Clarke Wolstenholme Elmy's long poem *Women Free* (1893) is level-headed by comparison. Its earnestly rendered future in which women have equal legal status with men is also a future in which period pains are no more—menstrual cramps were all the fault of men (a 'heritage of woe' caused by the 'unhealed scars of men's distempered greed'). *Unveiling a Parallel: A Romance* (1893) by American writers Alice Ilgenfritz Jones and Ella Merchant takes its (male) protagonist to Mars by 'aeroplane'. Two different societies share this world: one, capitalist Paleveria in which the women have taken on the negative traits of men to the misery of both sexes; the other, socialist Caskia, in which the sexes live harmoniously together. A dozen or more other examples might be adduced, creating the rich literary culture out of which was produced the most famous feminist fantasy of this period, *Herland* (1915) by Charlotte Perkins Gilman.

Three men fly to a remote part of the world by biplane to discover a woman-only society. At first imprisoned, the men are later educated in the language and mores of this Herland, and given a tour of its utopian set-up. Babies are born by a mode of parthenogenesis, property is held in common, and eventually the men shed their Western sexist assumptions and marry Herlanders. One man's re-education proves incomplete however and he attempts to rape his wife, is sedated and expelled from the paradise. He departs with his friend, leaving one last man in Herland. Gilman wrote a sequel *With Her in Ourland* (1916) in which this man brings his Herlander wife into the Western world, on the verge of World War One. The later work demonstrates how completely Gilman has invested in the gendered ideals of her utopia for, despite observing innumerable horrors and performing what amounts to a textual necropsy on the horrors of male-dominated society, the book ends with Herland agreeing to open its borders in order to save the world from itself.

Herland is only the most famous of Gilman's half-a-dozen utopian fables. Originally serialised in Gilman's own magazine *The Forerunner*, it was not published as a stand-alone novel until 1979, when its appearance chimed neatly with the burgeoning expansion of second-wave feminism. Indeed, the book proved so effective a gender heuristic, and was for a while so widely discussed and taught, that the belated rediscovery of Gilman's more questionable views was a genuine startlement for many feminists. In fact, when seen not as a stand-alone but rather as a late arrival in a sub-genre characterised as much by eugenicism and racism as proto-feminism, such aspects are less remarkable, though no less deplorable. Judith Allen has attempted to defend Gilman, arguing that whilst critics have identified 'an embarrassing compendium of elitist, racist, anti-Semitic, nativist and imperialist discourses' in Perkins, such critiques 'are distorted in varying degrees by presentism, and a telling lack of attention to context and contingency' [Allen, 331]. Of course it might be argued that the latter criterion of attention is as much subject to the dangers of the former, 'presentism', as anything. Gilman's low opinion of Black Americans, her suspicion of Jews, her fear that the USA's 'reproductive purity' was being diluted by immigrants and her pride in her own 'Anglo-Saxon-ness' were mainstream views for people of her generation, class and race, and such views were not generally offered wrapped about with the cotton wool of nuance. The core point is that Gilman's gyno-topia rests upon the systematic and ruthlessly applied mobilisation of a social imaginary, and that such mobilisation—however dramatically and even ideologically effective—sweeps up individual nuance and context in its grander visions. In all her work Gilman genuinely hoped to save the world.

L'ÈVE FUTURE (1884): EDISON'S ANDROID

A very different perspective on women is to be found in *L'Ève Future* (*Future Eve*, 1886), an intriguing but misogynistic Symbolist novel by Auguste Villiers de l'Isle-Adam. Symbolism was a late century literary movement, associated

with a loose affiliation of French poets (amongst them Baudelaire, Mallarmé, Verlaine and Rimbaud) who wrote in reaction against the dominant literary modes of Realism and Naturalism. Oblique and suggestive, Symbolist writing aims to create certain resonant moods, and used a number of symbols to evoke an often mysterious distillation of the material and spiritual. Influenced, as were several Symbolists, by Poe, Villiers de l'Isle-Adam wrote prose that aspired to the condition of poetry, which fact can make him a tiresome read; but for a long time he was highly regarded by many (Edmund Wilson's study of Symbolism, *Axel's Castle* [1931] took its title from Villiers de l'Isle-Adam's pompous 1890 drama *Axel*).

Excited and repelled to a greater degree than other Symbolists by contemporary advances in technology, Villiers de l'Isle-Adam wrote various short pieces that satirised 19th-century *mécanisme*. 'L'Affichage céleste' ('Celestial Advertising' 1873) concerns a new machine that will turn the sky into a medium for advertising purposes. 'L'Appareil pour l'analyse chimique du dernier soupir' ('An Apparatus for chemically analysing the last breath' 1874) pokes fun at the emotional sterility of the bourgeoisie—a favourite butt of the aristocratic Villiers' ponderous humour—positing a machine that offspring can use to analyse scientifically the last breath of their dying parents, relieving them of the need to feel any sadness. 'La Machine à Gloire' ('The Glorification Machine', 1874) satirically imagines the creation of an automated audience-response machine for the theatre, to applaud or boo as required: '*vingt Andréïdes sortis des ateliers d'Edison ... automates electro-humains* [twenty Androids from the workshops of Edison ... automated electro-humans]' (Villiers, 593).

This mention of the real American inventor Thomas Alva Edison looks forward to the peculiar conceit of *L'Ève Future* (1886), a novel in which Edison is the main character. The popular reputation of Edison's boundless capacity to invent had turned him, as Villiers notes, into a legend in his own time: '*Penthousiasme ... en son pays et ailleurs, lui a conféré une sorte d'apanage mystérieux, ou tout comme, en maints esprits* [the enthusiasm for Edison in his own country and overseas has given him a sort of special mystique, or something like it, in many minds]' (Villiers, 765). For several decades Edison was likely to appear as a character in SF novels that celebrated the exhaustless power of his inventive mind. An example is *Edison's Conquest of Mars* (1898) by Garrett P Serviss which was written as a more upbeat American sequel—unauthorised, naturally—to H G Wells' Martian invasion story *The War of the Worlds* (1898); Serviss' novel dramatises a supercompetent Edison inventing weapons of war and the antigravity device necessary to carry man to Mars, where the alien threat is neutralised, many Martians killed and the rest colonised. Compared to the instrumental militarism of many 'Edisonades' (as Edison-invention-adventures are called), Villiers de l'Isle-Adam's Symbolist-mystical treatment seems positively pacific.⁴

L'Ève Future opens with Edison in his New York mansion. His friend the English Lord Eward visits, driven to distraction by his love for the physically beautiful but spiritually shallow Alicia Clary. Eward has resolved to commit sui-

cide. Edison vows to save his life by constructing an artificial copy of Miss Clary perfect in every detail but with greater profundity of soul. This he does, and this simulacrum proves in every way better than the original—indeed, one of Villiers' themes in the novel is that under the logic of modernity the copy *is* preferable to the prototype. Eward, after initial doubts, falls in love with the android woman, named Hadaly, abjures suicide and leaves for Europe with his new bride. In a twist at the end, shipwreck destroys Hadaly and Eward is left 'inconsolable'.

A near hysterical fear of the seductive power of women permeates the novel. Women *en masse* are liars; beautiful to men only because of the 'lie' of make-up, to which lie the 'lie' of an android woman seeming human is preferable. Alicia Clary and women like her are presented not only as shallow and vain, but also as a positive threat to the health and even the life of males. According to Edison, '*en Europe et en Amérique, il est, chaque année, tant de milliers et tant de milliers d'hommes raisonnables qui,—abandonnant de véritables, d'admirables femmes ... se laissent ainsi assassiner* [every year in Europe and America thousands upon thousands of reasonable men, leaving their true and admirable wives, allow themselves to be assassinated like this]' by similar seductresses (Villiers, 904). In such a world, infested with lethal *femmes fatales*, the creation of perfect, pure artificial women is a simple service to male humanity. The fantasy here is not so much sexist (although, clearly it *is* that) as an adolescent wish-fulfilment very unedifying in a man in his mid-forties, which Villiers was at the publication of *L'Ève Future*. Hadaly is an anatomically exact life-size doll who can be programmed (by fiddling with twenty rings worn on her fingers and thumbs) to perform any action and assume any personality in perfect submissiveness. She/it, moreover, is programmed to kill any other men who might attempt to take sexual advantage of her: '*elle ne pardonne pas la plus légère offense; elle ne reconnaît que son élu* [she doesn't forgive the slightest offence; she recognises only her designated man]' (Villiers 860).

Villiers' contemptuous dismissal of—for instance—the very idea that a white man would ever choose a woman from another race [Villiers, 864], combined with his wearily offensive repetitions of various anti-female libels, make *L'Ève Future* a very difficult book to like. Yet this is a novel that has enjoyed a considerable posthumous reputation, in large part because of the sheer single-mindedness with which Villiers pursues his themes of the artificiality of contemporary existence. Those portions of the book that work best are the ones in which he integrates his vision of the allure of the technical falseness into a complete aesthetic. Going to collect his android bride Eward realises that he has come to see the cosmos itself as unreal:

L'horizon donnait la sensation d'un décor ... Du sud au nord-ouest se roulaient de monstrueux nuages pareils à des monceaux de ouate violette, bordés d'or. Le ciel paraissait artificiel [The horizon gave the impression of being only an ornamental painting ... from the south to the north-west rolled prodigious clouds like so many heaps of violet-coloured wadding fringed with gold. The heavens themselves seemed artificial]. Villiers, 976]

Insofar as it looks forward to a set of concerns that in the late 20th century would come to be called postmodern, as a *Blade Runner*-ish *precession* of the simulacrum, *L'Ève Future*, howsoever tainted with racism and misogyny, is a significant work. It forms a very interesting pairing with *Frankenstein* (written as many years before the end of the century as Shelley's novel was after the beginning). Shelley's monster, though an artificial creation, is in many senses more authentic, more 'real' (more passionate, more intelligent, more alive) than its creator. Villiers' artificial woman is less real, and her ontological artificiality infects not only 'womankind' (a function of Villiers' sexism) but, by degrees, the cosmos itself. The 20th-century's Sartrean fear of inauthenticity had already arrived.

SCIENCE FICTION IN THE 1890s

To employ a cliché, SF boomed in the 1890s, influenced by the ongoing success of Verne and Wells, not to mention the vogue for utopias created by Bellamy. Many hundreds of titles were published in this decade; and indeed the explosion in interest in the genre feeds through into the 20th century as an ever increasing gradient on the graph marking the productivity of SF authors. Of the many writers in this decade only a few, who enjoyed particular success or had particular influence on the development of the genre, can be noted here.

In Louis Boussenard's *Dix mille ans dans un bloc de glace* (10,000 years in a block of ice, 1890) the protagonist is frozen in the titular block for the titularly specified length of time, and awakes to find a utopian world-state populated by the diminutive descendants of Chinese and African humanity. Boussenard was very popular in France, and also in the (then) extensively francophone Russia, but has remained almost unknown in Britain and America. The title character of his *Les secrets de Monsieur Synthèse* (1888) is a 'synthetic' man (he has, for instance, dispensed with food, and subsists by swallowing daily ten pills and ten ampoules of fluid, which he prepares himself). An early example of the 'mad scientist' type, Mr Synthetic hopes to influence human evolution in a '*synthétique*' direction. His *Monsieur Rien* (*Mr Never*, 1907) concerns the adventures of an invisible man in Tsarist Russia.

American SF was also burgeoning. Milton Worth Ramsey's *Six Thousand Years Hence* (1891) opens dramatically when a passing rogue planet drags the hero's whole city into space. He experiences a series of varied adventures, returning after the titular six millennia to discover a utopian Earth. Addison Peale Russell's aerial adventure, *Sub-Coelum: a sky-built human world* (1893), combines its standard-for-the-genre ruthless eugenicism with early advocacy for what we now call behaviourism. 'Police punish women for drinking, whistling, snoring, bad cooking, and lapses in grammar—habits which are, not surprisingly, disappearing' [Pfaelzer, 102]. Robert D Braine's *Messages from Mars by Aid of the Telescope Plant* (New York 1892) concerns the discovery of a Pacific island that has been in contact with Martians. Other writers were beginning careers that would last well into the following century. J H Rosny *ainé* (meaning the elder) was the pseudonym of Belgian writer Joseph-Henri Boëx

(he sometimes shared the pseudonym with his younger brother Julian). He began as a disciple of Zola and, in 1887, after becoming immersed in palaeontology, he began a re-imagining of a mythical human history from the origins of humanity to the time when man is dethroned by a new and superior species, the ‘Ironmagnetics’ (*‘Ferromagnétaux’*) in the books *Les Xipéhuz* (1887), *Un Autre Monde* (*Another World*, 1888), *La Mort de la Terre* (*The Death of the Earth*, 1910), *La Guerre du feu* (*The War for Fire*, 1911) and *Les Navigateurs de l’Infini* (*Navigators of the Infinite*, 1925). In *Le Cataclysme* (*The Cataclysm*, 1896) an electromagnetic entity from outer space comes to France, disrupting the usual laws of nature as a result. The space explorers of Englishman John Munro’s *A Trip to Venus* (1897) discover an idyllic and aesthetic utopia on Venus (“‘The good of it?’ rejoined the Venusian; ‘it is beautiful and gives us pleasure!’” Munro ix.173). This otherwise unexceptional novel has some interest as the first, presciently, to feature a liquid-fuel rocket as a spacecraft (Munro was Professor of Mechanical Engineering at Bristol). The great Russian scientist Konstantin Tsiolkovsky’s famous paper on the use of liquid-fuelled rockets to travel through space ‘The Probing of Space by Means of Jet Devices’ was not published until 1898.

Few SF novels from this period, however, relied like this on the most up-to-date science. The cave-dwelling Moon-beings of Hungarian István Makay’s *Repülögépén a Holdbar* (*By Airplane to the Moon*, 1899) owe as much to Kepler’s *Somnium* as to any modern speculation; and Francis Worcester Doughty’s *Mirrikh, or, A Woman from Mars: a Tale of Occult Adventure* (1892) strains rational credulity exactly as far as its sub-title implies it will.

One of the best late-century interplanetary romances was *Auf Zwei Planeten* (*On Two Planets*, 1897) by the German philosopher and writer Kurd Lasswitz. Lasswitz is sometimes called ‘*der deutsche Jules Vernes*’, but in fact his science fiction has a very different flavour to the eminent Frenchman’s. A balloon expedition to the North Pole chances upon a settlement established there by Martian explorers. The humans discover the Martians to be socially and technologically superior humanoids, whose ethical code prevents them from exploiting others, even aliens such as the humans. But as the book goes on the Martians, increasingly convinced of their own superiority, start treating the humans with condescension and even contempt. It is revealed that the Martians hope to exploit Earth’s natural resources. Events deteriorate to the point where a battle breaks out between the Martians and a British warship (which the Martians easily win). Hostility between the British Empire and other Earth nations gives the Martians the excuse to declare the Earth a Martian protectorate and a military occupation begins mildly but soon escalates into an oppressive autocracy. However, human resistance, in part utilising Martian technology, is effective and the book ends with a peace treaty.

Auf Zwei Planeten is a deft combination of SF technological speculation (the Martians possess anti-gravity, long-distance communicators and a machine called the *Retrospektiv* with which they are able to look into the past) and simple but effective social/political observation into the unavoidably malign nature of any

supposedly benign imperialism. The combination of those two qualities, indeed, might be taken as a thumbnail definition of Golden Age hard SF: futuristic tech and individualist ideology. Perhaps this is why a number of luminaries from the Golden Age, including Arthur C Clarke, have expressed their admiration for this book. But good though it is, *Auf Zwei Planeten* is not in the same class as Wells' *The War of the Worlds*, which was published the following year (almost certainly without being influenced by Lasswitz's novel). It is to the peculiar genius of Wells that we now turn, after the briefest of final digressions.

'WILL'

These varied fables of perfected mobility reach a kind of apotheosis in the fetishisation of the human will itself—will taken not as a simple process of neuropsychology by which agents choose one action over another, but something much grander, a metaphysical expression of core truths about the universe—as, indeed, a sort of literalisation of the overcoming of all mundane restrictions. The texts this chapter has been discussing are all, to one degree or another, oriented towards this asymptote, if only in the sense that will codes 19th-century bourgeois capitalist fantasies of perfect circulability, perfect fungibility, perfect exchange and liberal freedom.

Indeed, looking back over the 19th century we can see a particular cleavage beginning to open between cultures that would continue to separate out more markedly in the 20th century. On the one hand there were technological and rational optimists, working often in a quasi (or explicitly) militaristic frame of mind, who imagined bringing society as a whole under the logic of the machine to the immense betterment of everybody. On the other there was a nebulous group, more or less suspicious of technology, drawn to the spurious consolations of pseudo-scientific mysticism. The correlatives for these two broad camps were, on the one hand, antigravity (as a symbol of science's ability to break the bounds of Earth), and on the other will (the notion, very common in SF from this period, that simply by willing it, the body, or perhaps the astral-body, could travel anywhere it wanted). Posterity has shown neither strategy to be effective in any practical manner; but whilst scientists have always been, by-and-large, dismissive of anti-gravity (an object with anti-gravity would also, presumably, possess anti-inertia and anti-momentum), the doctrine of will has a perfectly respectable philosophical pedigree.

German philosopher Arthur Schopenhauer distinguished between the world as it *appears* to our senses (which he called *vorstellung*, or representation) and the way the world *actually is*, behind the veil of appearance. This base reality of the universe, he argued, was nothing other than will. He believed not only that will was prior to our bodies and other thoughts in the human experience, but that it was the fundamental nature of the cosmos, manifested in the actions of animals, the magnetic action of the Earth's poles, and even gravitation. Schopenhauer's influence is evident on another influential German philosopher Friedrich Nietzsche, who took Schopenhauer's

rather pessimistic will and reinterpreted it as will to power, an aggressively amoral and joyous principle. Nietzsche despised Christianity as a religion of slaves and losers, and looked forward to the coming of a homo superior, the *Übermensch* (overman) who will live beyond good and evil, and embody the will to power in a direct way.⁵ If some 20th-century SF writers can be classified as Schopenhauerean (the outstanding example is the British writer Olaf Stapledon, whose protagonist uses will to traverse space and time in *Star Maker*, 1937), many more can be thought of as Nietzschean, particularly if we take the term to refer to the rather caricatured version of Nietzsche's philosophy that circulated in many quarters in the first half of the century. John Carter, the *Übermensch* hero of Edgar Rice Burroughs' *A Princess of Mars* (1912), travels to Mars at the beginning of that novel simply by willing it. Nietzsche's will to power did not originally mean power over others (it could equally well be rendered as creative power or self-knowledge), but it was taken by many, particularly those with fascistic sympathies, to mean exactly that; John Carter's triumphalist adventures on Mars—Barsoom, as the natives call it—see him defeating a bewildering array of alien antagonists in battle, and boasting, though blood-stained and battered, 'I still live!' However thrilling this may be to readers, particularly adolescent male readers, it is nevertheless informed by a quasi-fascist understanding of the will to power. A more sophisticated book in this respect is Alfred Bester's very highly regarded *The Stars My Destination* (1956). In Bester's imagined future (which we would call cyberpunk if the novel did not precede that movement by several decades) individuals have learned to teleport themselves merely by thinking clearly about the destination, a process referred to as the 'jaunte'. What this is, of course, is a concrete externalisation of the will, and it takes a peculiar hero, the beyond-good-and-evil Gully Foyle, to refine and develop this skill to mankind's eventual benefit.

In this respect, 20th-century SF writers are following in a tradition laid down by 19th-century thinkers and writers. In their own way Flammarion's spirit protagonists, who can will themselves to any point in the cosmos, are part of the same broad cultural discourse that also produced the philosophy of Schopenhauer and Nietzsche. If will continues to be important to SF today (witness the force of *Star Wars*, or the antics of the characters in *The Matrix*, or Superman flying by simply willing himself to fly) then it owes its longevity to roots that are closely twined around the development of SF as a genre.

NOTES

1. Darko Suvin is especially scathing about *The Romance of Two Worlds*: 'fraudulent ... proto-Fascist ... a narration based on ideology unchecked by any cognitive logic ... cobbled together from orts and scraps of esoteric metaphysics' [in James, 30].
2. Another utopia from this period, although much less well known today, might be mentioned here as a challenger for Carey's laurels of 'most influential'. Nikolai Chernyshevsky was a Russian political activist and radical. Imprisoned by the Tsar he

smuggled out a novel *Что делать? Chto delat?* (*What is to be done?* 1863) which includes a utopian programme for a future society founded on the principles of socialist equality. Lenin (who, of course, also published a book called *Chto delat?*) was directly influenced by Chernyshevsky, and he, of course, had a far greater practical effect on changing the world than the Bellamyite Nationalist party: 'as a blueprint for social and political change Chernyshevsky's novel exerted widespread influence and, through its effect on Lenin, contributed directly to changing the world' [Moser, 262].

3. A number of 'fairy' burlesques and theatrical extravaganzas light-heartedly adapted 18th-century SF about flying humanoids; for example, E L Blanchard's *Peter Wilkins, or, Harlequin and the Flying Women* (Drury Lane 1860) or James Planche's *The Invisible Prince* (1846). I am indebted to Jane Brockett for drawing these texts to my attention.
4. John Clute's article on 'Edisonade' [in Clute and Nicholls, 368–70] discusses the iconic appeal of Edison during this period and notes several other SF yarns featuring the great inventor, amongst them: J S Barney's *L.P.M.: The End of the Great War* (1915) in which advanced weapons made by an inventor called 'Edestone' end World War I and establish a world state; and Cleveland Langston Moffett's *The Conquest of America* (1916) in which Edison himself appears as an inventor of superweapons.
5. Comparing Nietzsche and Schopenhauer, Maudemarie Clark notes that 'both philosophers portray the world as will, and in doing so, rule out a goal or end-state of the world process that could be its justification ... [but] Schopenhauer sees it in terms of need or lack—his world is a hungry will devouring itself—whereas Nietzsche's is painted in tones of strength and abundance—his world is a superabundant will whose energy overflows. Schopenhauer idealizes the ascetic, one who turns against life and willing ... Nietzsche's ideal is opposite, the life-affirming person who does not find value in the process ... [who sees] the world under the aspect of abundance rather than lack, as the overflowing of energy without ultimate aim or goal, as play—in short, as will to power' [Clark, 144].

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Verne and Wells

Frenchman Jules Verne and Englishman Herbert George Wells remain, arguably, the two most famous writers of science fiction in the genre's history. Their names are conventionally linked, as in the present chapter, although they never met, came from different generations (Verne was 38 when Wells was born) and actually have little in common as writers. But, for reasons to do with the period in which they wrote as much as the individual excellence of their writing, their key works consolidated the increasing cultural dominance of SF as a form.

Not that there is consensus amongst critics about what the nature of their achievement actually was. Some critics deny that Verne wrote SF at all. Trevor Harris suggests that it is 'misleading' to call Verne a science fiction writer, and quotes Jean-Pierre Picot's flat denial of any SF aspect to his work [Harris, 109]. Andrew Martin, whose *The Mask of the Prophet: the Extraordinary Fictions of Jules Verne* (1990) remains one of the best full-length studies of the writer, is embarrassed enough on Verne's behalf as to express the desire to rescue him from categorisation as a science fiction writer altogether, a category Martin considers (quoting Kurt Vonnegut) to be carcereal and even urine-stained.¹ In fact Verne is so completely a science fiction writer that the embarrassment must adhere to those whose preconceptions distract them from the fact.

These critics want to make a case for Verne as a 'serious' writer, although many have taken him as a mere entertainment; and their animadversion against the very thought of him as writing SF is part of that. It is unfortunately true that Verne suffers, even today, from the belief that he was a provider of mere pabulum, his books only a confection of generic adventure storytelling mixed in with 'interesting facts' of a, largely, geographical, geological or flora-and-fauna nature. Many readers certainly have enjoyed his tales of adventure and incident in an untroubled way as 'mere entertainment'. This does not mean his books are exhausted by such a reading.

Indeed, the enormous popularity that Verne achieved, first with his novels and later with many adaptations and film-versions of certain key tales, consoli-

dated a particular sort of technology fiction as being core to SF as a genre; a story not only premised upon one or other technological artefact (or in some cases upon the technical facility of certain individuals, the *techne* ranging from invention, construction, potholing and the like)—but also a story that *enframes* the world in a certain way. Arguably it is this enframing that lies behind Verne's enduring appeal: global, capable, mobile, and yet grounded at all points in comforting bourgeois social and cultural certainties. As Sarah Capitanio points out, despite the ceaseless to-ing and fro-ing in his books there is a sort of *stasis* at the heart of Verne's imaginings: 'situations tend to be played out in isolation and the characters then return to the world "as we know it" which itself remains largely unchanged and unchallenged'. This is connected to the fact that 'the characters themselves undergo no fundamental evolution as a result of their extraordinary experiences':

At the end of the novels the speculative objects and marvellous machines are destroyed, the world returns to comforting order, and the reader ... is encouraged to accept an unproblematical status quo. [Capitanio, 70–1]

The interesting thing about this aesthetic inertia is precisely the way it exists in a powerful dialectic with the principle of movement. The elements of almost all Verne narratives are well summarised by Thomas D Clareson: 'a man of reason ([often] a scientist) ... journey[s] to some exotic destination, generally somewhere on Earth; and [experiences] a series of largely disconnected adventures, most often involving the threat of pursuit and capture' [Clareson, 38]. Travel, in both a literal and metaphorical sense, is the core appeal of Verne's works. It is no coincidence that the great age of exploration was, in fact, coming to an end by the last stages of the 19th century. The world had been mostly explored, and Verne's fictions tapped into the sub-stratum of human desire that there be mysterious places still to uncover. Another way of putting this would be to say that Verne created an imaginative space into which the exploring urge could move itself, an enframing of the world as an unknown still to be unveiled. This space was grounded at all times in contemporary discourses of the possible and the known; Verne almost never extrapolated or speculated, his imaginative realm was not escapist, and in fact it was continually being brought back to the world with which his readers were familiar. All this represented, of course, an ideologically determined trajectory; it is in the nature of technology fiction to return to the status quo precisely because it enframes the world as a ready-to-hand resource, and by doing so re-inscribes the bourgeois perspective on the world *as* a resource. It would not overstate matters to call Verne the first great laureate of bourgeois subjectivity—more so even than Dickens, who was always rather suspicious of new technologies and who was more interested in his peripheral characters than his central figures. For Verne, (expensive) technological commodities enabled a sort of splendid isolation of the bourgeois individual. Roland Barthes put it very well:

Verne has built a kind of self-sufficient cosmogony, which has its own categories, its own time, space, fulfilment and even existential principle. This principle, it seems to me, is the ceaseless action of secluding oneself. Imagination about travel corresponds in Verne to an exploration of closure, and the compatibility between Verne and childhood does not stem from a banal mystique of adventure, but on the contrary from a common delight in the finite, which one also finds in children's passion for huts and tents: to enclose oneself and to settle, such is the existential dream of childhood and of Verne. The archetype of this dream is this almost perfect novel: *L'Île mystérieuse*, in which the manchild re-invents the world, fills it, closes it, shuts himself up in it, and crowns this encyclopaedic effort with the bourgeois posture of appropriation: slippers, pipe and fireside, while outside the storm, that is, the infinite, rages in vain. [Barthes, 65]

The contrast with Wells is a sharp one. Though in some senses a less attractive human being than Verne, Wells provided SF with a different and more adaptable model; a series of more thoroughgoing Feyerbandian protocols that dramatised not stasis but radical change—many of which are so deeply embedded in an ideology of change that we might call them revolutionary. In contrast to Verne's static characters in motion, Wells' characters are more often than not complex individuals who more-or-less *passively* experience adventure, not venturing further from home than they have to, often complacent and rather unadventurous. He excelled in portraits of lower-middle class conventional individuals. Indeed, those of his characters who do not fit into the procrustean bed of English parochial respectability are often characterised precisely as dangerous, even diabolical (the two most prominent examples here are the Invisible Man and Dr Moreau).

The archetypal Wells story concerns the eruption of the extraordinary into the ordinary. In other words the dialectic, for Wells, worked as an inverted version of Verne's. Character and action was frequently static, but the conceptual and imaginative elements were not only in constant motion but also related to a fundamental belief in the primacy of change. For many (myself included) this makes Wells by far the more interesting writer; although to say so is not to underestimate either the impact, or the exceptional skill, of Verne's adventure tales.

VERNE

Jules Verne was born in the French port Nantes in 1828 into an affluent bourgeois family (his father was a lawyer). In 1839 he tried to run away from home, taking a position as a ship's boy on a vessel bound for India. He was recaptured by his father at Paimboeuf, down the coast from Nantes, and in the face of his paternal displeasure he is supposed to have promised '*je ne voyagerai plus qu'en rêve* [I will no longer travel except in my dreams]'. In later life his continuing attachment to an adventure-loving Byronic romanticism confined itself to a refusal to follow in his father's professional footsteps, instead moving to Paris in 1848, living on a parental allowance and devoting himself to a writer's voca-

tion. For several years he wrote prolifically, composing many plays, only a few of which were staged, together with a number of short stories and other pieces. Some of these are interesting in the light of Verne's later development—for instance, the disaster story 'Un voyage en ballon', which was published in the magazine *Le Musée des Familles* in 1851. But none of them were particularly successful. His first long prose work, *Martin Paz*, was a historical narrative about the conflict between Spanish explorers and Peruvian Indians; published in 1852, it was another work which failed wholly to ignite the torch of his literary reputation. Despite his initial lack of success as a writer Verne resisted pressure from his father to become articled as a solicitor, although in 1854 he did become a stockbroker in Paris, a career he pursued for eight years, and which enabled him to marry in 1856. But he continued writing: short stories, poetry and even librettos for a number of operettas, including a simian-themed opera *Monsieur de Chimpanzé* (1858). Most of the work from this period remains unpublished. He took two tours abroad, travelling to Scotland in 1859 and Scandinavia in 1861 (a book based on the former of these journeys, *Voyage en Angleterre et en Écosse*, remained unpublished until 1989). Verne's only child, Michel Verne, was born in 1861, although his wife had two children by a previous marriage.

This rather unremarkable career was transformed in 1862. Having been introduced to the Parisian publisher Pierre-Jules Hetzel, Verne gave him the manuscript of *Cinq semaines en ballon*, a ballooning-across-Africa adventure. Hetzel not only published this, but signed a contract with Verne to issue a series of books under the general title '*voyages extraordinaires*'. The contract required three volumes a year (some of Verne's novels were published in three volumes, some in two), although this was later reduced to two volumes. Over the decades that followed this partnership became a worldwide publishing phenomenon.

As the *voyages extraordinaires* were appearing in volume form, Hetzel established a magazine aimed at children and young adults, *Le Magasin d'Éducation et de Récréation* in 1864, to which Verne was a frequent contributor. Indeed, *Education* combined with *Recreation* sums up the ethos of Verne's science fiction: exciting adventures are always laced with extensive factual material, often copied by Verne from a range of scientific textbooks and sources directly into the narrative (a fashion that later SF would describe by the uneuphonious coinage, infodumps). The typical Verne-Hetzel text combines an encyclopaedic didacticism with wide-ranging adventures in a forcefully propelled narrative, usually structured around a journey motivated by some external force (escape from pursuers, the urgent search for the solution to a mystery or some other specific goal; more rarely, the motive is simple exploration). The books also included illustrations. Indeed, re-issued under the collective title '*Collection Hetzel: les Voyages Extraordinaire*' the books were lavishly and gorgeously illustrated, almost to the point of becoming (like Robida's work) comprehensible primarily as image-texts. In this formal feature they anticipate the later developments of SF as a mainstream phenomenon. Verne's enormous popularity in France soon spread to non-francophone nations with transla-

tions which, although they served to disseminate Verne's work, were sadly incompetent in many respects, cutting, bowdlerising and sometimes mistranslating the originals.²

However successful and prolific it eventually became, the relationship with Hetzel did not begin smoothly. Verne's second submission to the publisher was the future-fantasy *Paris au XXe siècle* (*Paris in the 20th Century*, written 1863). Inventive and engaging if narratively underpowered, this dystopian-tinged version of future France was written out of what we have already seen was the context of a vigorous 19th-century tradition of future fictions. But Hetzel rejected the work outright (it was not published until 1994), apparently telling the young author '*vous avez enterprisé une tâche impossible* [you have taken on an impossible task]' [Harris, 120]. This seems to have turned Verne away from more freewheeling imaginative speculation.

Discouraged from working in the idiom of future utopia/dystopia, Verne instead excavated an older but (by the 1860s) less popular mode of science fiction in *Voyage au centre de la terre* (*Journey to the Centre of the Earth*, 1864). Professor Lidenbrock discovers directions to the centre of the Earth in the writings of a long dead Viking called Arne Saknussemm and leads a party following in Saknussemm's footsteps consisting of himself, his nephew Axel and a guide Hans. Where previous subterranean fantasies tend to hurry their protagonists into the subterranean realm so that the various utopian or other wonders can thereby be elaborated, the reader is halfway through Verne's novel before she even gets a glimpse of the inside of the extinct Icelandic volcano through which ingress to the '*centre de la Terre*' is made. More strikingly, the bulk of Verne's underground adventures are rendered with a powerful, claustrophobic sense of close, dark, dangerous spaces. Where Nils Klim (for instance) passed into a massive airy space lit by a bright central sun, Verne's protagonists struggle through a repetitive series of lightless caverns, tunnels and crevasses. At one point, separated from his fellows, the narrator Axel despairs: '*j'étais enterré vif, avec la perspective de mourir dans les tortures de la faim et de la soif ... perdu, dans la plus profonde obscurité!*' [I was buried alive, facing death by the tortures of hunger and thirst ... lost in the deepest darkness!]' [Verne *Voyage au centre*, 176, 183]. The effectiveness of this depends partly on the sense of realism with which it negotiates its story, which is to say, the reader's tacit belief that underground exploration would actually be like this vision of extreme and hazardous potholing, rather than the instant access to fertile lands of *Symzonia*. But there is more to the novel than its approach to verisimilitude. The text as a whole is propelled by mystery: set in motion by a cryptographic mystery (a set of runes which Lidenbrock, over several chapters, decodes to reveal the path to the underworld); and continued by more conventional narrative devices (what will they find at the centre of the Earth? Did Saknussemm truly precede them? Will they survive?). The darkness they encounter, in other words, functions as an externalisation of precisely this principle of the unknown.

What they do find, eventually, is something which functions as the symbolic or emblematic *locus classicus* of mystery in Verne's writing, a vast sea

(*'un océan véritable ... desert et d'un aspect effroyablement sauvage'* Verne *Voyage au centre*, 193). Once in this illuminated space (light created, we are told, by *'les nappes électriques'* [electric layers]) that shine with *'une remarquable intensité'* the party constructs a raft out of trees they find growing beside this 'middle sea' (Axel calls the ocean *'cette Méditerranée'*, 203) and presses on with their journey. They see gigantic mushrooms growing on the shore, and witness dinosaurs swimming and fighting in the water. Their journey underground has been, in effect, a journey back in time. Eventually the raft is swept into a shaft, elevated rapidly by exploding lava, and all three adventurers are cast alive onto the summit of Stromboli in Italy. That a novel so filled with detailed technical and scientific information should resolve itself so effortlessly into a grand symbolist narrative (the mysterious sea at the heart of the world functioning eloquently as a multivalent signifier: the primal scene; the sub-conscious; the Sea of Faith) effectively cemented one of the prime textual strategies of SF. Particularly when written in the Vernean tradition, SF so often blends a formal realism with an aesthetic symbolism.

Voyage au centre de la terre was followed by a SF adventure oriented in the opposite direction, not down but straight up. *De la terre à la lune* (*From the Earth to the Moon*, 1865), Verne's third *voyage extraordinaire* concerns a plan by veterans of the American Civil War, members of the Baltimore Gun Club, under the leadership of the improbably named Impey Barbicane, to travel to the Moon in a craft shot from a gigantic cannon. In fact the novel is wholly concerned with the conception, planning and construction of this spacecraft; it ends with the manned projectile being fired from Florida, but tantalisingly, tells us nothing more than that *'un nouvel astre'* is then visible in the sky. Five years later Verne published a sequel, *Autour de la Lune* (*Around the Moon*, 1870) which finally reveals what became of the explorers. There is a tendency by critics to treat these two books as if they were one. In fact they are not.

De la terre à la lune, although it contains a certain amount of scientific information about the Moon (and rather more information on the history and physics of ballistics and gunpowder) is not really concerned with extraterrestrial affairs at all. Instead the emphasis is on the bullish confidence of the American protagonists, and on their frankly belligerent and imperialist ambitions. One member of the gun club reflecting on the end of the American Civil War, laments *'et nulle guerre en perspective! ... et cela quand il y a tant à faire dans la science de l'artillerie!'* [no war in view! ...and this when there is so much to do in the science of artillery!]' (Verne, *De la terre*, 12). Barbicane announces the flight to the Moon not in the interests of science but of *'conquête'*, promising that the name of the Moon *'se joindra à ceux des trente-six États qui forment ce grand pays de l'Union'* [will join the 36 States that make up this great country of the Union]' [Verne, *De la terre*, 22]. All the busy preparation serves to establish the discourse of martial expansion and triumph, and it carries the whole of the USA along with it. The emblem of this novel is the enormous gun, bigger and more powerful than any made before.³ *Autour de la Lune*, on the other

hand, is actually concerned with a flight in space; its mood and tone, quite apart from the balance of its scientific content, is very different.

One historical fact, over which Verne of course had no control, has massively overdetermined the way we read *De la terre à la lune* today: actual voyages to the Moon took place in the 1960s and 1970s. Commentators rarely resist the temptation to read Verne's fictional account through the lens of these missions, which often provokes a tedious itinerary of points where Verne was 'right' and where 'wrong' (so: he was correct in thinking the moonshot would be launched from Florida and that the spacecraft in flight would be steered with rockets, but wrong that the launch mechanism would be a giant cannon). Indeed, so widespread is this impulse that it bears reiterating how inappropriate it is. Although Verne inhabits many of the idioms of 'scientific fact' his books are not factual, and certainly not prophetic. His books mobilise several contemporary ideological and cultural pertinences, but not the future.

Nevertheless it is perhaps instructive to consider a few of the points raised by people following the latter reading. One critic, for instance, praises Verne for realising that a flight to the Moon would be 'a vast engineering enterprise' requiring 'the labour of thousands and the expenditure of millions' (rather than the 'solitary genius' building a spaceship 'in a back yard' imagined by many SF writers); but then marks Verne down for 'mak[ing] no allowance for air resistance' suggesting that the shell would be 'vaporised before it ever left the gun muzzle', and moreover—a point noted by many denigrators of Verne's SF imagination in this book—that 'the acceleration would have spread the heroic voyagers over the base of the inside at the initial shock' [Hammerton, 104]. The former objection presumably only reflects Verne's over-optimistic appraisal of the tensile strength of aluminium. The latter is more interesting. In a novel crammed with calculations about the dimensions of the craft, the acceleration required to lift it out of the Earth's gravity, the explosive material needed to provide this and so on, it is strange that none of the characters considers the effects upon the travellers' bodies of such rapid acceleration. This seems doubly strange when we recall the extensive 19th-century discourse on the debilitating effects of rapid acceleration upon the human body. This leads to the following thought: perhaps they *are* killed by the launch at the end of the novel.

Of course in the book's sequel, *Autour de la Lune* (1870), the astronauts are alive. But this does not necessarily contradict what I am saying. It is only in *Autour* that Verne mentions (for the first time) an elaborate system of '*tampons ... cousins d'eau ... cloisons brisantes* [buffers, water cushions, collapsible partitions]' specifically designed to dampen the effect of '*cette vitesse initiale de onze mille mètres qui eût suffi à traverser Paris ou New York en une seconde* [this initial velocity of 11,000 metres which was enough to traverse Paris or New York in a second], [Verne *Autour*, 20]. Nevertheless we may wish to infer that, until the sequel is written (with Verne's life-saving afterthoughts) the astronauts were in fact slain by the unforeseen effects of acceleration. This at least makes sense of the rather mournful tone of the final pages of *De la terre à la lune*, in

which everybody except the constitutionally optimistic J T Maston [*'[le] seul homme [qui] ne voulait pas admettre que la situation fût désespérée'*, Verne *De la terre*, 243] despairs. *De la terre à la lune* ends with an explosion which Verne specifically describes as massively more destructive than its creators anticipated. Not only does it destroy a large stretch of Florida, its effects are also felt *'à plus de trois cents milles des ravages américains* [more than three hundred nautical miles from American shores]. To read the book in this fashion is to suggest, in effect, that it works as a satire on American gun-love, a national belligerence that Verne saw as unshaken by years of bloody civil war, and which—in this book—although supposedly channelled into pure exploration in fact leads to a catastrophic explosive destruction.

My larger point is to suggest the ways in which Verne's conception of his books changed, sometimes radically, between publishing one book and later writing a sequel. In *Vingt mille lieues sous les mers* (*Twenty Thousand Leagues Under the Seas*, 1869–70) the mysterious figure who captains the submarine Nautilus under the Latin pseudonym *Nemo* (No man) is a revolutionary Polish aristocrat whose family was slaughtered by the Russians. Hetzel insisted on Verne removing most of the direct allusions to this identity as too contentious, and liable to offend Russian readers, which demographic provided a large market for French books in the 19th century [see Butcher, 434–43]. In the book's sequel *L'Ile mystérieuse* (*The Mysterious Island*, 1874) Nemo is revealed as an Indian Prince, whose animus is against the British rather than the Russians, although many details of his age and personal history do not tally with the earlier book. In another work *Voyage à travers l'impossible* (*Journey Across the Impossible*, co-authored with Adolphe d'Ennery, 1882), Nemo, the radical and friend of the oppressed, has become 'a reactionary and a bigot' expressing 'Colonel Blimp-like' views [Butcher, 443]. This is as much as to say that Nemo cannot be taken as fixed or given. As with any fictional character, he is a textual construction in flux, shaped by the local demands of particular stories and the cultural idiom in which Verne was writing at any given time.

To say this is not to criticise Verne. On the contrary, it is to suggest that the ongoing project of the *voyages extraordinaires* was one formally *in*, as well as about, movement; a textual accumulation determined (to quote Nemo's motto) *'mobilis in mobile'*, 'mobile in the mobile element'. Another way of saying this would be to foreground the almost obsessive fascination with moving on, with travelling continually to new destinations, which is at the heart of all Verne's novels and finds expression not only in subject-matter but also in form. In other words, Verne's novels are not only about the restless urge to move on, to explore further, they also embody this thematic in their own form. There is an evident thematic tension here between the impulse to fix and define (the Russellian scientific apprehension of nature) and the overwhelming urge to *move on* (in travel, often galvanised by pursuit). This restlessness so often takes a circular trajectory—*around* the world, not *to* the Moon but *around* the Moon and so on—precisely because Verne is articulating an ideological stasis.

To call the appetite for sheer travel that characterises many of Verne's books 'tourism' is to underplay both the scope and the importance of the concept. The three English protagonists of his first publication *Cinq semaines en ballon* (1863) spend, as the book's title says, five weeks in a balloon. Their explorations take them across but not beyond Africa. *Les Enfants du Capitaine Grant* (*Captain Grant's Children*, 1867–8) is more comprehensive. Scotsman Lord Glenarvan catches a shark from his yacht the *Duncan*, and pulls a bottle from its belly, inside of which he finds three fragmentary messages in broken English, German and French. Piecing these together leads the *Duncan* on a round-the-world voyage to search out the survivors of the shipwreck from which the messages derive. But the main thrust of this lengthy novel (it runs to about 250,000 words) is identified in its sub-title '*voyage autour du monde*', a circumnavigation that is related with extensive geographical, zoological and cultural detail. The frontispiece to the 'édition Hetzel' foregrounds this global scope with Verne's name spread, as if he were a continent rather than an author, over a map of the whole Earth; and beneath it the *Duncan*, the agent of travel, filling the sky with as much smoke as the erupting volcano on the left-hand side (Fig. 8.1).

This global range is also embodied in one of Verne's most famous titles, *Le tour du monde en quatre-vingts jours* ('The eighty-day tour of the world', 1872), in which yet another Englishman, Phileas Fogg, combines the ballooning of *Cinq Semaines* and the circumnavigating ambition of *Les Enfants de Capitaine Grant*, winning a bet by circling the globe in the titular four-times-twenty days.

It is not coincidental that all these world-spanning heroes are British—Verne describes Phileas Fogg as '*Anglais, à coup sûr* [most assuredly English]'. Verne is apprehending, in fictively extrapolative terms, the expansive ideology underpinning British Imperial growth. In the broadest sense we can see the new primacy of science as a discourse mapping itself globally in Verne's fictions. But this is not to say that Verne, respectable bourgeois though he was, *approved* of Imperialism. On the contrary, many of his books valorise the revolutions of peoples against imperial rule; the Franco-Canadian independence movement of the 1830s in *Famille-sans-nom* (1889) and the struggle for Home Rule in Ireland in *P'tit bonhomme* (1893) are two examples amongst many. Andrew Martin notes that 'Verne appears especially critical of the atrocities committed in the name of the British Empire', especially in *Les Enfants du Capitaine Grant* and *Mistress Branican* (1891), although he adds that many novels 'seem to tolerate or even welcome the ineluctable necessity of colonial domination' [Martin, 23].

But in Captain Nemo, Verne's most enduring archetype, we find (to quote Martin again) 'the most lyrical and committed of anti-imperialists, a champion of the oppressed' [Martin, 23]. The novel which Nemo dominates, *Vingt mille lieues sous les mers: tour du monde sous-marin* ('Twenty Thousand Leagues Under the Seas: An Underwater World-tour', 1869–70), is probably the most celebrated of Verne's titles. It begins with a mystery, the disappearance of a number of ships at sea, which is blamed on a sea monster. Oceanologist

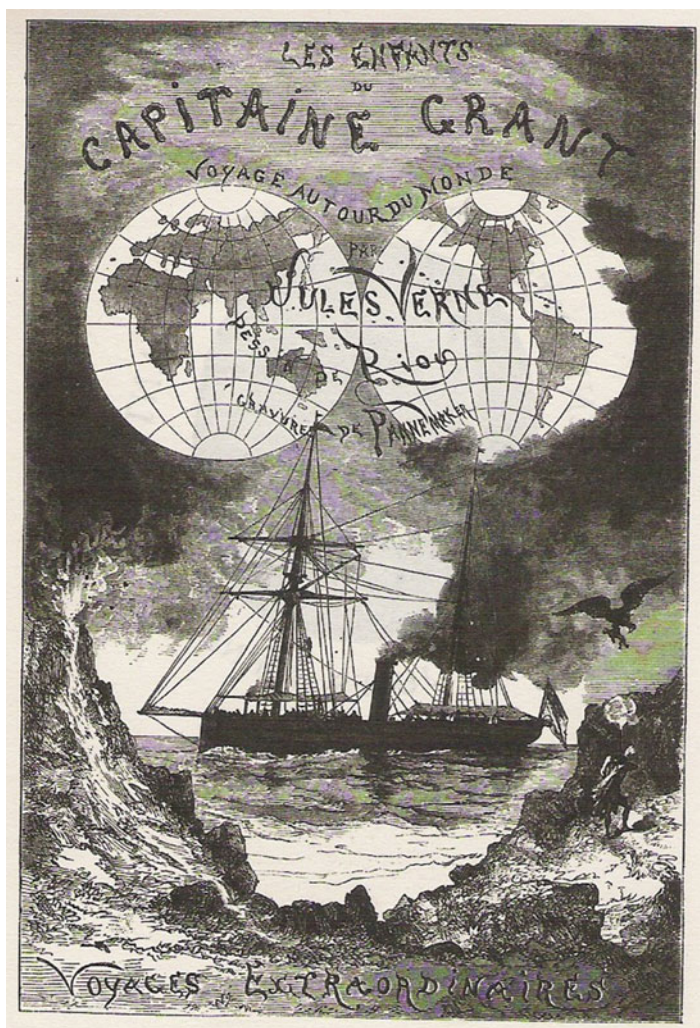


Fig. 8.1 Frontispiece to Verne's *Les Enfants du Capitaine Grant* (1867–8)

Dr. Pierre Aronnax, his companion Conseil and a Canadian harpooner Ned Land are hired by the US government to join an expedition on the USS *Abraham Lincoln* to address this matter. After months of searching the ship finds its monster, which turns out to be an enormous, electrically powered submarine, aboard which Aronnax, Conseil and Ned Land are held as prisoners by the eccentric but charismatic Captain Nemo. The Captain permits the trio to live aboard his vessel, the *Nautilus*, as his guests, but tells them that, to preserve his secret, he can never release them. The remainder of the three-volume adventure details the *Nautilus*' travels around the globe, and Aronnax witnesses a wealth of marvellous undersea sights, both the biology of the sea

and such locations as the ruins of Atlantis. Nemo reveals his sympathy with oppressed people, and sinks a destroyer from an unspecified imperial power. Eventually the three do escape, whilst the *Nautilus* is caught up in a terrible maelstrom off the coast of Norway. The book ends ambiguously '*mais qu'est devenu le Nautilus? A-t-il résisté aux étreintes du maelström? Le capitaine Nemo, vit-il encore?*' [But what happened to the Nautilus? Did it survive the clutches of the maelstrom? Is Nemo still alive?]' [Verne *Vingt mille*, 616].

There had been submarine adventures before Verne's. The genre can be traced back to Bishop John Wilkins, whom we have already encountered—one chapter in Wilkins' *Mathematical Magick* (1648) is entitled 'Concerning the possibility of framing an Ark for submarine navigations'. Verne named the *Nautilus* after an actual submarine built by American Robert Fulton in France for Napoleon I, and Butcher lists three submarine-set fantasies published in France in 1867–9 alone [*The Depths of the Sea*, *Submarine Adventures* and *The Submarine World*, Butcher, xiv]. But Verne's story captured the public imagination in a way none of the precedents did.⁴ Nemo can travel anywhere he likes, and yet never leave home—an exceptionally well-appointed and luxurious home at that. Everything he needs is manufactured from the materials the sea provides. He is pure circulation, and yet pure bourgeois stability (which is to say, although he is purportedly a Prince, in fact he embodies a fundamentally bourgeois conception of wealth). He is the first wish-fulfilment hero-figure of the bourgeois SF novel.

Vingt mille lieues is also a pleasantly didactic read. Verne has assimilated and neatly reproduces enormous amounts of data about the sea (the illustrations are also, mostly, instructive). This is another facet of the stasis of Vernean fictionalising; he is much more comfortable with the known than the unknown. The reader of *Autour de la Lune* discovers throughout how uncomfortable Verne was with unsubstantiated speculation. The narrative of *that* novel very deliberately blends careful extrapolation on the state of contemporary astronomical knowledge (often supported with footnotes), with more fanciful speculation; this latter always put into the mouths of characters, and almost always contradicted by interlocutors. Passing above the dark side of the Moon, the voyagers notice '*étranges rayons* [strange rays]' for which they cannot account. Michel insists that they are seeing light reflected off a vast ossuary, a desert of bleached bones of a thousand generations of lunarians ('*cette plaine ne serait alors qu'un immense ossuaire sur lequel reposeraient les dépouilles mortelles de mille générations éteintes*', Verne, *Autour*, 171–2). But the matter cannot be decided upon; the voyagers do not land, and the mysteries of the far side are preserved.

The surprising thing is just how effective a literary device this bet-hedging is. Rather than unveiling the mystery of the Moon, Verne manages to increase that mystery precisely by probing into it. Is there life in the craters and valleys of the far side of the Moon? Even if it is barren now, has the Moon ever been inhabited by humanoids? Could the whiter patches on the surface be vast fields of bones? Is the far side littered with monumental architectural ruins, or is

that merely a trick of the observers' pattern-loving minds? Without having to commit to one specific rationalist narrative, Verne manages to hint at powerfully suggestive narratives—deep time, environmental disaster, humanoid lunar inhabitants fleeing the dying globe and coming (perhaps) to the Earth—whilst at the same time providing the reader with a defamiliarising raft of statistics that, in fact, do not elucidate.

As in many Verne novels, dramatic tension is generated by a particular lack of scientific preparation. Having splashed down in the Pacific, the projectile is assumed to have sunk, and a submarine expedition is mounted; but of course the projectile—an airtight container whose displacement is far greater than its weight—floats ('*tous ces savants*,' Verne tells us, '*avaient oublié cette loi fondamentale* [all the experts had forgotten this fundamental law]', *Autour*, 318). What are we to make of this frankly culpable forgetfulness on behalf of the '*savants*'? Time and again in Verne's books, denouements depend upon the belated realisation of scientific facts that, by all reason, the protagonists ought to have known—straightforward calculations that have been wrongly worked-through provide eucatastrophic climaxes in *Les Cinq cents millions de la Béguine* (1879) and *Sans dessus dessous* (1889). It is almost as if Verne wishes to dramatise a human mobilisation of science and technology that, whilst allowing phenomenal achievements, has gaping blind spots; a combination of brilliant insights and idiotic misapprehensions and omissions. I would argue that, quite apart from the narrative payoff of enabling Verne to generate dramatically satisfying twist-endings, this aporia in fact articulates the fundamental inability to close the gap between Verne's realist-technological (and bourgeois) ambitions, and the mystical-symbolic aesthetic that, sometimes unconsciously, acts as the motor to his greatest fictions.

By the mid-1870s Verne's fortunes were still being shaped by the success of *Vingt mille lieues sous les mers*. His sequel to that work, *L'Île mystérieuse* ('*The Mysterious Island*', 1874), only reveals itself as sequel in the third of its three lengthy volumes. Indeed, it is a double sequel; for it carries on the story of one character, Aytoun, who had previously been abandoned on a desert island at the end of a different novel altogether, *Les Enfants du Capitaine Grant*. *L'Île mystérieuse* begins as yet another Vernean balloon adventure: five men escape the siege of Richmond during the American civil war by ballooning out, but are blown wildly off course, eventually coming down on the island of the book's title. Much of this very long work concerns the efforts undertaken by this group to survive on the island, with many digressions on wildlife, natural history, engineering and the strategies of self-sufficiency. That they do not die, despite hostile natural conditions, and an attack by pirates, is in part due to aid they mysteriously receive at crucial moments. The source of this help is finally revealed to be Captain Nemo.

The effect of this revelation (which happens very near the end of this very long novel) is to reinforce a certain logic of circularity quintessentially Vernean, the unknown is revealed to be known all along. This touches once again on the subject of the stasis of Verne's aesthetic. In *Hector Servadac*, *voyages et*

aventures à travers le monde solaire (*Hector Servadac, journeys and adventures around the solar system*, 1877) a meteor glancingly crashes into the Earth carrying a sizeable chunk of northern Africa off into outer space, upon which are not only the titular Servadac (a French military officer) and his servant Ben Zoof, but various other European characters: a Russian Count; the crew of his yacht; a group of Spaniards; a young Italian girl; a Jewish merchant; and a French professor. It is the professor who first understands that they are all travelling through space on an object, which patriotically he named Gallia. This new mini-world (still possessed of atmosphere and, apparently, full gravity) passes into the outer reaches of the solar system, freezing as it does so—the humans survive by retreating into volcanically heated caves. Eventually, and after observing many interesting astronomical sites, the meteor returns to the inner solar system. The humans construct a balloon out of the sailcloth of a ship and leave their world, hoping to transfer themselves to the atmosphere of Earth and so return home; and in a bizarrely dreamlike conclusion they do just that, finding the world exactly as they left it. It seems that Verne wanted to portray a world devastated by the catastrophe but Hetzel demurred, pressing upon his author the need not to leave too tragic a taste in their readership's mouth. The net result is a book which, after seemingly taking the reader on the most fantastic of fantastic voyages, ultimately reveals that they have been literally nowhere.

Les cinq cents millions de la Bégum (*The Bégum's Five Hundred Million*, 1879) returns to the icon of the enormous gun. Begum is Hindustani for queen or lady of high rank; and Verne uses this notionally orientalist device as the springboard for a schematic utopian-dystopian fantasy set on the other side of the world from India, in America. The two main figures of the story are the Frenchman Dr. François Sarrasin and the German Professor Schultz who, by virtue of both being related to the Begum, prove to be sole heirs to the titular fortune of 525 million francs (lawyers topslice a cool 25 million francs for their services, rounding the sum down neatly). With his portion of the money Sarrasin builds an ideal community called France-ville in the wilderness of the American northwest. Professor Schultz uses his money to construct his own city called Stahlstadt (Steeltown); a place of rigid mechanisation and ruthless adherence to social and technological order. The main output of Stahlstadt is weaponry, culminating in a gigantic cannon with which Schultz intends to destroy France-ville by firing an enormous shell filled with compressed carbonic acid that will simultaneously gas and freeze the French settlers. The frontispiece to the 'Collection Hetzel' edition of the novel is dominated by its representation of this enormous piece of ordnance, with the mad Professor Schultz standing by the muzzle, whilst below the ideal rural utopia of France-ville and the dark satanic weapon factories of Stahlstadt are located, schematically opposed, in the bottom left- and right-hand corners respectively (Fig. 8.2).

This novel, published only a few years after France's humiliating defeat at the hands of the German army in the Franco-Prussian War of 1870, has been read by several critics as a crude piece of wish-fulfilment (Andrew Martin sug-

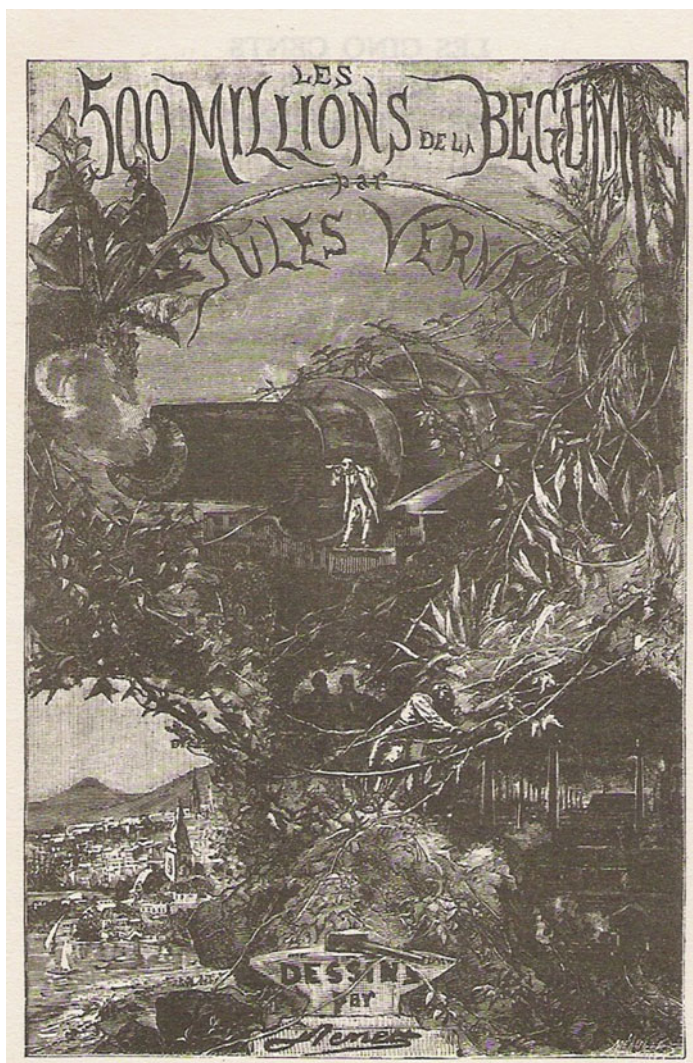


Fig. 8.2 Frontispiece to Verne's *Les Cinq cents millions de la Bégum* (1879)

gests that 'Verne obliquely recapitulates and rewrites German defeat of France ... making France the victor this time round and reinscribing the irrevocable facts of history in a more congenial form', Martin, 60–1). Certainly the novel's libel of German-ness seems egregious. But the book works much more vividly as a commentary upon utopian tradition itself. As political commentary the very binary of 'good city–bad city' is conceptually airless, too removed from reality, located as it is in a thinly realised American location (we never learn what the US Federal authorities make of these two communities forging their

respective armies, and Stahlstadt's weaponry of mass destruction, on US soil). But as utopian meta-text the book is full of penetrating insight into the relationship between two different modes of utopian idealism: the pastoral and the authoritarian. That Verne emblematises the mediation between these two cities in terms of a gigantic cannon constellates destruction, militarism, a degree of optimism (after all this is a cannon that could, in Verne's cosmos, carry men to the Moon) and a familiar technological gigantism.

In the event, Schultz fires his cannon, but he has—as is so often the case with Verne's scientists—mistaken his calculations: with a muzzle-velocity of '*dix mille metres à la second*', the shell not only overshoots France-ville, but also overshoots the horizon, putting it into orbit and providing the Earth with '*un second satellite*' [Verne, *Cinq Cents mille*, 183]. Schultz, enraged by this failure, plans a general assault on France-ville, intending to destroy it utterly, to turn it into '*une Pompéi moderne*' such that it would be '*l'effroi et l'étonnement du monde entier*' [the object of terror and astonishment of the whole world], (Verne, *Cinq Cents mille*, 230). But before he can send this order he is himself killed, frozen by the accidental detonation of one of his own poisonous shells.

Verne's 1880 novel *Le Maison à vapeur* (The Steam House, 1880) contains a 'steam elephant', a pachyderm-shaped mechanical contrivance in which an engineer named Banks travels about northern India. This is a straight lift from American pulp-author Edward S Ellis, whose *The Steam Man of the Prairies* (1868) concerns a motile steam-engine in the shape of a giant man in the American Midwest [discussed in the next chapter]. 'Lift' is a soft-pedally way of talking about plagiarism, of course. Indeed, given the scale of Verne's financial success it can hardly be regarded as a mere bagatelle. It is, in fact, another facet of the way Verne mobilised the creative resources of his era. An anachronistic way of putting this would be to say that Verne had a canny sense of his own brand. The commodification of new ideas is integral to the way capitalism mobilises, and puts into motion, the raw materials of its time. The title of *L'Etoile du Sud* (The Southern Star, 1884) refers to a giant 243-carat diamond, apparently artificially constructed by Victor Cyprien, a French engineer working in South Africa. But although published as by Verne, this adventure-love story was in fact written by Paschal Grousset, an ex-Communard, who himself worked under the pseudonym André Laurie. Verne either appropriated the manuscript whole, or else lightly reworked it; something also possibly true of *Les Cinq cents millions de la Bégum* (which was also Grousset's idea). Later in his career, Verne's son Michel passed off his own stories under his father's name; a rather different case of publishing misdirection, since by then Verne's name was an immensely valuable property as a brand in its own right.

Robur-le-Conquérant (*Robur the Conqueror*, 1886), together with its sequel *Maître du Monde* (*Master of the World*, 1904), reworks a version of the Nemo mythos by relocating it from water to air. The first book begins, like *Vingt mille lieues*, with unexplained events happening around the world, in this case trumpets in the air and strange lights, and flags planted in impossible-to-reach locations; as in *Vingt mille lieues*, the solution to the mystery is a

technological artefact rather than any supernatural or monstrous explanation. *Robur le conquérant* continues with a lengthy debate in the 'Weldon-Institute' in Philadelphia between those who believe that the future of air travel lies with lighter-than-air craft (*aérostat*) such as balloons, and Robur himself, who scorns ballooning and insists upon heavier-than-air craft (*aéronef*). To prove his point Robur kidnaps members of the institute and takes them aboard his propeller-powered flying craft the *Albatross*. This aircraft is seemingly impregnable (its fuselage is built from paper, compressed and treated so as to make it impervious to attack—a touch at once believably counter-intuitive, and rather neatly symbolic of the true source of Verne's globe-spanning power, publishing). Robur reveals that he intends to use his literal superiority to police the world. By way of illustration he attacks and slaughters native Africans because of the supposed barbarism of their ways. The sequel, as is often the case with Verne, reconfigures the original conception quite radically. Robur returns, but as an out-and-out criminal rather than a benevolent-though-misguided Nemoesque figure. His *Albatross* is replaced with a craft called *L'Epouvante* (Terror), and the book is essentially concerned with the attempts by the authorities to track Robur down.

Sans dessus dessous (*Anti-topsy-turvy*, 1889)⁵ returns us to the Baltimore Gun Club, who had provided the ordnance to launch the moonship in *De la terre à la lune* (1865). In this novel their plan is even more ambitious, to alter the very rotation of the globe. Under the guise of 'the North Polar Practical Association' the Gun Club has been buying up worthless land in the area of the north pole. They plan to fire a shell from a very large cannon, such that the recoil jolts the Earth into a more regular rotation, ending the seasons and rendering the entire globe temperate, and thereby freeing up the land they have purchased for profitable exploitation. In other words, this is a novel that functions almost as a hypertrophic version of the Vernean fascination with mobility-in-stasis. If the Gun Club is successful then a pseudo-technical regularity and consistency will be applied on a global level. The world will still turn, and life will continue, but in a more machine-tooled and controlled manner. In the event the Gun Club's calculations are wrong; the gun is fired but the blast is insufficient, by a large measure, to effect the rotation of the world. One form of stasis (the return, at novel's end, to the status quo) replaces a more ambitious dream of stasis (the world's rotation absolutely regularised).

L'Île à hélice (*Propeller Island*, 1895) is based upon another sizeable technological premise; that of a massive artificial island designed to travel about the Pacific. But Verne does not really have a story to tell worthy of this massive construction. The narrative, which drops a group of musicians into the middle of a schematic political disagreement between the left-side and right-side occupants of the island, fails to grip. *L'Invasion de la Mer* (*The Invasion of the Sea*, 1905) details the adventures of certain French engineers, planning to create a new sea in Saharan Africa, who are attacked by the Tuareg. A number of post-humously published works were almost certainly written by Verne's son Michel (1861–1925), amongst them *La Chasse au météore* (*The Hunt for the Meteor*,

1908) and *Le Secret de Wilhelm Storitz* (*Wilhelm Storitz's Secret*, 1910). The first of these is about a meteor of solid gold hurtling towards the Earth, and the frantic hunt to reach it after it crashes in the Arctic Circle—despite the fact that, as is pointed out several times in the novel, the introduction of so much gold would cause the collapse of all the financial systems of the globe. The meteor is even addressed directly: ‘*c’est l’universel appauvrissement, la ruine générale qui s’y précipiterait avec toi!*’ [Universal impoverishment and general ruin will fall with you!]

[Verne *La Chasse*, 229]. In the event the immensely hot meteor slides into the polar ocean and is lost forever, averting the economic catastrophe (although why a Vernean supersubmarine, from some other portion of the megatextual universe of the *voyages extraordinaires*, might not be employed to recover it is not made clear). In *Le Secret de Wilhelm Storitz* (written in the 1890s, published 1910), Storitz’s secret is invisibility, and he uses it to try to prevent the marriage of a woman who had spurned him; the whole is deadeningly derivative of Wells’ invisible man. The short-story collection *Hier et demain* (*Yesterday and Tomorrow*, 1910) was also issued under Verne’s name, although many of the stories in it were partially, or perhaps wholly, written by Michel. Two stories are of some interest: ‘Au XXIXme Siecle: la Journée d’un Journaliste Américain en 2889’ [In the 29th Century: one day of an American journalist in 2889]. Another far-future tale, although a much more successful one, is ‘L’Éternel Adam [The Eternal Adam]’, sometimes known by the alternate title ‘Edom’, in which a future-human called Zartog Sofr-Aï-Sran looks back over the thousands of years of history that have led to the world spanning empire in which he lives. He discovers an ancient manuscript written in French (a language now forgotten) in which a figure from our day relates the cataclysmic flooding of the world, and the few survivors’ attempts to begin civilisation anew. After reading this story Sofr-Aï-Sran is struck with ‘*l’intime conviction de l’éternel recommencement des choses*’ [an intimate conviction of the eternal recurrence of things]. Nor is this citation of the Nietzschean philosophical concept pompous or out of place; as several critics have pointed out, this brief novella recapitulates the themes of discovery, catastrophe and circularity so central to Verne’s entire corpus. *Mobilis in mobile* is revealed as the principle by which the whole world operates, across long time. In Selenick’s well-chosen words, Verne’s ‘recurrent themes and tensions disclose a fear of the imagination’s ambivalent potential for dislocating a stable world’ [Selenick, 2]. The enormous, inventive *fort-da* game of Verne’s fiction spools out and reels in the imaginative possibilities of radical change, and radical departure. A dominant strand of 20th-century SF, either directly or indirectly influenced by him, continued to explore that same anxious ambivalence.⁶

WELLS

If, on pain of some unpleasant punishment, I were pressed to name the greatest novelist to have worked in the science fictional idiom, I would say Herbert George Wells. He innovated some new premises for SF; more often he adapted

older SF tropes; but whatever he touched became alive in a distinctly modern way with a compressed poetry, and a profound, usually intuitive understanding of the dialectic that determines the genre as a whole. In his best books he is more eloquent, thought-provoking and quietly astonishing than any other SF writer. It is hard to deny Patrick Parrinder's judgement that he is 'the pivotal figure in the evolution of scientific romance into modern science fiction. His example has done as much to shape SF as any other single literary influence' [Parrinder *Science Fiction*, 10].

One of the key factors that shaped Wells' life, and therefore his fiction, is sometimes hard to convey to those not born into the peculiar bindweed complexities of the English class system. Wells' origins were not poor, or unrespectable, but neither were they, quite, middle class. His father had been a professional cricketer (the participants of which game, sacred to some Englishmen then as now, used to be divided into amateur 'gentlemen' and professional 'players', the latter being the inferior category), and was, at the time of Wells' birth, a shopkeeper. His mother, always important in his life, was in domestic service at a large Kent stately home. Initially Wells was himself apprenticed to a local draper, but, powerfully driven, he instead maximised his academic potential, becoming a pupil-teacher at Midhurst Grammar school. From this position he was able to win a scholarship to the Normal School of Science in London, an institution without university status but with the benefit of the pedagogy of eminent biologist and Darwinist Thomas Huxley. Wells later claimed that the year he spent on Huxley's course was 'beyond all question the most educational year' of his life; 'at the end of that time I had acquired a fairly clear and complete and ordered view of the ostensibly real universe' [Wells, *Modern Utopia*, 226]. Whilst both Huxley's scientific humanism and his energetic proselytising for the theory of evolution are very evident in Wells' writing, they mediate a deeper social animus. In a meritocracy an individual of Wells' gifts would have risen easily, but Britain in the 1880s and 1890s was no meritocracy. Wells' social mobility was hard won and left him with a sense of social struggle that chimed with his understanding of Darwin's theories, and of the potential of the discourse of 'science' usefully to supersede the discourses of 'class' and 'religion'. It added to the imaginative brilliance and narrative deftness of Wells' writing a depth and sophistication of social relevance largely lacking in the more comfortably bourgeois Verne.

Wells worked as a schoolteacher, first in Wales and later in north London, marrying in 1891. He began writing scientific journalism, selling occasional articles to various journals. Some of these are speculative science in the fullest sense. 'The Man of the Year Million' (published in the *Pall Mall Gazette*, 1893) extrapolated Darwinism over the very long time scale of its title, and imagining the humans who might evolve. In 1894 he left his wife and the following year married a former student, Amy Catherine Robbins, a woman who seems to have brought order to his otherwise rather hectic life. Wells' serial infidelities did not destroy this relationship, although they do point up Wells' belief that conventional rules, and conventional morality, did not apply

to him—something that also informs his novels. There are both advantages and disadvantages in a life so lived, and in a literature created from this fundamental premise.

Wells' writing career was lengthy, and by the end he had become one of the most famous writers on the planet. Critics sometimes distinguish between his writings up to 1914, when he was producing mostly fiction, and his writings from the First World War until his death, in which journalism and non-fiction played a larger part. For our purposes, however, the turn evident in much of his (less well known) late writings towards the religious-mythical and theological fable can be thought of as merely making manifest a core dialectic present in his writing from the earliest; that between on the one hand a *scientific* and on the other a *mystical* perspective on the cosmos, which is to say, the formal and generic tension between 'realist fiction' (which Wells also wrote) and 'science fiction', two modes that exist in an unusually intimate dialectic in his work. Indeed, although Wells wrote prolifically into the 1940s, and although almost nothing he did write is wholly without interest, it was the decade from 1895 to 1905 that saw the production of almost all his most important SF. His first novel *The Time Machine* (1895) has proved one of his most enduring, although a list of his significant work over this decade is a list of SF masterpieces: *The Island of Doctor Moreau* (1896); *The Invisible Man* (1897); *The War of the Worlds* (1898); *When the Sleeper Wakes* (1899); *Anticipations* (1901); *The First Men in the Moon* (1901); *The Food of the Gods and How it came to Earth* (1904) and *A Modern Utopia* (1905).

Wells published the first version of *The Time Machine* in the small-circulation *Science School Journal* as early as 1888, under the distinctly ugly title 'The Chronic Argonauts'—a phrase that sounds not so much the name of a novel as a medical diagnosis. This narrative went through 'no fewer than seven different versions' before appearing in book form in 1895 [Hammond, 79]. The 'time traveller' (we are not vouchsafed his name) has invented a machine that enables him to move backwards or forwards in time. He travels to the year 802,701 and discovers that mankind has evolved, or 'devolved', into two separate races: the beautiful but mindless Eloi who live hedonistic lives above ground; and the savage, ugly Morlocks who live below the ground, and who (the tale reveals) come out at night to devour the Eloi. The traveller then travels even further into the future, and sees further 'devolution', with mankind becoming first rabbit-like creatures (an episode cut from the 1895 volume) and finally—in a scene of marvellously desolating vision—crab-like monsters scuttling about a terminal beach under a dying sun.

Conventional critical responses to this novella tend to see it as a meditation upon the class structure of *fin-de-siècle* Britain, or alternately (or also) as a powerfully condensed attempt to think 'long time', and particularly the implications of the Darwinian theory Wells had acquired via Huxley. The Eloi, 'those pale decadent artistic people', living in a neo-Hellenic communistic pastoral paradise above ground—the Greek plural form of their name is a giveaway here—'carry a flavour of the aesthete from the eighteen-seventies' [Aldiss,

118]. Conversely, the Morlocks are identified in the tale as the Darwinian extension of the industrial proletariat: ‘even now, does not an East-end worker live in such artificial conditions as practically to be cut off from the natural surface of the Earth?’ [Wells, 52]. These cannibalistic Morlocks eating the imbecilic if beautiful Eloi is easily read as a savage satire, or reverse-satire, on the inherent violence of class in late 19th-century Britain; but the Swiftian allegory of Morlocks and Eloi is intensified by Wells’ provision of a quasi-scientific explanation for the fantastic and extreme state of affairs. ‘The plot of *The Time Machine*’, says John Lawton, ‘is the plot of Evolution—and, as becomes slowly clear, Evolution runs backwards’ [Lawton, xxxii]. But this is not the only way to read this brilliant tale. Thinking of Wells as a philosopher, a quasi-scientist or a prophet, a point of view endorsed of course by Wells himself, can distract us from his extraordinary abilities as a writer; and I want to argue, with a claim to primacy, that this book—before it is about class, Darwinism, degeneration or prophesy—is about narrative and genre. As against critics who see the premise of the novella (a machine that can travel through time) as a means of examining evolution in action, or as a facilitator for class satire, we can read it as a Suvinian novum for narrative itself, a piece of self-reflexive textuality.

We see a consistent shape in much of his short fiction: from an ordinary contemporary environment a device, object or circumstance opens vistas to strange new worlds. In ‘The Door in the Wall’ (1906), the protagonist finds a mysterious green door that permits him to leave the grimy reality of 19th-century London and enter ‘a world with a different quality, a warmer, more penetrating and mellow light with a faint, clear gladness in its air’ [Wells, *Short Stories*, 148]. There are many subsequent stories that employ a related device. In ‘The Remarkable Case of Davidson’s Eyes’ (1895), a malfunctioning scientific experiment replaces the protagonist’s ordinary vision with vision of the exact opposite point of the globe. In ‘The Crystal Egg’ (1897) the object of the story’s title gives its possessor, a London junk-shop owner, unexpected visual access to a scene on Mars, including a Martian house and flying natives. This latter story epitomises the way this sort of tale operates. Wells draws a clear distinction between the shabby lower-middle-class existence of the shopkeeper who owns the crystal egg (Mr Cave has his shrewish wife and ungrateful children), and the fantastic, exotic world opened up by the egg itself. This contrast is integral to the functioning of the tale. As Wells said later in *Experiment in Autobiography* (1934), with reference to *The Time Machine*, ‘I had realized that the more impossible the story I had to tell, the more ordinary must be the setting’ [quoted in Lawton, xxxiv]. In ‘The Crystal Egg’ what the egg is, in fact, is science fiction itself. It is that thing that gives us fantastic, other-worldly visions. By setting seedy Seven Dials junk shop against exotic Martian palace, the story balances the genre of late-century realist fiction—of the sort that Wells also wrote but which was more strongly associated with writers such as Gissing and Bennet—with the sparkling possibilities of SF.

This speaks not only to *The Time Machine* but to all the fiction of Wells’ ‘great decade’. Instead of reading the tale as an allegorical coding of contem-

porary class circumstances, we can read it as deliberately mediating the generic representation of those circumstances (realism) and the escape from such quotidian, everyday representation (the time machine itself, or science fiction). The Time Machine is 'like' a clock, a car, a weapon and all the various things that critics have read into the tale built around it; but the Time Machine *is* a literary device. We can put this another way by remembering how the novella begins. The (unnamed) Time Traveller 'was expounding a recondite matter to us', explaining the notion of 'space time':

Any real body must have extension in four directions: it must have Length, Breadth, Thickness, and—Duration. But through a natural infirmity of the flesh ... we incline to overlook this fact. There are really four dimensions, three which we call the three planes of Space and a fourth, Time. [Wells, *Time Machine*, 10]

This fourth dimension is only invisible to us because 'our consciousness moves intermittently' along it throughout our lives. This invisibility is the one of the key themes of Wells' novel, and is underlined by the notion that the Time Traveller's machine grows literally 'invisible' when it travels. This is explained in quasi-scientific terms: 'we cannot see it ... any more than we can see the spoke of a wheel spinning, or a bullet flying through the air. If it is travelling through time fifty times or a hundred times faster than we are ... the impression it creates will be only one-fiftieth or one-hundredth of what it would make if it were not travelling in time.' [Wells, *Time Machine*, 17] At the end of the story we are demonstrated this principle in action, as the narrator glimpses the Time Machine 'ghostly, indistinct ... transparent' [90] as the Time Traveller journeys off on a new voyage. In the logic of the tale that the Time Traveller himself tells, this 'invisibility' or 'ghostly indistinctness' becomes realised as the relation between the Eloi and Morlocks, and more materially by the subterraneanly hidden Morlocks themselves.

The Island of Doctor Moreau (1896) is, in some ways, a post-Darwinian reworking of Shelley's *Frankenstein*. More than this, or related to it, it is a book about *naming*. Names are human, after all. Animals do without them, and Frankenstein's monster is nameless, but we humans like to name ourselves and the world all around us, and moreover like to string together elaborate webs and skeins of names into—for instance—novels. In writing a novel about the proximity of humanity and animality, Wells had something on his mind, a Darwinian something. Before Darwin humans had believed themselves unique, god-made, fundamentally different to animals. Darwin said not so. Humans are merely animals mutated by evolution. *The Island of Doctor Moreau* is the first great novel of that revolution in thought, written three decades after the appearance of the *Origin of Species* because that's how long it took for Darwin's shattering idea to filter through properly into popular-culture.

A well-bred Englishman, Edward Pendrick, becomes marooned upon a Pacific island inhabited only by the vivisectionist Dr Moreau, his assistant Montgomery and the various half-men Moreau has fashioned by surgical and

other interventions into animal life—surgery undertaken without the benefit of anaesthesia. These beast-beings have developed a rudimentary religion, with Moreau himself as a combined God of Mercy and Pain (*‘His is the Hand that wounds,’* is their chant, *‘His is the Hand that heals’*). The novel’s scientific Eden also includes a version of the biblical command not to eat from the ‘Tree of the Knowledge of Good and Evil’: Moreau has ordered his beast-men not to taste blood. This command is, of course, transgressed, and the creatures revert to their bestial origins. Wells later cheerily called the book ‘an exercise in youthful blasphemy’ and ‘theological grotesque’ [Kemp, 211].

Less than halfway through his story the narrator suddenly exclaims: “‘Moreau!’ said I. ‘I know that name’.” What can we know of this name? Well, *moreau* in French means brown-skinned (like a Moor), and whilst the Moreau Wells portrays is exaggeratedly white, with a long white beard (a parody God the Father), he is also the novel’s locus for its anxieties about race, miscegenation and pollution—very much part of the cultural context of imperial Britain in the 1890s. Critics have suggested that the first syllable of Moreau’s name hints at mors, *morte*, death; just as the second (*eau* means water) points to his islander isolation, or perhaps the fluidity with which he treats flesh. It has always seemed to me that Moreau is an extended, or crumbling-at-the-edges, version of the name More, the man who wrote the world’s first Utopia, another fable set upon a distant island where human nature was reworked and refined. Moreau’s island is named Noble’s Island on the map, a name which gestures ironically at nobility whilst also including an echo of More’s original tale in its first syllable. More’s utopia as *no*-place leads to Wells’ *no*-bles, a place distinctly unblest, twisting More’s happy utopian paradigm into monstrous, dystopian shapes.

The Island of Doctor Moreau is a novel whose symbolic meanings are so richly layered that, as with this brief note on its naming, it is easy to get carried away. Margaret Atwood once wrote a brief introduction to the novel in which she offered, in quick succession, *Moreau* as ten different readings: evolutionary thought experiment; as 1890s imperial adventure yarn; as scientific romance; as a rewriting of *The Tempest*; or the Bible or Coleridge’s *Rime of the Ancient Mariner*. There’s fun to be had in such ludic hermeneutics, although I can’t help wondering if such prodigality of interpretation rather misses the point of Wells’ novel. Because, actually, *The Island of Doctor Moreau* is simple. Its brute clarity is one reason for its enduring appeal. It is simple because animals are simple, relatively speaking. We keep pets, and some people prefer pets to people, because pets give us crucial things—companionship, loyalty, love—without all the complications entailed by adult human relationships.

The simplicity of animals is not an innocence, of course; it would be naïve of us to think so. And Wells is superb on the ramifications of this simplicity, not only its potential for violence—its, to use a loaded term, *barbarism*—but also its eerie glamour, compounded of charm and strangeness. All genuinely simple beings partake of this glamour, I think, because the intrinsic richness and complexity of human existence throws the truly simple into a stark, lovely,

but inhuman, contrast. Hence, for example, the elvish quality of the first dog-, puma-, pig- and monkey-men Prendrick encounters: 'they wore turbans too, and thereunder peered out their elfin faces at me, faces with protruding lower jaws and bright eyes' [Wells, *Island*, 32]. Hence, too, the faerie 'pointed ears and luminous eyes' of Montgomery's assistant.

Freud mapped this territory expertly in his *Civilisation and its Discontents* (1930), but Wells got there first. *The Island of Doctor Moreau* understands completely that violence is simple where civilisation (negotiation, compromise, repression) is complicated. Moreau holds his beast men in check with a Law that is a nominalisation of Pain, his medium for creating them; a simple, if precarious, strategy. The trace of the novel is the disintegration or degeneration of this imposed structure. If we think about it for a moment, the pain Moreau inflicts upon his creatures ought to bother us a great deal. I don't mean in an ethical sense (of course that!) but *practically* speaking. Why does he not use anaesthetics? The tale is set in 1887. Ether and chloroform had been widely used in surgery since the 1840s. But no, Moreau refuses to anaesthetise his victims because pain is as much a part of his surgical tool-kit as blades or suture-thread. In his own terrifying words: 'each time I dip a living creature into the bath of burning pain, I say: this time I will burn out all the animal, this time I will make a rational creature' [Wells, *Moreau*, 106]. There's a name for this, sadism. One of the things Wells is doing in this novel is dramatising a sort of apotheosis of sadism. Pain as a metaphysical horizon of being.

At the same time, there's much more in this novel than can be covered by the description, sadism. Prendrick asks Moreau why 'he has taken the human form as his model'. 'There seemed to me then,' he adds, 'and seems to me now, a strange wickedness in that choice.' Moreau's answer ('he had chosen that form by chance') is very evidently not the truth of the matter. Prendrick perhaps takes the 'strange wickedness' that makes him queasy to be blasphemy, but I think the novel is saying something else, leading us towards a rather different sort of name, love. *The Island of Doctor Moreau* is populated with variform Moreauian beast-men, but there is only one female in the novel, painstakingly (literally) created out of an altered puma. Several critics have noticed a sexual sub-text here; Wells, sexually promiscuous all his life, adopted the pet-name Jaguar when he was with his lover Rebecca West, just as she was Panther. It certainly looks as though Moreau is in the business of making a mate for himself. But this is also his downfall. Though it is the taste for blood that encourages the beast-men to revolt, it is the escape of the puma-woman that spells Moreau's individual doom. It is quite appropriate to Wells' fable that unleashed female potency is the force to destroy Moreau's garden Eden. The novel is saying: beasts are simple and pain is simple. But it is also saying: love is not simple—and it is love that collapses Moreau's brutal idyll. This fate is buried in the man's name too, as if Wells has excavated Moreau's name from the Tarot card that could predict his doom, LAMOUREAUX, the lovers.

The War of the Worlds (1896) is so powerfully written a novel, so current in contemporary culture (it has been adapted for radio, TV and film scores of

times) that we forget how crowded a sub-genre of late 19th-century SF the paranoid 'future invasion of Britain' story was (discussed in the previous chapter). Wells' novel owes much to the sub-genre set in place by Chesney's *Battle of Dorking*, although it expands upon its premise in significant ways. As is usual for those stories, the narrative centres on the life of an ordinary Englishman, and then dramatises the extraordinary erupting into it. Instead of Germans it is aliens that invade. A giant metal cylinder crash-lands near Woking; tentacled Martians climb out of it to make war upon humanity from towering mechanical tripods, laying waste to South East England before eventually succumbing to Earthly bacteria against which (we are told) they have no natural defence.

Wells' Martians are imagined according to the scientific orthodoxy of the time. Bright lights had recently been observed telescopically upon that ancient world: could they be signs of communication, or even the launching of projectiles into space?⁷ Mars was believed to be a much older world than Earth. Wells' Martians, planning to acquire Earth's real-estate because their own world is dying, are hyperevolved. Wells tells us that they 'were heads, merely heads. Entrails had they none.' [Wells, *War*, 119] Rather than digest their food they ingest the blood of their prey directly into their own circulatory systems. Their life is governed by a superior and rather cruel rationalism, at the same time they are monstrous to Earthly eyes:

Those who have never seen a living Martian can scarcely imagine the strange horror of their appearance. The peculiar V-shaped mouth with its pointed upper lip, the absence of brow ridges, the absence of a chin beneath the wedge-like lower lip, the incessant quivering of this mouth, the Gorgon groups of tentacles. [Wells, *War*, 19]

This vividly visualised icon of monstrous and horrific alien-ness is what the other now-forgotten invasion fantasies from this period lacked, and it is key to the cultural endurance of *The War of the Worlds*.

Throughout the novel, indeed, Wells displays extraordinary control and expressiveness in his writing. Few writers in any genre can match the desolate beauty he evokes in a London emptied by the Martian threat and overrun with the red weed they have brought across space. At this point in the book the last Martian is ceasing its weird cry and dying.

Abruptly as I crossed the bridge, the sound of 'Ulla, ulla, ulla, ulla' ceased. It was, as it were, cut off. The silence came like a thunder-clap.

The dusky houses about me stood faint and tall and dim; the trees towards the park were growing black. All about me the red weed clambered among the ruins, writhing to get above me in the dimness. Night, the mother of fear and mystery, was coming upon me. But while that voice sounded the solitude, the desolation, had been endurable; by virtue of it, London had still seemed alive, and the sense of life about me had upheld me. Then suddenly a change, the passing of something—I knew not what—and then a stillness that could be felt. [Wells, *War*, 159]

This pseudo-Arabic cry of ‘ulla, ulla’, with its echoes of ‘Allah’, is an interestingly suggestive touch (it has always struck me as a kind of sound it would be extremely hard to make with a beak-shaped mouth). *The War of the Worlds*, like the other invasion-fantasy books of the 1880s and 1890s, captures a fundamentally xenophobic fear of foreign-ness. Are the Martians merely ciphers for racial and national otherness? Darko Suvin thinks so:

The Martians from *The War of the Worlds* are described in Goebbelsian terms of repugnantly slimy and horrible ‘racial’ otherness and given the sole function of bloodthirsty predators (a function that fuses genocidal fire-power—itsself described as an echo of the treatment meted out by the imperialist powers to colonized peoples—with the bloodsucking vampirism of horror fantasies). [Suvin 1979: 78]

Wells’ novel symbolically distilled the concerns of its age. His Martians are, of course, imperialists, using their superior technology to invade a nation (England) which had been accumulating its own Empire throughout the century, largely because of a superior technological sophistication. In other words, the arrival of the Martians and their mechanised brutalities are the symbolic forms Wells chose to explore a deeper set of concerns about the violence of Empire-building, and about the anxieties of otherness and the encounter with otherness that Empire imposes on the Imperial peoples. But it misses the power of this book to reduce it to a political message, as this sort of analysis tends to do. What works so well in this absolutely gripping book is the minuteness of Wells’ grasp upon the detail of his imagined drama.

There are many features of this novel that look, in hindsight, extraordinarily prescient—not prophesy (many of Wells’ imagined futures get core things quite wrong) so much as a Jamesonian future dialectical antithesis working upon the historical and contemporary theses with which Wells engaged to produce a synthesis of both. The alien’s heat-ray anticipates laser technology; the lethal black smoke they use looks forward to the use of mustard gas in World War I. Most insightful of all is the twist at the novel’s end. He writes an inverted fable of Western colonial aggression that is defeated not by military force but by microbes. It was not until many decades later that historians of the European empires made plain the extent to which it was precisely such agents that made colonisation possible in the first place. Jared Diamond’s study *Guns, Germs and Steel* (1997) brilliantly explores the way it was European resistance to certain diseases, and the lack of those same microbes in the rest of the world, that laid the grounds for Europe to conquer America and Africa rather than, as might have happened, the other way around. Wells was the prophet of social as well as individual hygiene, a writer who rarely hides his contempt for bumbling, decadent, sniffing humanity. When he tells us in this novel that ‘Martian sanitary science eliminated illness ages ago. A hundred diseases, all the contagions and fevers of human life, consumption, cancers, tumours and such morbidities, never enter into the scheme of their life’ [Wells, *War*, 131], we might think

his tone one of admiration. But the end of *The War of the Worlds* makes plain that too ruthless a pursuit of social cleanliness is a weakening rather than a strengthening thing. Disease, like empire, is a more complex matter than that, and Wells' genius in his fiction (if, perhaps, not in his non-fiction) was always with the messy complexities rather than the clean simplicities.

These Martians travel between worlds in a cylinder fired out of an enormous cannon, a Wellsian nod towards Verne's *De la terre à la lune*. The impracticability of such extreme acceleration would be, if anything, much more debilitating for the soft-bodied Martian beings; and Wells never again proposed launching spacecraft by such a means in his fiction—*First Men in the Moon* (1901), for instance, posits a craft powered by antigravity. But as with Verne the answer is to understand that *The War of the Worlds* is as much metaphorical fiction as rational extrapolation, and that the many touches of carefully observed verisimilitude in the novel reinforce rather than contradict this metaphoricity. Big guns are explosive. Big guns are the technology of big war, and war, bigger even than the one Lieutenant-Colonel Chesney foretold, was the coming thing. We can, in other words, take seriously the 'war' in Wells' title. It's yet another way in which he was surprisingly prescient, treating war not as warriors meeting on a battlefield, but as massed tides of refugees, as civilians terrorised and massacred, living under bombardment and gas-attack. The final chapter of the novel's first book (16: 'The Exodus from London') is not only one of the first but also one of the most powerful representations in fiction of the way war would come to figure in the 20th century; huge crowds of non-belligerents flooding away from the fighting in fear of their lives. War in *The War of the Worlds* is no longer a horizontal interaction between two armies. It now has a terrible vertical vector—something the 20th-century world would come to know only too bitterly—from shells and bombs to V2s, cruise missiles and drones plummeting down from on high. When the narrator says 'suddenly, like a thing falling upon me from without, came fear' [Wells, *War*, 24], he is describing the Martians' externalisations of a state of mind. Indeed that, in a crucial sense, is what *The War of the Worlds* is about (Fig. 8.3).

One of the most powerful portions of this short novel is its subtle and allusive representation of post-invasion England. From the hints Wells drops, we can intuit a Britain profoundly changed. Some of these changes are obvious: the red weed the invaders brought with them from Mars; the 'almost complete specimen' of a dead Martian 'in spirits in the Natural History Museum'. More haunting, though, are the artful throwaway references in the novel's early chapters:

I was at home at that hour and writing in my study; and although my French windows face towards Ottershaw and the blind was up (for I loved in those days to look up at the night sky), I saw nothing of it. [Wells, *War*, 10]

'In those days ...', presumably, as at the point of writing this narrative, *those days* are lost past, the night sky now a venue of fear instead of wonder. A few



Fig. 8.3 Martian tripods attack an English village: illustration from the serial publication of Wells' *War of the Worlds* in *Pearson's Magazine* (May–Dec 1897)

pages later the narrator notes that 'few of the common people in England had anything but the vaguest astronomical ideas in those days'; *in those days* again, pointing to a now in which everybody knows about the solar system and the dangers it poses. Most strikingly of all, it seems to me, is a sentence towards the end of the opening chapter: 'People in these latter times scarcely realize the abundance and enterprise of our 19th-century papers.' It's never been clear to me why the aftermath of the Martian invasion should have so reduced the provision of news. Perhaps the implication is that a shattered infrastructure cannot support such things? But I read a different significance into this

reference; that the disasters have cured humanity of its passion for news. The news is a way in which we tell stories about ourselves to ourselves, and one of the more radical things about *The War of the Worlds* is, paradoxically enough, its suspicion of storytelling. Wells' narrator falls in with a curate, whose narrative of the invasion (that the Martians are agents of God's judgement against a sinful world) is shown to be inadequate to events. Later he meets an artilleryman who spins a utopian future narrative with humanity creating a new high-tech subterranean civilisation. But he is shown to be an ineffectual dreamer, his storytelling irrelevant to the grim reality. The irony of this repeated device is that *The War of the Worlds* is, of course, a story, a narrative we are invited to distrust. The narrator more or less says so:

Perhaps I am a man of exceptional moods. I do not know how far my experience is common. At times I suffer from the strangest sense of detachment from myself and the world about me. [Wells, *War*, 30]

The narrator's quixotic mood is integral to the story: sometimes he is rationally dedicated to self-preservation; at other times strangely suicidal moods overcome him ('an insane resolve possessed me. I would die and end it'); sometimes he travels over the landscape of the novel with purpose—to investigate the cylinder, to find his wife; at other times he moves passively, or even randomly. He is enough of an everyman to convey Wells' point that the human species is inconstant, passive and easily overcome.

The Invisible Man (1897) is a simple and briefly realised story. The scientist Griffin, an antisocial and (by the story's end) effectively sociopathic individual, invents a means of rendering himself invisible, but is unable to reverse the treatment. He arrives in an English village swathed about with clothes and bandages to disguise his condition, and tries from his inn room to further his researches. But the natives are understandably suspicious of him, and become more so after a series of inexplicable thefts and other events. Unclothed, the invisible man reveals megalomaniac desires, and is eventually hunted down and killed, whereupon he becomes visible again. It is a book, of course, 'about' seeing; but it is not a coincidence that the invisible man himself is a scientist. Invisibility, the novella suggests, removes a man from social interaction and therefore from social responsibility, with malign consequences. As the *Time Machine* overwrote its antecedents and became the template for all future time travel SF, as *War of the Worlds* became the template text for alien invasion, and as *The Island of Doctor Moreau* still haunts the collective imaginary on the boundaries between beasts and humans, so *The Invisible Man* is the prototype for a great flood of subsequent invisibility stories. Very often filmed, adapted and retold Wells pseudo-scientific idiom reconceives an ancient myth for the modern age. That myth is the story of 'The Ring of Gyges', which is very ancient, almost certainly older than its first recorded appearance in Plato's *Republic* (380 BC). There was once, the story goes, a humble shepherd in the ancient kingdom of Lydia (modern day Turkey). This shepherd, Gyges by name, chanced upon

a cave newly revealed by an earthquake, inside of which was a splendid tomb containing the body of a man. This corpse was wearing a golden ring, which Gyges discovered had the magical power of rendering him invisible. The sequel of these events sees Gyges using his new-found power of invisibility to infiltrate the Court of Candaules, the Lydian king, seduce Candaules' queen, kill Candaules and seize the throne for himself.

Plato quotes this story to make a point about ethics. We act in morally virtuous ways, Plato argues, only because we do not wish to face the disapproval and punishment of our fellow men; virtue is a purely social construction. If we were sure we would never be found out we would act in a morally disinhibited manner—theft, murder, betrayal. Virtue, in other words, consists in *being seen*.

We know that H G Wells read, and was inspired, by Plato. In his *Experiment in Autobiography* Wells describes Plato's influence upon him as 'like the hand of a strong brother taking hold of me and raising me up'. *The Invisible Man* (1897) is a modern retelling of Plato's ancient fable, replacing the magic of the ring with the new logic of science. But the moral force of the tale is similar. As the old sailor, reading a newspaper account of the invisible man in chapter 14, notes 'Suppose he wants to rob—who can prevent him? He can trespass, he can burgle, he could walk through a cordon of policemen as easy as me or you could give the slip to a blind man!' Of course, Wells' scientist, like Gyges, has larger ambitions than mere theft. He explains to Kemp in chapter 24 that he plans to use murder as a path to power: 'Not wanton killing, but a judicious slaying ... A Reign of Terror.' The population of Port Burdock must be terrorised into obedience. He informs the town of his plans:

Port Burdock is no longer under the Queen, tell your Colonel of Police, and the rest of them; it is under me—the Terror! This is day one of year one of the new epoch,—the Epoch of the Invisible Man. I am Invisible Man the First.

This, however, is 'The Plan That Failed'—the grand, Gyges-like ambition announced in Griffin's proclamation comes to nothing. Griffin's problem is not ambition, or ruthlessness, but a more human level of incompetence, aggravated by the practical problems of his invisibility. This is where Wells' vision parts company with Plato. Not the generalised moral, but the specific frustrations and friction of everyday life. Not the royal usurper, but the petty man. For Wells, even the most startling developments in science cannot change the fact that we do not float magically free of quotidian distractions and awkwardnesses of ordinary life. Men are not kings. In this sense, not even kings are kings.

Invisibility gives Griffin Gyges-like advantages over ordinary, visible humanity; but these advantages are bought at a price. The man is invisible, but his clothes are not—so Griffin must go naked, whatever the weather or temperature, if he wishes to remain unobserved. Neither can he eat ("Bear in mind," said Kemp, "his food shows. After eating, his food shows until it is assimilated. So that he has to hide after eating"), nor disguise his smell from

bloodhounds. Wells' satire on the grand, and wicked, far-seeing vision of the scientist in this novel turns, as it always does in Wells' fiction, into a meditation upon the way scientific advance precisely does *not* vault over the practical problems of ordinary life.

There is, as many critics have noted, one flaw in the Wells' quasi-scientific extrapolation of Griffins' invisibility. Wells' invisible man ought to be blind of course (an invisible retina stops no photons). Wells knew this fact but chose to ignore it, as have the many writers and filmmakers of the 20th and 21st centuries who have followed Wells' lead in making stories about invisible men, women and hobbits. Or perhaps it would be better to say, Wells doesn't so much ignore the question of Griffin's blindness as transfer it from a physical to an ethical realm. As a portrait of a scientist (irascible, egotistical, at once petty-minded and grandiose) Griffin is not designed to flatter the profession, but this is a specific rather than a general point. Griffin is blind; he's just not physically blind. Glorifying in his invisibility he sees himself as tyrant of the world; he is blind to the practical obstacles that will prevent that eventuality. Since *Frankenstein*, SF has been fascinated by the unintended consequences of scientific or technological advances; and unintended consequence is just another way of saying the invisible future. And insofar as the future is the realm of science fiction, this novel is saying SF is blind.

Anthony West (Wells' son) wrote that though the novel starts as little more than an ingenious conceit, it grows in stature as it develops, rising in its later sections into something especially powerful. 'My father is moving on from pretence—the simulated reporting of what has happened and cannot happen in the nature of things—to something more genuinely creative. He is no longer having his reader on, but is making him a consenting partner in his imagining'. But West adds:

He cannot, however, keep this up through the book, which before long falls foul of the fundamental flaw that G K Chesterton was quick to point out soon after its original publication. The title proves to be misleading: the story does not deal with an invisible man's interaction with the world we know, but with what befalls an invisible madman, a person impenetrably concealed within his own special frame of private references, resentments, obsessions, and compulsions, and altogether set apart from the generality of mankind. [West, 234]

This, though, is hardly fair. More importantly, it rather misses the point of the novel. For one thing, to talk about an individual caught up in 'private references, resentments, obsessions, and compulsions' is to describe every example of *homo sapiens* in the world today—West says that Griffin is 'a person impenetrably concealed' in those things, but it is part of the existential resonance of Wells' brilliant conceit to dramatise precisely this sense—that, since we are not telepaths, we *are* all concealed from one another. It is a person's outer habiliments only that can be 'read', like the clothes the invisible man wears when he arrives at the inn at the beginning of the story.

This is a text, in other words, about the dangers of the invisible (the mystic, the unknown) as opposed to the known, the technical, the machinic—which is why the apparatus Griffin used to render himself invisible neither appears in the book nor is described. It is also a fantasia upon the formal conventions of narration itself; the unseen omniscient narrator who can travel, unnoticed by the characters in the novel and yet privy to their most private actions and even thoughts. As with all of Wells' best books it folds political, cultural, formal and speculative into one, perfectly controlled, textual whole.

We can go further and note that Wells uses his imagined invisibility to upend our, as well as Griffins', expectations. Compare the quasi-scientific literalism of Wells' fable with the approach taken, for example, by Ralph Ellison in his powerful 1952 novel *Invisible Man*, or Christopher Priest in his later *The Glamour* (1984). Both of those novels concern invisible characters, but in both instances they are invisible only in the sense that people somehow don't notice them. Otherwise their flesh is as good at stopping photons as yours or mine. The contrast with Wells' Griffin is instructive. Science (or pseudo-science) has made him literally invisible. But *because of*, rather than despite, this fact *people notice him all the time*. His Gyges ambition compels him to meddle with the world, to disturb people and roil up the town, and this makes him the centre of attention. This is the beautifully expressive irony at the heart of Wells' fable. It turns out we cannot simply slip away from the world.

The Invisible Man is, arguably, the last of Wells' books to have retained widespread cultural currency (which is to say, the last of the books likely to be recognised by ordinary people today, and the last to have been adapted into many other idioms and modes). Although he went on to write a great many more books, including some masterpieces, and although he was to become in his own lifetime enormously famous, posterity has been much more selective than were his contemporaries. In part this is because Wells himself began, at around the turn of the century, to conceive of his vocation as a writer in a different manner.

When the Sleeper Wakes (1899; Wells extensively rewrote this work for its 1910 second edition) is another parodically religious book, although this fact is well disguised. Graham, an ordinary 19th-century Englishman, falls into a coma and awakens in the future to discover that the mysterious actions of compound interest on his savings have made him Master of the World, with a group of twelve trustees in his name (individuals who are, of course, greatly incommoded by his revival, despite their protestations of delight). The megapolis that London has become, and the political machinations that threaten Graham's life, are the entertaining subject of the book, but, as Peter Kemp notes, it may be the 'religious burlesque' of this fable about 'a miraculous resurrection' that is its heart ('Graham, Master of the World, finds his interests being administered by dubious disciples, the Twelve Trustees, and ... speech sometimes becomes a sort of tongue-in-cheek plainchant, "Verily it is the Sleeper"', Kemp, 211).

The First Men in the Moon (1901) takes the familiar late-19th-century tropes of an antigravitational metal (Wells calls his Cavorite) and the lunar *voyage*

extraordinaire as the framework for a readable, if not especially striking, adventure. Two earthmen inadvertently shift themselves to the Moon, where they run around a great deal to escape from the insectoid Selenites. *Anticipations* (1901), a work of serious extrapolation rather than of fiction, enjoyed considerable success in its day, and is still of great interest in its sober-headed attempt to think through how the future might actually be. But in one sense it represents a deleterious development in Wells' career. The reader working his or her way chronologically through Wells' output begins to notice a dichotomy, sometimes rather poorly disguised, between the specifically dramatic conception prominent in the earlier books, and the specifically generalising, panoramic ambition of an *Anticipations*-inspired approach. Indeed, a footnote on the first page of *Anticipations* identifies fictive detail and definiteness (the facilitator of some of Wells' finest effects) *as a problem* that, the implication is, Wells hopes to overcome:

Fiction is necessarily concrete and definite; it permits of no open alternatives; its aim of illusion prevents a proper amplitude of demonstration ... the very form of fiction carries with it something of disavowal; indeed, very much of the Fiction of the Future pretty frankly abandons the prophetic altogether, and becomes polemical, cautionary, or idealistic; and a mere footnote and commentary to our present discontents. [Wells, *Anticipations*, 1–2]

We are entitled to ask: how could a fictional genius like Wells get it so very wrong? The answer may be that later Wells became increasingly possessed by what seemed to him the sheer obviousness of his own ideological and practical premises. There was one last science fictional masterpiece in him, and it escapes the blight of preachiness by being actually about this very obviousness. It is *The Food of the Gods and How It Came to Earth* (1904). Though treated by some critics as minor Wells, this novel has always seemed to me to rank with the very best of his writing. Bensington and Redwood, Wells' existentially myopic scientists, create Herakleophobia, or boomfood, a dietary stimulant that provokes gigantism in the creatures that eat it. The substance escapes into the environment, and the south-east of England is plagued by waves of giant vegetation, wasps, rats and other beasts, including, eventually, giant human beings. Wells' account of these events perhaps lacks some of the narrative drive and plangent, tragically tinged seriousness of *War of the Worlds* or *The Time Machine*. But it contains a superb central conceit, some gripping set-pieces and, most of all, it has the memorable and eloquent imagination-haunting quality of the best SF.

Of course, Wells was not the first writer to cover this topic. Giants have been part of fairy tales for millennia; the giants Jonathan Swift's Gulliver's meets, and the giant he becomes, are discussed above; we should also mention Lewis Carroll's *Alice in Wonderland* (1865). These are two great fantasy novels with which *Food of the Gods* is in obvious dialogue. But Wells is doing something new. Swift's aim was, broadly, satirical; and his Brobdingnagian giants and Lilliputian miniatures are in part about dramatising a sense of proportion,

man's proper place in the cosmos. Alice eats a prototype boomfood (her magical mushroom) and grows prodigiously, thereby giving Carroll, appropriately for a masterpiece of children's literature, a metaphor for childhood—that time of life when we literally experience abrupt shootings-up in height. But Wells is doing something else with his central metaphor, besides (that is) using it as a platform for both exciting action and social comedy.

To put it more precisely, Wells' novel does something neither Swift nor Carroll manage, it follows systematically through on its concept. Swift's giants simply *are*, a fixed part of his imagined global landscape. Carroll's Alice experiences childhood's shifts in scale, but she herself doesn't grow up—who would want to leave so wonderful a land as hers behind anyway? But growing up is precisely the theme of *The Food of the Gods*, not just in the individual sense, but in the larger, social sense that Wells anticipated the coming of a proper maturity of humanity. The young giants at the novel's end are one version of his 'coming race', a frequent feature of his speculative writing; the Samurai or *Übermenschen* who, he hoped, would move mankind as a species out of its bickering infant stage into the broad sunlit uplands of his imagined utopian future. To put it another way: if the Alice books are about the childhood of one girl, then Wells' novel is about the childhood of society as a whole.

The novel articulates a whole world's transition from small to big, from triviality to greatness. The first portion accordingly not only fills us in on Wells' pseudo-scientific 'food', it also paints a portrait of society as bumbling, incompetent and immature. The *littleness* of this vision of England parlays naturally into comedy. Even the more able of Wells' adults engage in childish knockabout—clambering down holes, falling into ponds; and his scientists are as messy with their boomfood as any toddler. At the beginning there don't seem to be any properly constituted authorities, nobody to take charge of the increasingly alarming situation. Even when government gets involved, later on, it takes the form of the pettiness of Caterham, a kind of pigmy demagogue. By contrast, Wells draws the young human giants with a great deal of dignity, and even (by the end) a tonal grandeur compatible with their physical dimensions. Their stature is greater than ours in more than simply physical terms.

The crucial thing about these giants is that they are the future. Here's Redwood, at the end, watching his giant son and their giant comrades preparing for war: 'the two giants who were working in the corner began a rhythmic hammering that made a mighty music to the scene ... about him were the young giants, huge and beautiful, glittering in their mail.' By this stage, this Wagnerian tone has entirely replaced the drollery of the earlier sections:

The voice of the giant children spoke to one another, an undertone to that clangorous melody of the smiths. His tide of doubt ebbed. He heard the giant voices, he heard their movements about him still. It was real, more surely it was real—as real as spiteful acts! More real, for these great things, it may be, are the coming things, and the littleness, bestiality, and infirmity of men are the things that go. [Wells, *Food*, 208]

This encapsulates the moral of the book; and this is why Wells chooses to tell this story via giants. It is not just that their great size correlates to the greatness he anticipates as replacing humanity's littleness, bestiality, and infirmity—although, obviously, it does. But it is something more. Wells' giants are *unmissable*. They are the very obviousness of the positions that seemed to Wells himself perfectly clear and inevitable, despite the fact that most of his contemporaries couldn't see them: the passing away of the petty old world; and the coming of new greatness. This is why his giants, unschooled outsiders though they be, light, as it were, naturally upon progressive ideological positions identical with Wells' own: young giant Caddles asking with seeming ingenuity why the idle rich have all the money and the poor have to do all the work, for instance; or young Redwood and the giant princess together repudiating (as Wells himself did, in his own life) the restrictions of Edwardian conventional sexual morality. His giants are the enormous truth of things that little people contrive, somehow, to overlook; they are, to employ a cliché, the elephant in the room. They, like the novel in which they appear, are not to be missed.

Later Wells novels are less fortuitously worked as far as this theme is concerned. *In the Days of the Comet* (1906) tells (like Poe's 1839 'The Conversation of Eiros and Charmion') of how the world passes through the tail of a comet; but where Poe's story treats this as the end of the world, Wells' 'green vapours' have so beneficial an effect upon the population as to turn the Earth into a utopia. Like *The Food of the Gods*, though to more unequal effect, this book falls into two portions. The first part of the book is a brilliantly claustrophobic evocation of lower-middle-class life; gripping and vivid, it delineates with a horrible sense of inevitability the descent of its thwarted narrator into sexual jealousy and murderous rage. But the latter portion of the book replaces this particularity with a belief in panorama as an aesthetic virtue in itself. This is what the fatal success of *Anticipations*, Wells' first panoramic work, did to his writerly vision. The reformed world of *In the Days of the Comet* is interesting but distant. It is not merely that this is a particularly unbelievable utopia (it does follow, at least, logically from its premise) but rather that it is insufficiently particularised. Something similar is true of *The War in the Air* (1908), a book which extrapolates the then nascent technologies of flight (Bleriot's first flight across the English channel did not take place until 1909). Bert Smallways, a Wellsian lower-middle-class 'little man' hero, is caught up in the events of global war fought in the skies. The book ends pessimistically—this devastating new form of war brings worldwide disaster ('everywhere there are ruins and unburied dead, and shrunk, yellow-faced survivors in a mortal apathy ... it is a universal dissolution', Wells *War in Air*, 201)—but it is hard to care for this slightly abstract apocalypse—an odd observation to make about a writer who could (in *Time Machine*) capture an almost inexpressibly plangent sadness simply by situating a lone man on a beachful of crab-like creatures.

The early 1900s was marking a point of transition in Wells' world view, and therefore in the type and variety of work he published. In the words of Patrick Parrinder:

The calculations of planetary cooling reflected in both *The Time Machine* and *The War of the Worlds* [lost] their sway over contemporary scientific opinion. In *The Interpretation of Radium* (1908)—the book which led Wells to envisage the possibility of atomic warfare—Frederick Soddy wrote that 'our outlook on the physical universe has been permanently altered. We are no longer inhabitants of a universe slowly dying from the physical exhaustion of its energy, but of a universe which has in the internal energy of its material components the means to rejuvenate itself perennially over immense periods of time.' Wells [switched] shortly before the First World War from entropic pessimism to a position much closer to Soddy's thermonuclear optimism. [Parrinder, *Shadows*, 46–7]

The first manifestation of this change in outlook was, perhaps counter-intuitively, a gap of five years in which Wells published almost no science fiction at all. Instead he produced a series of mainstream novels. He himself thought this most important work; a judgement in which some, though not all, critics (and not this critic) concur. Radioactive matter appears, as the noisome but valuable 'quap', in *Tono-Bungay* (1909): a story rooted in semi-autobiography in which the Wells-like George Ponderevo escapes from the confining class into which he is born, and together with his Dickensian Uncle makes a fortune by means of the quack-remedy of the novel's title, afterwards losing all his money. Sending a boat to harvest the quap becomes a desperate strategy to stave off fiduciary disaster (which fails). Indeed the idea of 'radioactivity' in the novel stresses its pathological propensities; the ship bringing the stuff to England decays and collapses during its voyage.

Other novels anatomised and challenged the mores of Edwardian England. The representation of a sexually self-confident woman in *Ann Veronica* (1909) caused a scandal in its day, but has aged badly. The comedy of *The History of Mr Polly* (1910) is charming, although there is perhaps something condescending about the portrait of the hapless lower-middle-class hero. *The New Machiavelli* (1911) a novel about a politician whose career is ruined by a love affair, is so precisely located in the London political scene of the early 1900s that the loss of that topicality is fatal to its novelistic potency. Like *Marriage* (1912), a novel about an unhappily married couple, these books all stay close to the contours of Wells' own life. But the outbreak of the First World War in 1914 seemed to regalanise Wells' interest in SF. Although he continued writing a string of mainstream novels, he also produced his second great spread of SF works.

The World Set Free (1914) is another tale of future-war, looking back from the perspective of 1970 on the world war of 1956. Atomic weapons bring enormous devastation, but in contrast to *The War in the Air* ultimate catastrophe is averted by the intervention of an elite of far-seeing politicians, lead by 'God's Englishman' King Egbert. As J R Hammond points out, the notion that only rule by an oligarchy of brilliant men, scientists and philosopher-kings, could ensure mankind's future became an *idée* increasingly *fixe* for Wells in his later life: 'again and again in his writings we find this emphasis on a world renaissance brought to fruition by and through an elite; in the New Republicans of

Anticipations, the Samurai of *A Modern Utopia*, the Open Conspirators of *The World of William Clissold* and the “Modern State” movement of *The World Set Free* and *The Shape of Things to Come*’ [Hammond, 110]. Wells was by no means alone in this belief in the early years of the 20th century; indeed, many of the people who believed this converted to fascism in the Europe of the 1930s. It would not be quite right to call Wells a fascist, although many commentators find his sympathy for a quasi-Nietzschean supreme elite, along with his advocacy of eugenicist theories, repellent.

But, perhaps by instinct, Wells had lighted upon a genuinely 20th-century scientific idiom. Just a few years earlier, the chemical rationale of global change in *In The Days of the Comet* is implausible, even by the standards of 1906 (the comet reacts with ‘the nitrogen in the air ... [which] in the twinkling of an eye was changed out of itself, and in an hour or so became a respirable gas, differing indeed from oxygen, but helping and sustaining in its action’, Wells, *Days of the Comet*, 172). By 1914, with *The World Set Free*, this naïve ‘chemical’ understanding has been replaced by a more contemporary ‘atomic’ one.

Many of Wells’ later books rehearse authoritarian if anti-establishment views. In *Men Like Gods* (1923) travellers pass through a ‘kink in space’ into an alternate world run on utopian lines. The dreamer who has *The Dream* (1924) is Sarnac, a citizen of the far future; and the dream he has is the life of a certain Harry Mortimer Smith born 1895, died 1920. In trying to relate the details of this immersive dreaming experience to his fellow futurians, Sarnac provides a distant perspective upon contemporary life. Wells’ wit and intellectual dexterity does not save the book from a deadening preachiness.

Then again, Wells was still capable of reflecting wittily upon his own soap-box certainties. In *The Autocracy of Mr. Parham* (1930) the ordinary man of the title—a University don of right-wing political views—believes himself to be possessed by the spirit of a Warlord from the planet Mars (‘he realised that an immense power of will had taken possession of him’). He leads a new political movement, the League of Duty Paramount, stages a coup d’état, declares himself Lord Paramount of England and wages a holy war. The main political figures of the day (including Churchill and Mussolini) are introduced under various fictional names. It is a lively satire, somewhat vitiated by the ‘... and it was all a dream’ twist with which it ends.

Wells had much greater commercial success with the rather po-faced *The Shape of Things to Come* (1933). Mankind descends into the valley of collective death after global war; anarchy prevails; warlords prey on humanity; but everything is saved by an elite of technocrats who reconstruct civilisation as a unitary world-state, orchestrated on rational lines. The book is written as if it were a history (Wells had published his nippy, thought-provoking *A Short History of the World* in 1922), which gives the vistas of human suffering and social reconstruction a rather chilly, distant feel, although it has the virtue of implying a suitably historical timescale. A film made from this book, *Things to Come* (William Cameron Menzies, 1936) is highly regarded by some critics, although it is difficult to see exactly why. Menzies’ movie concertinas the novel

into a three-act melodrama, and portrays the coming of the technocrats in a much more offensively fascistic manner, hero-figures descending from the skies in white aircraft to rescue suffering humanity.

The little-known late novella *The Croquet Player* (1936) revisits some of the themes of *The Island of Doctor Moreau*, expressing the gloom Wells felt during the resurgence of European fascism. The story is premised on the notion that *homo neanderthalis* (characterised in this book as ‘invincibly bestial, envious, malicious, greedy’) is still present genetically within *homo sapiens*, and indeed is on the point of breaking through in modern man, destroying civilisation with an epidemic of atavistic barbarism. The mood of the novel is wonderfully dark and unsettling, and it not only captures the sheer pessimism of Wells’ last years, but also functions as a brilliant little gloss upon the rise of totalitarianism in Europe. On the other hand, Wells was also writing spurious *übermensch* fantasies such as *Star Begotten* (1937), which suggests that ‘great men’ owe their greatness to certain rays beamed to the Earth by vastly superior Martian life forms. The individuals who are susceptible to these rays seek one another out, and plan a cleansed and improved world order; but this conceit (which the novel appears to take quite seriously) seems almost incredibly obtuse in the teeth of the escalating European political situation. By the time of Wells’ death another World War was in the process of stabbing its beak into the entrails of Europe, and Wells’ pessimism increased. In his 80th, and last, year he published *Mind at the End of its Tether* (1945), a brief book which, as its title makes clear, expresses directly how little hope Wells had for humanity.

With a writer as multifariously brilliant as Wells, who produced at a high level over so prolonged a period of time, it is very difficult to provide a concise summary and assessment. The fact of his importance to the development of SF is so often reiterated by critics as to wear itself smooth in the ear, to be taken merely for granted. And yet there is something unique about Wells’ achievement; an imaginative capaciousness that, in his best books, is blended with a superb aesthetic precision.

Still, encomium is not enough to account for him, or his place in SF. Part of the logic of SF is not merely that it contains ideas defined by their novelty, however expressive, but that the implications of these novums be worked systematically. Verne’s systems were technically conceived, by and large, and worked through with a clear grasp of that place where large-scale mechanics and human drama intersect. Wells’ systems were much more often social than technical. Where his marvellous machines are concerned he is very often happy to gesture at explanation: a spacecraft powered by ‘anti-gravity’; a time-machine powered by who-knows-what. Assemblages of human beings are a different matter, and in book after book he paid minute attention to systematically worked-out plans for the future of the species. ‘Crude classifications and false generalisations are the curse of all organised human life,’ he insisted [Wells, *Modern Utopia*, 167], but the focus of his dispraise was *crude* and *false*, not *generalisations*.

Wells' problem in this respect was not that he was partial in his social generalisations, but on the contrary that he was too sweepingly systematic. It is another of his strange presciences, although one his advocates might prefer to downplay, that he looks forward to the totalitarian 20th-century's dedication to racial hygiene, sterilisation and concentration camps. On those occasions when Wells talks about such things he adds, as it were, insult to injury with a jauntiness of tone and lazily assumed 'we'. It is anachronistic but not entirely imprecise to call this aspect of his ethic fascist. In *Anticipations* he summarises his social programme as designed 'to favour the procreation of what is fine and efficient and beautiful in humanity—beautiful and strong bodies, clear and powerful minds, and a growing body of knowledge', adding the necessary correlative, 'and to check the procreation of base and servile types, of fear-driven and cowardly souls, of all that is mean and ugly and bestial in the souls, bodies, or habits of men' [Wells, *Anticipations*, 323]. Gramsci notes somewhere that the ethical failure of fascism proceeds from a deliberate confusion of aesthetic and political categories; an aesthetic ideal—let's say, racially Aryan, athletic, single-minded—is treated as a socio-political absolute. Its hidden collaboration with an unspoken, even unconscious, erotic ideal is significant too, especially in a writer whose vision is as sexualised as is the case with Wells. What of those *not* categorised as beautiful, strong and so on?

The method that nature has followed hitherto in the shaping of the world, whereby weakness was prevented from propagating weakness, and cowardice and feebleness were saved from the accomplishment of their desires, the method that has only one alternative, the method that must in some cases still be called in to the help of man, is death. In the new vision death is no inexplicable horror, no pointless terminal terror to the miseries of life, it is the end of all the pain of life, the end of the bitterness of failure, the merciful obliteration of weak and silly and pointless things. [Wells, *Anticipations*, 323]

It's only possible to talk of death in this blithely 'hygienic' way when it is somebody else's death that one has in mind. This is genuinely chilling stuff. Wells' *A Modern Utopia* (1904) is mostly a systematically dreary Cook's-tour of Wells' imagined paradise: a place of physical health and strenuous exercise (there are many bicycles); mass vegetarianism; and so on. But it also addresses the question of 'inferior races'.

Suppose, now, there is such a thing as an all-round inferior race. Is that any reason why we should propose to preserve it for ever? ... There is only one sane and logical thing to be done with a really inferior race, and that is to exterminate it. Now there are various ways of exterminating a race, and most of them are cruel. You may end it with fire and sword after the old Hebrew fashion; you may enslave it and work it to death, as the Spaniards did the Caribs; you may set it boundaries and then poison it slowly with deleterious commodities, as the Americans do with most of their Indians; you may incite it to wear clothing to which it is not accustomed and to live under new and strange conditions that will expose it to

infectious diseases to which you yourselves are immune, as the missionaries do the Polynesians; you may resort to honest simple murder, as we English did with the Tasmanians. [Wells, *Modern Utopia*, 162]

‘Honest simple murder’, in particular, strikes a very uncomfortable tone of *faux* hearty frankness. We might say that Wells in the 1900s could not have foreseen with what hideous sincerity fascist dictators would attempt to put this ethic into practice; except, of course, that Wells *is* actively promoting such action. This is what Wells sounds like when he is being, as he thinks, reasonable and un-extreme on ‘the Jewish question’. ‘How’, he asks in *Anticipations*, ‘will the New Republic treat the inferior races ... [such as] the Jew?’

It is said that the Jew is incurably a parasite on the apparatus of credit ... If the Jew has a certain incurable tendency to social parasitism, and we make social parasitism impossible, we shall abolish the Jew, and if he has not, there is no need to abolish the Jew. [Wells, *Anticipations*, 341]

It’s the ‘we’ here that is so queasy. The ‘Jew’ is already defined as outsider, even as Wells clubbishly promises that he is not going to exterminate him willy-nilly. Only *should the need arise* will that heart-sinkingly casual phrase ‘we shall abolish the Jew’ be actualised. The remainder of the 20th century proved how very low the bar was set for such a criterion.

No topic in Wells’ scholarship was liable to provoke more ill-tempered dispute than this question of his affiliation with early century eugenicism and racism. The best that can be said is that he acknowledges mass extermination to be ‘cruel’, and that therefore he explicitly prefers preventing ‘inferior races’ and the disabled from breeding at all. In a public meeting of 1904, in conversation with one of the leading eugenicists of the day Francis Galton, Wells said:

The way of Nature has always been to slay the hindmost, and there is still no other way, unless we can prevent those who would become the hindmost being born. It is in the sterilisation of failures and not in the selection of successes for breeding that the possibility of the improvement of the human stock lies. [in Sutherland, 19]

John Sutherland calls this quotation the ‘smoking gun in Wellsian scholarship’. Patrick Parrinder has taken issue with Sutherland’s assertion here, insisting that Wells’ comments are ‘fairly tame in the 1905 context’, adding:

This is not to say that it is easily defensible today. In 1905 the intellectual world was gripped by a full-scale moral panic about the ‘rapid multiplication of the unfit’—now we have other sorts of moral panic. ... When he spoke of ‘Nature’s way’ as being to slay the hindmost, he was referring to the human effects of Natural Selection; if we find this objectionable, as I’m sure we should, we ought to look at the facts of comparative life-expectancy in our own society rather than starting a proto-Nazi witch-hunt.

Maybe so. But the significance of Wells' engagement with these questions (a prolonged and dedicated engagement, kept up over a long period of time) is larger than the matter of his individual reputation. Social mores have changed, or more to the point have *been* changed by the horrors of the mid-20th century. For our purposes here the issue is the extent to which the Wellsian tradition in SF proved one in which systematic extrapolation of novums encompasses more than merely machines and structures, to involve human nature as well. One reason some critics think Verne's fantasies fundamentally juvenile is because he is happy to stop with the former. Wells' vision is almost wholly with the latter.

Given the catastrophic consequences such views had in the real world it seems trivial to worry about their effects in the discourses of science fiction; except that it is science fiction that is our concern here. The dual influence on Verne and Wells, two rather different sorts of genius, was so large as to prove shaping on the SF written through the 20th century—for good, and ill. One of the tasks of the historian of the mode, and one of the uncomfortable accommodations the fan must make with herself about her favourite genre, is to anatomise the balance of external-material and internal-personal speculative newness SF proposes. It is one thing to imagine the mobilisation of human resources to build spacestations, starships and other such paraphernalia. It is another to insist on applying the unforgiving protocols of physics to the varying peculiarities of human individuality. 'The engineer of human souls' may seem, out of context, like an admirable title for a speculative thinker to assume, but only if we forget that it was a phrase coined by Joseph Stalin.

This, though, is a sour note on which to end a discussion of Wells. We can at least say, of course, if there were nothing to his vision except quasi-eugenicist ruthlessness, he would not be worthy of our attention. Wells' non-fiction sometimes betrays a dazzle in its author's eyes, compounded as much of his immense popular fame as his tendency to mistake a kind of pitiless extrapolation of anti-benevolence for clarity. But Wells' fiction, most of the time and *a fortiori* at its best, is deeply humane in its mobilisation of all the resources of the imagination for action in the world of men and women.

NOTES

1. 'The preoccupations and techniques of Verne seemed to me to link him with many other, more highly regarded writers [than SF writers]. At the very least he resisted containment in the categories that had been allotted to him. When I came across Kurt Vonnegut's remark that "I have been a soreheaded occupant of a file drawer labelled 'science fiction' and I would like out, particularly since so many serious critics regularly mistake the drawer for a urinal," I seemed to hear the voice of Verne. The purpose of this book, then, is to deliver Verne from confinement in that drawer' [Martin, xi].
2. In John Clute's impassioned words 'the reputation [Verne] long had in English-speaking countries for narrative clumsiness and ignorance of scientific matters was

fundamentally due to his innumerate and illiterate translators who ... remained impenetrably of the conviction that he was a writer of overblown juveniles and that it was thus necessary to trim him down, to eliminate any inappropriately adult complexities, and to pare the confusing scientific material to an absolute minimum' [Clute, 1276–77]. It should be added that more recent translations have been far more faithful to the original.

3. It was an emblem to which Verne returned several times in his writing career, most notably in *Les Cinq cents millions de la Bégum* (*The Bégum's Five Hundred Million* 1879) and *Sans dessus dessous* (*Anti-topsy-turvy*, 1889).
4. English doctor Benjamin Ward Richardson was so impressed by Verne's submarine that he even inserted one (made of wood) into his historical novel set in Roman times, *The Son of a Star: A Romance of the Second Century* (1888).
5. Andrew Martin discusses the difficulty of translating this title: the French phrase *sens dessus dessous* means topsy turvy, or upside down, but Verne's title 'by replacing the *e* in *sens* by an *a*, signifies something like the opposite of these ... and might be loosely rendered as: 'No More Ups and Downs' or 'An End to Inversion' [Martin, 179–80].
6. There is one further point that must be made about Verne's enduring impact on the genre. In addition to being multi-modal works themselves, combining visual and textual elements, Verne's novels migrate promiscuously into a variety of other idioms. For instance, he became better known to most 20th-century audiences through the many cinematic adaptations of his books. Even in the 19th century there were many theatrical and operatic versions of his books staged. Verne himself adapted some of his *voyages extraordinaires* to the stage in collaboration with Adolphe Dennery. *Le Tour du Monde en 80 Jours* (first staged in 1875) ran (in the words of Laurence Senelick) 'for a record-breaking 652 nights ... [and] set the style for the *pièce à grand spectacle*' [Senelick, 3]. Offenbach's *opéra bouffe* *Le Voyage dans la lune* (1875) took from Verne's novel title and mode of travel (firing out of a large cannon), although the story develops in rather un-Vernean directions—the 23 scenes of this lengthy opera actually land the actors on a topsy turvy satirical Moon familiar from the 17th and 18th centuries. The work was a hit, running for 185 performances. Other SF writers have also returned to Verne, writing sequels and adaptations. One 21st-century Anglophone novel even sports the improbable title *Twenty Trillion Leagues Under the Sea*.
7. See for example E S Holden, 'Bright Projections at the Terminator of Mars', *Publications of the Astronomical Society of the Pacific* (December 1894), 284–5. Holden considers whether these lights might index alien life, but with proper scholarly caution downplays the possibility.

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The Early 20th Century, 1: High Modernist SF

It might seem, from the way I closed the previous chapter, as if I'm keen to score cheap ideological points at the expense of SF. It may also be possible that my denying that such was my intention—a denial I insist upon—will fail to convince. The question is whether, by creating a new discursive space for the sublime predicated not upon the older religious paradigms but upon a secularised logic of mobilised, systematised materiality, SF necessarily aligns itself with fascism and other such totalitarianisms. Like them, SF is fond of the bold vision, the radical newness, with totality and with saviours. Like them, SF is excited by the possibilities of the new machine technology, what Roger Luckhurst (in one of the best studies of 20th-century SF we have) calls 'Mechanism'. Luckhurst also notes that any 'monolithic equation' of early century futurism and fascism ignores 'the progressive and socialist aspects of those futures' [Luckhurst, 204]. We do not want to be guilty of lack of nuance. Still, in a quietly devastating essay, Aaron Santesso lists the many SF authors and critics who have insisted SF is by nature liberal and progressive ('essentially the literature of progress,' says Ken McLeod; 'the political philosophy of SF is essentially liberal'; 'allied with Marxist, feminist and queer theory,' suggests Mark Bould, 'and increasingly with critical race studies'), only to propose that core strands of the genre must be

recognized as anything but 'naturally' progressive, instead being more strongly allied with fascist politics. Furthermore, certain foundational tropes and traditions of the genre carry the DNA of fascism, as it were, to the extent that even liberal, progressive authors working within the genre's more refined strains often (inadvertently) employ fascistic tropes and strategies. These tropes and strategies interrupt and disappoint certain ideological expectations advertised as, or assumed to be, native to the genre. [Santesso, 139]

Santesso's aim is to complicate the ideological picture of the genre, rather than to insist that SF is ideologically monolithic either way.¹ Still, these are not merely arbitrary or vacant matters. Nor are they of merely historical interest. As I write this revised edition of the book SF is yet again embroiled in a fierce sectarian battle over its ideological identity, and there are certainly people on the far right who want to claim the genre as uniquely theirs.

This is much more pertinently a matter of form than it is of content. A superheroic protagonist, a war against sub-human monsters, the loving delineation of futuristic machines, are in and of themselves trivial, and often trivially handled. A deeper question, as it were, is whether the forms of SF can be ideologically neutral: the materialist sublime; the bias towards totalising and systematising apprehension of the world; the Adorno-Horkheimer straight line from the Enlightenment (when SF first fully comes into its own) to Hitlerism. Another relevant component is the strange marriage in fascism of an 'elite' ideal and a mass-popular dynamic. Fascism and Nazism simultaneously harked back to a noble, aristocratic past *and* drew on contemporary popular culture; they constellated nostalgia for a mythic long-ago with a futuristically oriented now, or rather an imminent future, the Aryan or Roman knight and the technologies of tomorrow's war. In this there is the larger cultural logic of the earlier 20th century, when 'high art', which we sometimes call Modernism, separated from and indeed self-consciously defined itself in opposition to the 'pulp' idioms of popular art.

It is the thesis of the present study that SF predates the coherent emergence of these ideologies. Still, there is a degree of correlation with the sharp increase in popularity of the mode. The 20th century is the period when SF begins to approach cultural dominance, because it was in this century that the gradient of the graph marking technological and cultural change against time went nearly vertical. The early years of the century were shaped by a new consciousness of the future. To quote Stephen Kern:

The new technology the science fiction, Futurist art and revolutionary politics looked at the future like a predator eyeing its prey. It was an age for planners and go-getters: for the great tomorrow of the Carnegies and the Rockefellers, anarchist terrorists and Bolshevik revolutionaries, the German Navy and the new Russian Army. [Kern, 104]

That notion of the future preying on the present, the fanged and clawed implications of this statement, speak to the ride of that most tigerish and predatory of political ideologies, the one espoused in their different ways by Hitler and Mussolini.

SF in this period becomes a, perhaps the, key way in which writers and readers tried to come to terms with what those changes meant. And it is in 'the machine' that I locate, with all the necessary caveats about simplification, the ideological nexus of Fascism. Machine is a term that comes pre-valorised, as it were, as a gesture towards a totalised-utopian future, strategies for mobilising

the ideological strength of the racialised nation. It doesn't overstate matters to suggest that the fascist ideal is of turning society into a machine, or more precisely of perfecting the 'machine' of society by modernising, cleaning and overdriving it. SF is another machine, and insofar as its machinic function is the generation of new modes of thought, newly systematised quasi-scientific visions of society and world, then it falls easily into a fascistic groove thing (Fig. 9.1).

Following on from what I have been saying, the next two chapters must work with a critical binary that runs the risk of crudeness and simplification. I state it here straightforwardly to be open-handed. The first half of the 20th century sees the opening of a cleavage between 'high art' and popular culture of unprecedented severity. On the one hand, with that literary movement today taught in academies as Modernism, we have a group of often extraordinarily talented writers dedicated to an aesthetic programme of 'making it new' and experimentation, focussing more deliberately on form and style than plot and character, often working dense textures of quotation and allusion into their texts. On the other hand, in the aftermath of the spread of mass literacy in the late 19th century, there was a huge audience for popular narratives that was met by an equally large and often talented, but nowadays less well known, group of writers. It was Ezra Pound who defined Modernism in terms of its novelty—the title of his 1930 collection of essays, intended by him as a slogan for the new movement, is *Make It New*. It's a fair bet Pound had in mind a different sort of novum to the one later identified by Darko Suvin as constitu-

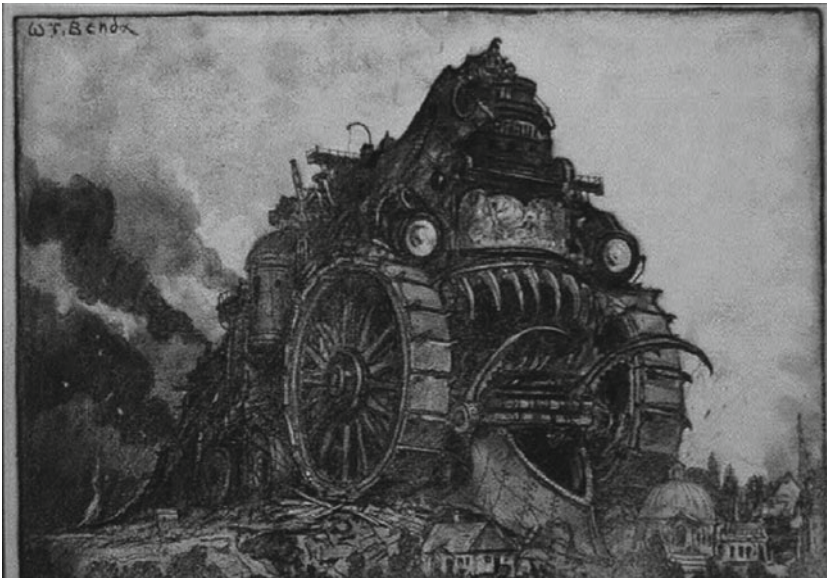


Fig. 9.1 Wladyslaw T. Benda, 'Smoking monster engine destroying town' (1922)

tive of SF. It's also a reasonable strategy not to set too much store by what Pound had in mind.

Fredric Jameson, in *The Political Unconscious*, talks of the contested state of literary culture at the end of the 19th century from which emerged 'not modernism alone, but rather two distinct literary cultural structures, dialectically interrelated and necessarily presupposing each other', 'High Culture' or 'elite' Modernism on the one hand, and mass culture on the other [Jameson, 207]. Maria DiBattista, in her edited collection of essays on exactly this dichotomy, *High and Low Moderns: Literature and Culture 1889–1939* thumbnails the former group as 'self conscious formalists wrestling with newly perceived instabilities in language and meaning ... writers whose imputed moral as well as aesthetic "difficulty" removed or elevated them from the prevailing low and middlebrow culture of their day'. The 'low' modernists, on the other hand, are taken as 'more accessible (i.e. popular as well as easily readable) [and] morally transparent' [DiBattista, 3–4]. As DiBattista goes on to argue, the reality was that, in fact, no such clear-cut distinction existed. The two movements were always closely, even dialectically interrelated. Both 'elitist' and popular-cultural artists faced a similar cultural problematic. The broad difference is that the elitists, or High Modernists, reacted in general with hostility to increasing technological change, whereas popular cultural artists reacted, generally speaking, with excitement and exhilaration. The following two chapters will flesh out this statement.

Such fleshing out must begin, of course, by noting the various exceptions to the rule. Not all High Modernists were hostile to the machine. Indeed, one sub-set, the Futurists, positively embraced the disarrangement of bourgeois conventions that the machines, and especially machines of *speed* such as motor cars and aeroplanes, brought with them. Italian poet Filippo Marinetti launched the Futurist movement with a manifesto in February 1909:

Un'automobile da corsa ... un'automobile ruggente, che sembra correre sulla mitraglia, è più bella della Vittoria di Samotracia. Noi vogliamo inneggiare all'uomo che tiene il volante, la cui asta ideale attraversa la Terra, lanciata a corsa, essa pure, sul circuito della sua orbita [A racing car ... a roaring car that seems to ride on bullets is more beautiful than the Victory of Samothrace. We will write hymns for the man at the wheel, who hurls his spirit's lance from the Earth, along the curve of its orbit']. [Marinetti, *Il manifesto del futurismo*, 4, 5].

This adolescent excitement at the thought of rapid, and especially at *world-spanning*, machines is present in the poetry, visual art and other work of the various Futurists. It provides an uncomfortable context for the pulp, populist idiom that also valorised the technological. Uncomfortable because Futurism was at heart a life-denying and fascistic movement. Marinetti, in declaring 'war against Italian *pastism*', in fact pledged Futurist artists to an aesthetic of total war. 'Dynamic and aggressive,' he wrote in 1914, 'Futurism is now being fully realized in the great world war which it—alone—foresaw and glorified ... *the*

present war is the most beautiful Futurist poem which has so far been seen' [quoted in Griffin, 26]. The ideological consonance between Futurism and fascism was such that Marinetti and his followers enthusiastically endorsed Mussolini's regime, praising him as a specifically Futurist superman.

The larger group of machine-hating *avant garde* Modernists were, by and large, less repellent than this. But the consonances are more striking than the differences. In terms of the SF dialectic I have been arguing for in this present study, the anti-machinists, and High Modernists, tend towards a mythopoeic vision that very often shades into mysticism or religion, to forms of art embedded in tradition (social traditions, literary antecedents, quotation, allusion and intertextuality), even as they self-consciously strive for newness. Works such as Proust's *A la Recherche du Temps Perdu* (seven volumes, 1913–27), Dorothy Richardson's *Pilgrimage* (13 volumes, 1913–67), Joyce's *Ulysses* (1922), Wyndham Lewis' *Apes of God* (1930), T S Eliot's *The Waste Land* (1922), Pound's *Cantos* (the first appeared in 1917, the last in 1970), Robert Musil's *Der Mann ohne Eigenschaften* (*The Man Without Qualities*, 1930–32) all shared experimental stylistic or formal ambition. Similarly, the SF written by High Modernist writers aimed to fracture and reassemble writerly practice in order to apprehend a comparable mythic-transcendent consciousness. Pulp SF, on the other hand, mediated its theological aspects via a technological sublime that was much more obviously materialist, although a great deal of pulp works its way to the reader via a Schopenhauerean-Nietzschean fetishisation of will. In fact it is possible to reverse the binary usually implied by High Art versus Popular Culture in this period. On the one hand J R R Tolkien, 'made it new' as radically as any other High Modernist—although his newness was in genre and mode rather than prose style or form—whilst wholeheartedly returning to a deliberately old-fashioned religiously informed 'magic' fantasy. On the other hand the great achievement of the pulp era—the pulp magazines themselves—fractured reading practice upon the brightly coloured coal-tar dyes of their illustrations and the restless forward-fidgeting ethos of their stories; narrative, excitement, ingenuity and a consistent *outwardness* that chimed with their readers expectations, but which also anticipated the Godless fragmentation of world culture that was eventually nicknamed Postmodernism.

As Luckhurst persuasively argues, this in turn effected an, as it were, 'official' or canonical marginalisation of Wells and the literature he inspired.

This, then, is the first legacy of H G Wells to the scientific romance and science fiction. Despite the early praise for his romances, these works have been buried under subsequent objections to his turn to political futurology and the reduction of the novel to utilitarian vehicle for social policy. Used as a foil for an emergent Modernist aesthetic, Wells misread how the new literary establishment operated to marginalize his work. His reactions, indeed, accelerated this marginalization. The Modernist advocacy of experiment, interiority and depth was allied to a refusal of Mechanized modernity. Texts that were inspired by Wells—unless they routinely opposed the alleged anti-humanism of Mechanism—were thus

seen in the new disciplinary formation of EngLit as somehow 'outside' literature. The peculiar conditions in the 1890s—the hybrid formations of high and low, the imbrication of science and culture—did not last. Hierarchies developed that mobilized literature *against* forms of mass culture. [Luckhurst, 46]

One of the arguments of Luckhurst's book is that this 'official' narrative of Modernism (in a nutshell, that Henry James and his ilk 'won' Modernism and Wells, and his, lost) is, simply, wrong—despite the fact that it is precisely the narrative enshrined in university histories of the literary history of the century.

ANTI-MACHINISTS

Hostility towards technology took a number of forms and degrees of intensity amongst the High Modernists. For some the danger was the increasing mechanisation of the social arena, with the belief that individual humans would come to be treated as mere cogs in a machine. For others the whole drift of contemporary society towards technology involved a deplorable loss of primitive 'naturalness' and contact with the organic, non-technological and spiritual. Valentine Cunningham identifies Aldous Huxley's *Brave New World* (1932) as 'the key dystopian fiction' of the 1930s, arguing that it crystallises a 'widespread Western disquiet over the triumph of machine-age materialism' [Cunningham, 399]. Cunningham traces this influential 'machine bashing' from D H Lawrence and T S Eliot's polemical opinions in the 1910s and 1920s, through

the same line as Q D Leavis (neither Naomi Mitchison in *We Have Been Warned* nor Annabel William-Ellis in *To Tell the Truth*, rasped Mrs Leavis ... were capable of questioning 'the machine' as 'an absolute value' or entertaining 'any doubts about machine tending as the good life') ... It was natural enough for Evelyn Waugh to join in this machine-bashing, and Robert Byron ('conditioned reflexes, Ford lorries, and abortion clinics') and Osbert Sitwell ('Magnetogorsk, the Nuremberg Stadium and the Great West Road') and J R R Tolkien ... George Orwell sid[ed] in *Wigan Pier* with *Brave New World* ('probably expresses what a majority of thinking people feel about machine civilisation'). [Cunningham, 399]

Cunningham adds Charles Williams, Wyndham Lewis, Peter Fleming and Julian Symons to these 'machine bashers'. This hostility was informed by a belief that the denial of the organic, natural world was part of what Stephen Spender in 1937 called a cultural 'death wish', characterised by 'sentimental masochism'. Malcolm Muggeridge, writing in the last year of the decade, diagnosed a 'longing for death' and 'a reservoir of death-longing, ready to be tapped' [Baker, 58]. Huxley based his character Mark Rampion, in *Point Counter Point* (1928), on his friend D H Lawrence; certainly Rampion expresses some typically Lawrentian views: 'the love of death's in the air,' he complains, of his children's fascination for 'motor cars, trains, aeroplanes, radios.'

I try to persuade them to like something else. But they won't have it. Machinery's the only thing for them. They're infected with the love of death. It's as though the young were absolutely determined to bring the world to an end—mechanize it first into madness, then into sheer murder. [Huxley, *Point Counter Point*, 320].

Rampion's opinion of the mass of the working population is that 'they live as idiots and machines all the time, at work and in their leisure. Like idiots and machines, but imagining they're living like civilized humans' [Huxley, *Point Counter Point*, 305].

This view of the drift of the world is found often in the writing of this portion of the self-elected 'elite' of Modernist art. It hardly overstates the case to say that for such writers 'science fiction' is an exclusively dystopian mode; the machines and technologies so often celebrated and even fetishised in pulp SF of the period are presented as pernicious and dehumanising in works such as Karel Čapek's *R.U.R.* (1921), Yevgeny Zamiatin's *Мы* (*We*, completed though unpublished by 1920; first published in an English translation in 1924), Fritz Lang's *Metropolis* (1927), Aldous Huxley's *Brave New World* (1932), René Barjavel's *Ravage* (1943), Hermann Kasack's *Die Stadt hinter dem Strom* (*The City Behind the River* 1946), Robert Graves *Seven Days in New Crete* (1949), George Orwell's *Nineteen Eighty-Four* (1949) or Ernst Jünger's *Gläserne Bienen* (*Glass Bees* 1957). In each of these cases an imagined future society has been ordered along technological or scientific lines to the detriment of the individual quality of life of that society's citizens.

I hurry to qualify my lumping all these together. In particular, it distorts *Brave New World* to place it in the company of unambiguously miserable or restrictive dystopias. Such categorisation tends to miss the subtleties of Huxley's approach. It is a mistake to read this novel purely on the level of content, and therefore see it as a straightforward indictment of technological society, consumer society or mass-culture in general. John Carey thinks that the novel is 'intent upon establishing the superiority of "high" culture, and the baseness of the leisure pursuits preferred by the masses' [Carey, 86–7]. But this is a partial view. In fact *Brave New World* is a commentary upon the logics of utopian fiction, and an engagement in the metatextual questions of genre that include the dynamic between science fiction and realist fiction.

Brave New World is set in A.F. 637, which is to say 637 years after Ford (Henry Ford, the American industrialist whose Model T motor car was the first to be assembled by mass-production methods). Huxley imagines an entire society based upon the principles of specialist engineering, uniformity and a Taylorised communal ideology. The World State's two billion citizens are hatched in commercial hatcheries rather than born—indeed, they consider biological parturition a disgusting notion. Whilst still fetuses they are conditioned with a set of virtues, including passive obedience, material consumption and sexual promiscuity. They are also graded before birth into separate castes: alphas are at the apex of society and occupy professional jobs; betas occupy middle-ranking positions; and the inferior gammas are allotted menial work.

All are given state handouts of a drug called soma, which is 'euphoric, narcotic, pleasantly hallucinant' [*Brave New World*, 48]. Community solidarity is promoted through a range of ideological tactics, from hypnopedic indoctrination to Community Sings and Solidarity Services. Citizens lead lengthy, disease-free and happy lives and are all both materially productive and (more importantly for this capitalist ideal) materially consumptive. They have a variety of pastimes: sex; odiferous compositions played upon scent organs; tactile 'feelies' that have superseded the visual 'movies' of the 20th century. The novel begins with a visit to a hatchery, and continues with the ordinary but obscurely dissatisfied alpha-plus male Barnard Marx (his unhappiness is explained in terms of a minor malfunction in his antenatal treatment). Marx travels to a reservation in New Mexico where small communities of 'savages' live a more primitive existence. There he discovers a young man, the son of a Western woman who had been mistakenly abandoned in the reservation decades before. Marx brings this Savage back to 'civilisation', where his naïf perspective allows Huxley to draw out the various aspects of his imaginative creation. In *Brave New World* religion and art have been eliminated, because they tend to destabilise the communal harmony. The Savage, who has schooled himself on heady draughts of Shakespeare, falls powerfully and destructively in love with the vacuous Lenina—inappropriate behaviour for a society in which 'family, monogamy and romance' have been eliminated. The intensity of John Savage's emotions leads him to despair. Increasingly alienated from the bland hedonism of the civilised world he secludes himself in a tower, whipping himself in self-disgust. Eventually he hangs himself.

One climax in the book's construction is a lengthy discussion between the Savage and Mustapha Mond, one of the Ten World Controllers, in which the relative merits of poetically ideal misery and scientifically practical happiness are debated. The sheer fluent sensibleness of Mond's *Weltanschauung*, so cunningly crafted with Huxleyan irony as to approach an uncanny asymptote of unironic wisdom, is in itself a major achievement of the novel's satire:

Truth's a menace, science is a public danger ... It's curious to read what people in the time of Our Ford used to write about scientific progress. They seemed to imagine that it could go on indefinitely, regardless of everything else. Knowledge was the highest good, truth the supreme value; all the rest was secondary and subordinate. True, ideas were beginning to change even then. Our Ford himself did a great deal to shift the emphasis from truth and beauty to comfort and happiness. Mass production demanded the shift. Universal happiness keeps the wheels steadily turning; truth and beauty can't. And, of course, whenever the masses seized political power, then it was happiness rather than truth and beauty that mattered. Still, in spite of everything, unrestricted scientific research was still permitted. People still went on talking about truth and beauty as though they were sovereign goods. Right up to the time of the Nine Years' War. *That* made them change their tune all right. What's the point of truth or beauty or knowledge when the anthrax bombs are popping all around you? That was when science first began to be controlled—after the Nine Years' War. People were ready to have

even their appetites controlled then. Anything for a quiet life. We've gone on controlling ever since. It hasn't been very good for truth, of course. But it's been very good for happiness. One can't have something for nothing. Happiness has got to be paid for. [Huxley, *Brave New World*, 210]

Huxley has drawn a world in which human happiness, and the stability of that happiness, is the defining quality. Utopian thinkers had hitherto always assumed one of two principles as the index of utopian success: either the increased efficiency of the broader functioning of society, often conceived on quasi-military lines; or else—more usually—the Benthamite criterion of the maximisation of happiness for the greatest number of people.² Huxley was uninterested in the military utopia, but his innovation, as witty as it is profound, was to interrogate the utopian associations of happiness *per se*. Indeed, this is a constant theme in his writing. Before Huxley it was generally taken for granted that increasing human happiness was a good thing. Huxley questioned that assumption. His thwarted poet character, Francis Chelifer, from 1925's *Those Barren Leaves* wonders:

whether the ideal of happiness towards which we are striving may not turn out to be totally unrealizable, or, if realizable, utterly repellent to humanity? Do people want to be happy? If there were a real prospect of achieving a permanent and unvarying happiness, wouldn't they shrink in horror from the boring consummation? [Huxley, *Those Barren Leaves*, 86]

This is the blueprint for *Brave New World*, a society of permanent and unvarying happiness. 'Happiness,' observes Mustapha Mond, 'is a hard master—particularly other people's happiness' [Huxley, *Brave New World*, 207]. In Huxley's hands it becomes a harder master even than Orwell's Big Brother, because it is, as ideology, so much more thoroughly internalised into the individual.

George Orwell thought *Brave New World* 'a brilliant caricature of the present' but insisted that the book 'casts no light on the future. No society of that kind would last more than a couple of generations'. The reason for this instability of dictatorship, Orwell thought, was the fact that the ruling caste in Huxley's world lacked 'a strict morality, a quasi-religious belief in itself, a mystique' [quoted in Baker, 13]. What is especially interesting about Orwell's opinion is its fundamental misreading of Huxley's text—because the whole *point* of *Brave New World* is precisely its studied lack of mystique, of quasi-religious belief. The banal hedonism of his imagined world acquires its horrible flavour from the absence, and indeed the ruthless suppression, of one particular numinous quality. This is not religion as such, although conventional religion is one of its manifestations. Towards the end of the book the Savage argues with Mustapha Mond, who says that 'God is incompatible with machinery and scientific medicine and universal happiness', and explaining how the drug soma has replaced the religious impulse, it is 'Christianity without tears' [*Brave New World*, 214, 217]. God is an

'inconvenience' for this particular civilisation, and the Savage's insistence on desiring inconvenience for its own sake is one feature of a more thoroughgoing masochism that also sees him whipping himself and, eventually, hanging himself. 'I don't want comfort,' he tells Mond. 'I want God. I want poetry. I want real danger, I want freedom, I want goodness. I want sin.' Mond suggests that he is 'claiming the right to be unhappy', and when the Savage accepts this Mond points out that such a right also includes 'the right to grow old and ugly and impotent; the right to have syphilis and cancer; the right to have too little to eat; the right to be lousy; the right to live in constant apprehension of what may happen tomorrow; the right to catch typhoid; the right to be tortured by unspeakable pains of every kind' [*Brave New World*, 219]. It is difficult to avoid conceding that he has a point.

The satire here is fully anti-Freudian. Freud's definition of mental health—the ability to work and love—is caricatured into the typical citizen of Mond's world, 'a happy, hard-working, goods-consuming citizen' with unlimited access to sexual love, and as such 'perfect' [*Brave New World*, 215]. The other obvious correlative to Huxley's satire is Bolshevik Russia. In the 1950s Huxley observed that 'the old-fashioned 1984-style dictatorship of Stalin has begun to give way to a more up-to-date form of tyranny', and 'the Soviet system combines elements of 1984 with elements that are prophetic of what went on among the higher castes in *Brave New World*' [*Brave New World Revisited*, 4–5]. Again, in contrast to Orwell's more heavy-handed attack on State Communism the genius of Huxley's approach is to follow the logic of a Stalinist ideology through to its own stated conclusions. Huxley was certainly opposed to Bolshevism as he understood it, and his opposition reads as a gloss upon *Brave New World*:

To the Bolshevik idealist, Utopia is indistinguishable from one of Mr Henry Ford's factories ... Into the Christian Kingdom of Heaven men may only enter if they have become like little children. The condition of entry into the Bolshevik Earthly Paradise is that they shall have become like machines. [Huxley, *Music at Night*, 152]

Counter-intuitively Huxley considered this belief 'extravagantly romantic', and dubbed Bolshevism 'the new Romanticism'. But although he inserts some banal Middle-England caveats (to the effect that 'men cannot live without a certain modicum of privacy and personal liberty') Huxley does understand the visceral appeal of romanticism. In other words, the greatest achievement of *Brave New World* is not portraying dystopia, it is portraying dystopia *as utopia*. Teaching the text to undergraduates for many years, I have often been struck how few of them would consider a long disease-free life devoted to leisure and promiscuous sex anything other than a wished-for consummation.

It is possible to ignore, as many critics have, the sheer *reasonableness* of Mond's lengthy justification of his system. It is also possible—just—to sympathise with the Savage's adolescent muddle-headed and masochistic Shakespearean ide-

alism. But it is, simply, wrong to argue (as John Carey does) that 'Huxley is committed to an idea of the human spirit which requires the existence of pain and hardship' because 'by surmounting these, the spirit proves itself' and without them 'life becomes soft and ignoble.' Carey goes on to connect *Brave New World* with Nietzsche's *Beyond Good and Evil*, suggesting that both works express a 'notion of the human spirit as combative and aspiring ... suffering is necessary for the plant, man, to grow up vigorously' [Carey, 88]. But Huxley has no illusions about pain; and it is not *suffering* that the hedonistic, herd-like, contented, cowardly citizens of his *Brave New World* lack. It is something else altogether. The element missing from the picture is described in a 1931 essay called 'Meditation on the Moon' in which Huxley defines god:

How shall we define a god? Expressed in psychological terms (which are primary—there is no getting behind them) a god is something that gives us the peculiar kind of feeling which Professor Otto has called 'numinous' (from the Latin *numen*, a supernatural being). Numinous feelings are the original god-stuff from which the theory-making mind extracts the individualized gods of the pantheon. [Huxley, *Music at Night*, 60–61]

For Huxley this numinous feeling is a core aspect of the healthy psyche. It does not relate to the actual existence or non-existence of a divine being, but rather to the psychological make-up of the human animal. The unrelenting happiness of *Brave New World* is dystopic not because it excludes suffering, but because it excludes this numinous element. In the novel Huxley balances the ridiculousness of the Savage's self-flagellation with the beauty of his repeated quotations from Shakespeare—the numinous element of the poetry obscuring the fundamental implausibility of an autodidact Mexican peasant from the 27th century becoming so expertly versed in the work of an English poet and dramatist from the 16th. In poetry this Huxleyan numinous quality is called beauty; but in his own life Huxley went on to argue that, practically speaking, a pharmochemical form of the numinous was required if the masses were to be catered for. His own experiences with mescaline and LSD in the 1950s persuaded him that social solutions lay in this direction. His famous accounts of his drug-taking, and the numinous sense of wonder they opened for him in quotidian experience, are *The Doors of Perception* (1954) and *Heaven and Hell* (1956). Unlike the drug soma from *Brave New World*, Huxley found LSD to be a fundamentally *sacramental* drug; he describes observing both the outer world and his own inner landscape under the influence of the drug and finding them both 'self evidently infinite and holy' [Huxley, *Doors*, 38]. He suggests that the drug should be introduced to the general public in preference to the commonly used stupeficients like alcohol and tobacco. Utilising Wells' metaphor of 'the door in the wall' he warns:

The problems raised by alcohol and tobacco cannot, it goes without saying, be solved by prohibition. The universal and ever-present urge to self-transcendence

is not to be abolished by slamming the currently popular Doors in the Wall. The only reasonable policy is to open other, better doors ... what is needed is a new drug which will relieve and console our suffering species without doing more harm in the long run than it does in the short [Huxley, *Doors*, 53]

In all, it is this underlying philosophy that renders *Brave New World* one of the inescapably great SF novels of the 20th century; because it takes SF as a genre to one sort of logical anti-mystical conclusion, a world—happy, healthy, bland—purged of religious magic. In other words, *Brave New World* exactly elaborates the dialectic that has been shaping SF since the 1600s.

MYSTICAL AND RELIGIOUS SF

Also expressive of this ‘deep’ SF dialectic are the various hybrid novels of the period that cross SF tropes with expressly religious or spiritual ambitions. In part, these sorts of book reflect the continuance of the sub-genre of ‘mystical science fiction’ from the later 19th century. An unbroken chain of such books can be traced through the century.

Austrian artist Alfred Kubin published only one SF novel, which he also illustrated, *Die andere Seite* (*The Other Side*, 1909), an apocalyptic extravaganza in which a journey to the fantastic city of Perle mirrors the protagonist’s journey into his own soul. People compare the often oppressive absurdity of mood conjured by Kubin in this book with that of fellow Austrian Franz Kafka. Kafka is by far the better writer, although his apprehension of alienated modern life was starker and less forgiving. In *Die Verwandlung* (*The Metamorphosis*, 1915) Gregor Samsa wakes to find himself inexplicably mutated into a man-sized insectoid of some kind (the German *ungeziefer* does not precisely mean insect, but has a wider semantic field: vermin, bug, grub). The reactions of Samsa’s family to this situation—initially disturbed, later, indifferent and neglectful—constitute the meat of the tale. More obviously SF is *Der Proceß* (*The Trial*, 1925). Joseph K is arrested, and then elaborately and somewhat mysteriously persecuted by shadowy and possibly governmental agents. He is never told his crime. That this is a novel that was, effectively, translated from its idiom of dystopia into that of realism by a number of totalitarian regimes in the 20th century does not make it any less SF and, if anything, only enhances its potent materialist-fantastic flavour. In its dramatisation of the absurdist arbitrariness of the affairs of this bleakly rendered alternate Viennese society, as much as its powerful insistence on the radical passiveness and hopelessness of individual human life, it remains perhaps the most relentlessly pessimistic vision of what the Enlightenment tradition had made of ordinary life.

The penultimate chapter of *Der Proceß* takes Joseph K to the Cathedral where a priest offers not the hope of salvation but an obliquely depressing fable concerning a mysterious doorkeeper, and the inaccessibility of justice in the world.

‘Nein,’ sagte der Geistliche, ‘man muß nicht alles für wahr halten, man muß es nur für notwendig halten.’ ‘Trübselige Meinung,’ sagte K. ‘Die Lüge wird zur Weltordnung gemacht.’ [‘No,’ said the priest, ‘you don’t need to accept everything as true, you only have to accept it as necessary.’ ‘Depressing view,’ said K. ‘The lie made into the rule of the world.’] [Kafka, 388]

Faith in Kafka is something painfully noticeable by its absence. The contrast with, for instance, the much less sophisticated British writer Guy Thorne, whose novel *Made in his Image* (1906) imagines a futuristic dystopia only as a prelude to a fable of man redeemed by the love of Christ, tends only to show how much more penetrating Kafka’s vision was.

An idiosyncratic planetary romance with strongly mystic-religious overtones is *A Voyage to Arcturus* (1920), by the eccentric Scottish writer David Lindsay. This novel remains relatively little known, although it has disciples who praise it extravagantly. It tells the story of Maskull, a 1920s man transported to the planet Tormance, a world in the constellation of Sirius. There he awakens with his body changed into a humanoid but alien form, and embarks on a series of intensely imagined, rather disorienting adventures. *Pilgrim’s Progress-like* (although Lindsay, like Tolkien, repudiated allegory) Maskull advances towards an understanding of the spiritual nature of the cosmos. Two alien beings, Muspel and Crystalman, are revealed as Manichean spirits contending with one another. Muspel is the source of spiritual light, which is broken into material fragments by Crystalman. Lindsay renders these fragments (which is to say, the material world, and more particularly *us*) as maggot-like ‘green corpuscles’ striving ‘towards Muspel’ but ‘too feeble and miniature to make any headway’ and ‘danced about against their will’ by Crystalman, in the process of which they suffer ‘excruciating shame and degradation’ [Lindsay, *Voyage*, 296]. The book ends with a transformed Maskull recognising that only through pain can salvation from Crystalman be achieved.

A Voyage to Arcturus has a rather marmite, love-or-loath flavour to it. Some readers find its involuted complexities frustrating and self-indulgent. For others they are insightful and eloquent revelations about the true nature of life. What makes the book characteristic of High Modernism is more than just the serious-minded elevation with which it is composed. More importantly, all its baroque adventures, weird characters and bizarreness tend towards the elaboration of Lindsay’s private mythology, an ethos and a *weltanschauung* that valorises the mortification of the flesh. It is easy to see Lindsay’s repeatedly expressed disgust at sexual desire and his fetish for purity [‘sparks of living, fiery spirit hopelessly imprisoned in a ghastly mush of soft pleasure’, *Voyage*, 298] together with his ultimate belief in life as pain (which, he says, though intense and unrelenting must be endured and even celebrated as our only validation) as straightforwardly repellent. Others may find these crotchets profound insights into the underlying spiritual logic of the cosmos. Certainly this is a novel unlike any other, a work of genuinely startling if uncomfortable mythopoeic grandeur.

Some of this same grandeur is apparent in the classical music of the period. Russian-born composer Alexander Scriabin moved from inspiration by the Nietzschean doctrine of the will to power to more mystical beliefs, matching atonal and experimental musical languages to quasi-religious visions. He died before completing *Mysterium*, a piece of such ambition that he literally believed its performance (in, he hoped, the Himalayas) would herald the end of the world itself—an ambition slightly less comical if seen as part of a longer-standing chiliastic or science fictional apocalyptic tradition. A mystical and quasi-religious drift is also apparent in the astrologically inspired orchestral fantasia *The Planets* (first publicly performed in 1920) by British composer Gustav Holst. This suite begins with music that characterises the planets as correlating to human concerns, as its essentially astrological trope might suggest: the blasting, machine-gun-stuttering rhythm of ‘Mars, the Bringer of War’; the human-scale sensuality of ‘Venus, the Bringer of Peace’. But as the planets represented recede further from Earth a distinct other-worldly chill enters the music. ‘Jupiter, the Bringer of Jollity’ is merry enough, but ‘Saturn, the Bringer of Old Age’ expresses not so much human dotage as the estranging age of the galaxy itself. ‘Uranus, The Magician’ and ‘Neptune, The Mystic’, with their chilly beauties, provide a distanciated strangeness rare even in good SF. That it is essentially religious in inspiration is hard to deny.

Unambiguously religious is the writing of C S Lewis, most famous today as the author of the Christian-allegorical fantasy series about Narnia, from *The Lion, the Witch and the Wardrobe* (1950) to *The Last Battle* (1956); but his SF ‘Cosmic trilogy’, sometimes called the ‘Ransom trilogy’, predates his fantasy writing, and is in some ways more interesting. In *Out of the Silent Planet* (1938) the protagonist Elwin Ransom is kidnapped by two evil scientists and flown to Mars (or Malacandra, as it is called). This journey reveals the solar system to be fully pre-Copernican, imbued with divine grace in a palpable manner—all except Earth, known to the rest of the system as the silent planet because it is cut off by its dominating demons. Travelling through space discloses it not as ‘a black, cold vacuity’ but as the very idiom of God: “‘Space’ seemed a blasphemous libel for this empyrean ocean of radiance through which they swam’ [Lewis, *Cosmic*, 26]. This elation lessens as they descend to the surface of Mars, but the point of the intricate alien civilisation Ransom discovers there is that it is unfallen. It has needed no Christ to redeem it (with the subsequent confusion of a multiplicity, or even a Bruno-esque infinity, of Christs). In *Perelandra* (1943) Ransom travels to Venus (the title is the aboriginal name for that world) and observes a Venusian Adam and Eve in an unfallen paradise being tempted by a particularly irritating and dull Satan, taking the form of Weston. Ransom successfully defeats Weston’s plans, again preserving Lewis’ Solar System against the conceptual unravelling of a plurality of redeemers. Finally, the trilogy circles round, finishing as it began (as the pre-Copernican logic of the whole demands it must) on Earth. *That Hideous Strength* (1945) is a less effective

‘fairy tale for grown-ups’ about Oxford University, a research organisation called N.I.C.E which is actually the front for a Satanic group, and the resurrection of Merlin from Arthurian myth. In fact, the downsizing of the saviour figure from Christ to Arthur in this novel is an attempt to sidestep the same theological problematic. But in one sense it is wrong to read Lewis’ deliberately medieval SF in a post-Copernican manner. The main thrust of *That Hideous Strength* makes plain the central project of the whole trilogy: to argue that materialism is not only incompatible with ethics, but must be eliminated root, branch and very concept (Lewis calls it ‘objectivism’ and presents it straightforwardly as an invention of Satan). For Lewis spiritual realities are true. The material world is a kind of aberration, and dedication to it—as, for instance, by modern scientists—is mere blasphemy:

the physical sciences, good and innocent in themselves, had already, even in Ransom’s own time, begun to be warped ... if this [development] succeeded, Hell would be at last incarnate. Bad man, whilst still in body, still crawling on this little globe, would enter that state which, heretofore, they had entered only after death. [Lewis, *Cosmic*, 560]

Lewis’ science fiction is one with his theological disquisitions. Indeed, *That Hideous Strength* is in effect a fictionalisation of the moral of his *The Abolition of Man* (1943), a witty but fatally one-sided attack on philosophical relativism that ends with a fictionalised future dystopia in which ‘objective value’ has been discarded. If we see SF as a dialectic between materialism and spiritualism, between I-It and I-Thou understandings of the relationship of consciousness to cosmos, then Lewis is an unembarrassed advocate of the latter approach.

ZAMIATIN

Russian writer Yevgeny Zamiatin was a Bolshevik revolutionary who later fell foul of the ideological orthodoxies of Soviet Russia and ended his days in Paris, an exile hated by both left and right. His masterpiece dystopia *Mbl* (*We*) was circulated in manuscript in 1920 and translated into English in 1924, although a Russian-language edition was not published—in America—until 1952. The novel did not appear in Zamiatin’s homeland until after the Soviet Union had fallen.

Mbl depicts a totalitarian state premised on the belief that privacy, personality and especially free will are the causes of unhappiness. The citizens, or ‘Numbers’ of ‘OneState’ have their lives controlled with mathematical precision. Everybody lives in glass apartments, all on display to all; everybody’s day is regulated by a rigid timetable. Indeed, in some respects even Zamiatin is unwilling to think through to the logical conclusion of this schema. For example, his Numbers are permitted two personal hours a day, and they discretely close the curtains to their glass rooms in order to have sex. A society in

which privacy was so anathema that there were no private acts at all is perhaps too corrosive of the conventions of dramatic fiction for Zamiatin's purposes, although it would surely be the more likely logic of OneState. More familiarly Soviet is the fact that everybody lives under the rule of the Benefactor, a Big Brother figure *avant la lettre*. The narrator-protagonist is called D-503 and describes his work as part of the team building 'The INTEGRAL', a spaceship, whose purpose is to reach and convert any extraterrestrial civilisations to the happiness of the OneState way. He becomes involved in a resistance group that seeks to do away with the Benefactor. The system responds by insisting that all Numbers have an Operation, something like a prefrontal lobotomy, that will render opposition impossible. The narrator eventually succumbs to the Operation, but only after struggling to find an idiom in which to understand, and therefore perform, revolt. The novel ends bleakly, although with hints, via D-503's purified consciousness, that things may be changing ('in the western quarters there is still chaos ... unfortunately, quite a lot of Numbers who have betrayed reason ... I'm certain we'll win. Because reason has to win', Zamiatin, *We*, 225). Not only does Zamiatin cast Enlightenment reason as cruel and, in a literal sense, dictatorial, he also equates that oppressive rationality explicitly with Christian religion. In a meeting with the Benefactor, D-503 is told that their state is that paradise when the burden of Free Will is removed from humanity by God ('the one who slowly roasts in the fires of Hell all those who rebel against him'). According to the Benefactor, the very cruelty of God is inherent in the concept of atonement:

A true algebraic love of mankind will inevitably be inhuman, and the inevitable sign of the truth is its cruelty ... remember: in paradise they [human beings] have lost all knowledge of desires, pity, love—they are the blessed, with their imaginations surgically removed (the only reason why they are blessed)—angels, the slaves of God [Zamiatin, *We*, 206–7]

The poetry and humour that leaven this otherwise rather unrelenting dystopia save it from being too dismal; and despite the obstacles that were placed in the way of its publication, it exercised an enormous influence on dystopian writing across the century. George Orwell, for instance, read a French translation of it in Paris, and worked from its premises to create *Nineteen Eighty-Four* (discussed below).

ČAPEK AND BULGAKOV

There are two significant High Modernist writers who do not illustrate the more one-dimensional anti-machinism of the authors discussed above. The first is Czech writer Karel Čapek, whose 1921 stage play *R.U.R.* (*Rosumovi Umělí Roboti*, literally *Rossum's Artificial Robots* but usually translated as *Rossum's Universal Robots* to preserve the acronym) turns many Modernist pieties upside down. The drama is set in a factory located on an island in the South Pacific which is manufacturing synthetic humanoids. This is the text

where the word robot was coined (*robota* is Czech for forced labour or drudgery), although Čapek's robots are not metallic, but fleshy. Similarly, the company title, Rossum, is a play on the Czech word *rozum*, which means reason or intellect. The set-up is almost too evidently that of a hypostatized mind/body or masters/workers binary.

The robots have been manufactured to free humanity from the drudgery of labour, but have therefore become an oppressed underclass themselves. The play begins with idealistic Helena Glory pressing factory manager Harry Domin to free the robots. He believes they have no souls, but there is never a doubt in the play of the essential humanity of the robots, despite their rather reserved manner. Their rebellion against servitude is dramatically inevitable. They storm the stage, killing all humans except Alquist, clerk of works and the only human who still works with his hands.

But without human help they cannot reproduce. The play ends on a queasily religious note, as two modified robots, one male and one female, are renamed Adam and Eve by Alquist, and sent out into the world to breed without the stigma of original sin. As socialist allegory the play is too obvious, but as SF it is doing interesting things with the theological anxieties at the core of the genre. Something similar is true of Čapek's other, less well known, SF works. The novel *Továrna na absolutno* (*The Factory of the Absolute*, 1922) concerns a new technology of power generation by the annihilation of matter called the Karburator. In fact this device works by siphoning the absolute, or God, into the real world. The myriad releases of God trigger miracles, and a mess of competing versions of these divine revelations lead inevitably to a devastating religious war. In *Válka s mloky* (*War With the Newts*, 1936) mankind discovers, and quickly exploits, a race of giant intelligent newts of the genus *Andrias scheuchzeri*. They are initially used as aquatic workers, co-opted into human armies as marines, and bought and sold, but this exploitation and oppression leads to a Newt uprising. Obtaining explosives from human armies, the newts sink large stretches of land (including much of Europe and Asia) beneath shallow waters. The end of humanity appears inevitable, until, in the last chapter, the author steps into his own narrative to forestall the inevitable and consider alternatives. If this summary makes the book sound like an over-obvious satire then it misrepresents the actual texture of Čapek's novel. In part narrative, in part a scrapbook of all manner of different accounts, texts, fonts, alphabets and illustrations, *Válka s Mloky* considers its satiric premise from so many different (human) angles that the newts acquire a thoroughgoing believability, and the novel's world is rendered with impressive thickness. Once again, Čapek's vision is properly science fictional in the sense that it mediates a religious premise through its technological and biological discourse. Facing the apocalyptic flood, one character notes that 'the sea covered everything at one time, and it will do again. That will be the end of the world ... I think the Newts were the cause of it that time too' [Čapek, *Newts*, 338]. The fish-men of the novel become strange re-imaginings of the original fish-man-god, Christ himself.

A similarly expert skill with imaginative satire is found in the work of Russian writer Mikhail Bulgakov. His story 'Роковые яйца' ('The Fatal Eggs', 1924) is a short, and sharp, pastiche of Wells' *Food of the Gods*—one of the characters specifically mentions Wells' novel in order to describe the events he experiences. Set in the then near-future of 1928, within a neon-filled Bolshevik Moscow, 'The Fatal Eggs' concerns the scientist Professor Persikov—a typical Bulgakov character, hilariously plagued by Soviet bureaucracy and overly conscious of his own ridiculousness and inability to function as a decent human. By chance Persikov discovers a 'ray of life', a light beam capable of accelerating the growth of an organism, produced when the lens of a microscope is twisted in a certain way (the science is spurious, which is to be expected in Bulgakovian fantasia). Almost immediately his discovery is taken from him by government agents, who use it to mass-produce poultry in farm collectives to counter a deadly chicken plague that threatens to destabilise the Soviet Union. But things turn really sour when the imported eggs used for the hatching produce giant monster chickens and ostriches, and especially when one particular batch of eggs turns out to be anaconda rather than chicken eggs. The Soviet Army engages in desperate combat with these latter. The story relentlessly satirises irrational bureaucracy, shortsighted dogma, the rapid and enforced change of nature, mindless research, and the deification of technology, qualities that characterised both capitalist and communist Modernist society. In the end, nature redresses the balance, as the snakes, like the Nazis after them, are eliminated by the Russian winter, and rioting crowds murder the scientists. Bulgakov's masterpiece, and most famous work, is *Мастер и Маргарита* (*The Master and Margarita*, written 1928–1940 but not published until 1967), a superbly entertaining and thought-provoking fable about the appearance, in the atheist Soviet Union, of the Devil himself, together with his entourage. As a dramatic gloss upon the dialectic out of which science fiction as a whole is synthesised this could hardly be bettered.

STAPLEDON

Olaf Stapledon was, despite his Scandinavian-sounding name, a British writer. He took a PhD in Philosophy from the University of Liverpool in 1925 and, inspired by the great 19th-century philosophers of the Will, particularly Schopenhauer, he began writing imaginative fiction that dramatised the longest timescales. The first of these *Last and First Men: a Story of the Near and Far Future* (1930) is couched as a future-history, starting in the manner of Wells (a writer with whom Stapledon corresponded, and to whom he acknowledged a profound debt). But very soon the logarithmically structured storyline sweeps us into a far future; *homo sapiens* has evolved into a new species, whose manner of living on the planet is described. This happens then happens again, many times. The book conceives of evolution as a repeatedly punctuated equilibrium, the punctus usually being the near-destruction of all life, a process that produces eighteen distinct races of men, the last a solar-system spanning

set of telepaths who are nonetheless ultimately doomed to be extirpated by a cosmic collision. A sequel, *Last Men in London* (1932) explains how the original novel came to be written, with one of the last men experiencing the (to him) strange life of a 20th-century Londoner via temporal telepathy. *Odd John: a Story between Jest and Earnest* (1935) takes seriously the possibility of 'supermen', rendering their superiority in spiritual and intellectual terms. John Wainwright and other members of *homo superior* found a utopian society on a South Sea island. They kill themselves rather than run the risk of destroying *homo sapiens*; or perhaps—the ending is designedly ambiguous—they use the explosive destruction of their island as a cover to slip away into a higher dimension. A pendant to this serious and considered work is *Sirius: a Fantasy of Love and Discord* (1944), written from the point of view of a super-evolved dog.

But Stapledon's masterpiece is *Star Maker* (1937), a novel for which even the most extravagant superlatives are insufficient. The events of *Last and First Men* covered several billion years; a tiny micro-fraction of the enormous timescale of this later novel. A narrator standing on an English hill projects his consciousness through the cosmos, seeking out alien life—at first humanoid in form, later more radically different—with which he psychically combines. There are no spacecraft involved; travel is by the pure will of the narrator, but nevertheless the reader never doubts the premise (unlike the more usually religious 'spiritual voyages', discussed above) because it relates at all points minutely and thoroughly to the book's overarching thesis that behind the veil of reality is nothing but will itself.

One joy of the book is the controlled fountaining of Stapledon's invention, myriad alien forms of life and society described in compelling detail. Moreover, despite lacking a conventional narrative the book acquires a hefty momentum as it moves closer and closer to the ultimate revelation of the nature of the Star Maker. Billennia are traversed; the very stars are revealed as partaking in consciousness; the whole of time and space is encompassed, the whole universe—and then revealed as merely an infinitesimal fraction of the complete sheaf of hyper universes.

Viewed from this vantage point, not quite *sub specie aeternitatis* but as close as makes no odds, the Modernist animadversion against machines seems rather pettifogging and irrelevant. Except, of course, anti-machinist Modernists were not opposed to machines as such (machines like beds, pens, pots and pans), but against *techné*, against sophistry and artificiality, and in favour of a notional authenticity. In this regard Stapledon is a profoundly imaginative epistemological author. The purpose of his books is not to show off inventiveness for its own sake (although he was a marvellously, brilliantly inventive writer) but to dramatise the ongoing accumulation of knowledge. And the novel builds towards a tremendous, terrifying climax when knowledge becomes almost overwhelming. The *Star Maker* has been, we discover, creating an endless series of cosmoi of which ours is only one, and not a very successful one. Most of these He (She? It?) has discarded, as ours is about to be discarded in favour of another one. With 'anguish and horror, and yet with

acquiescence, even with praise' the narrator comprehends the inhuman chill of the Star Maker's consciousness:

Here was no pity, no proffer of salvation, no kindly aid. Or here was all pity and all love, but mastered by a frosty ecstasy. Our broken lives, our loves, our follies, our betrayals, our forlorn and gallant defences, were one and all calmly anatomized and assessed, and placed. [Stapledon, *Star Maker*, 248]

The Star Maker is not wholly bereft of sympathy, or even love; but neither quality is absolute: 'contemplation was ... the cold, clear, crystal ecstasy of contemplation'. What this ecstasy actually is (the word, from *ec-stasis*, means a standing outside of oneself) is not clear, unless it is the multiple universes of the Star Maker's creation itself—our reality and all other realities. Why has the Star Maker created these things? We do not know, except that (we are told) 'a creative urge possessed him' [Stapledon, *Star Maker*, 242]. In its radical uncertainty, as much as its bold attempt to reconfigure the metaphysics of creation, ethics and eschatology as a properly cosmological business, *Star Maker* is an unprecedented and unsurpassed masterpiece.

HIGH MODERNISM: PROUST AND RICHARDSON

The place of, so called, High Modernism in the history of science fiction is complicated by the status these writers have assumed in university courses and academic narratives about 20th-century literary culture more broadly, and the comparatively low esteem in which SF is held by such institutions. H G Wells and Henry James were good friends, or at least they were until Wells' inserted painfully accurate parodies of the Jamesian manner into his comic-satirical novel *Boon* (1915) and a breach opened up between them. Each was well aware that they wrote very different sorts of novels: James the High Modernist who believed in the aesthetic primacy and unity of the work of art; Wells the populist whose aesthetic was fundamentally journalistic; James the interiorist and stylist; Wells the exterior artist whose prose was placed in the service of the story and the ideas in the story. It's dangerously easy to overstate this binary, of course, but it is fair to say that for the most part there is a consensus in the circles of academic English Literature that James 'won' this particular literary battle, and for a long time it was the Jamesian paradigm that governed the critical sense of literary value. Roger Luckhurst's polemical insistence that actually victory belonged to Wells and his heirs takes a longer view. Still, the tension between high culture and popular art, or 'The Pulp', is only one dimension of the dynamic of SF as it grows in cultural significance through the century.

Take two examples of the highest of High Modernist literature: Marcel Proust's *A la Recherche du Temps Perdu* (seven volumes, 1913–27); and Dorothy Richardson's *Pilgrimage* (13 volumes, 1913–67). Both are very long novels designedly about not very much, or more precisely novels that take the intricacies and intermittences of ordinary and even boring day-to-day life

as their matter, and excavate that topic in richly detailed, experimental prose. Both are novels that draw deeply on the autobiographical experience of their authors, and each tells the overarching story of their protagonists (Marcel in *A la recherche*, Miriam Henderson in *Pilgrimage*) slowly becoming writers and writing the works that tell the story of that process. Both, in other words, seem to be and are often taken as works at the far end of the scale from science fiction.

And yet Proust's great novel is, whatever else it is, a story about time-travel, just as is Wells' *Time Machine*. Proust, of course, is interested in the past where Wells is fascinated by the future; but the fact that the former actualises his time travel by eating a madeleine pastry whilst the latter actualises it via an imaginary machine matters less than people sometimes think. At least, it distorts the specificity of Proust's *Recherche* to suggest that it simply 'parses remembering'. On the contrary, it tries textually to embody and excavate time *as* a dimension, and to externalise the process of time as an active component of the cosmos. At the end of the last volume, *Le Temps retrouvé* (1927) Marcel, attending a party, is struck by how old his friends have gotten. The narrator experiences a strange perception of the people around him, as if their endurance through time has turned them into mutants whose legs have become living stilts: 'comme si les hommes étaient juchés sur de vivantes échasses grandissant sans cesse, parfois plus hautes que des clochers, finissant par leur rendre la marche difficile et périlleuse, et d'où tout d'un coup ils tombent [as if these men were all perched upon stilts of living flesh, which were continuing to grow, lifting them to the height of belltowers, until walking itself becomes difficult, dangerous and, from where, suddenly, they fall].' [Proust, *Temps retrouvé*, 432]. Naturally there's a polemical element in my appropriation of this book 'for' SF. Nonetheless, I would suggest that these rather compelling monsters, like the differently framed but equally compelling monsters with which Wells populates his terminal beach, are the stuff of a radically science fictional mobilisation of human corporeality for the purposes of apprehending a new conception of time as a dimension. In a nutshell, I suppose, we could say that Proust depends his image from an 'it was as if' ('*comme si*'), where Wells moves more directly into an 'it was'. But these two textual strategies are not so far apart.

Richardson's *Pilgrimage* is, in a way, even more interesting, because its textual strategies are so carefully focussed on rendering the richness of *female* subjectivity through the sheer banality of what was female lived experience for most women, for most of this century. Richardson's protagonist teaches in a girls' school in Germany for a while; then at another school in North London; then works as a dentist's receptionist at £1 a week. The 'content' of the novel is always mundane, with Miriam's work environment and her free evenings and weekends meticulously documented: the friends she sees; the lectures she attends; the bicycle rides she takes. Nothing, we might think, could be further from rocket ships and ray guns. And yet this slow, careful recreation of a woman's experience of life is as engaged with what were, in the early decades of the century, new theories of spatiality as Proust is with temporality. Indeed, both

Henry James and H G Wells (the latter under the rather marvellous name Hypo Wilson) are characters in the novel. Miriam even has a love affair with the latter. In an interview with *The Little Review*, Richardson was asked, 'what should you most like to do, to know, to be?' Her answers are both illuminating for what *Pilgrimage* as a novel is about and as a broader statement of novelistic principle:

To do: build a cottage on a cliff.

To know: how to be perfectly in two places at once.

To be: member of a world association for broadcasting the goings-on of metaphors. [quoted in Bronfen, 1]

Not a terminal beach, but the more domestically comfortable cliffside cottage. Not a world governing cabal of scientist supermen, guaranteeing the rational principles of a Wellsian utopia, but the charming sounding 'world association for broadcasting the goings-on of metaphors'. And if, as Bronfen argues, *Pilgrimage* takes as 'thematic leitmotif' the desire to be perfectly in two places at once, it does so in ways evidently unlike the matter transportation, clones and uncanny quantum doubling typical of SF. And yet the crucial thing is the way new spatialities reconfigure human perceptions of space, and the desire to find a textual means of apprehending that. Not in terms of content, then, but in terms of form, of its strategies of concept, this is SF, separated by the thinnest of membranes from 'actual', or recognised, science fiction by the prophylactic of 'as if' instead of 'as'. And of course, the structure and process of metaphor is exactly the architectonics of SF. Speaking for myself, I'd be happy if the professional organisation for SF critics and reviewers were formed under the title world association for broadcasting the goings-on of metaphors.

We appear to have come a long way from questions of fascisms, and it would be monstrous indeed to align Proust or Richardson with the political movements that came to have so baleful an influence on 1930s and 1940s world life. They were not (unlike, say, Pound and Wyndham Lewis) specifically affiliated with such politics. Nor was either writer notably anti-machine: Proust's book is fascinated by telephones and dwells on the 'sublime appearance' of an aeroplane in flight; Richardson uses cinematic forms and structures in her novel. Nevertheless, there is something here. One way of putting it might be to say that (as it were, in the tradition of James) the High Modernists wrote the impact of new technologies inward, into the individual body and therefore into individual subjectivity. Both *Recherche* and *Pilgrimage* are totalising novels, but what they totalise is the individual's subjectivity. Other writers (working, as it were, in the tradition of Wells) tended to project their totalising visions outwards, onto whole social groups, or indeed onto society as a whole. Critic Sara Danius takes it as axiomatic that 'a certain logic of technologization is inherent in high-modernism aesthetics' [Danius, 7]; and indeed she treats the supposed 'antitechnological bias' of Modernism as a 'myth'. But she sees the locus of High Modernist fascinations as mediating the somatic and perceptual realms, as, in other words, a matter of reconfiguring individual subjectivity,

such that Modernism tracks 'the ever closer relation between the sensuous and the technological' [Danius, 194]. The danger is that the core subjectivity of these Modernist experiments becomes dissociated from its social world, even as that world is delineated (in *Pilgrimage*, in *Ulysses*) with ever more specific detail. The shaping ideological parameters of actual fascism become occluded.

CONCLUSION

It may be that what I identify as the saving grace of the Wellsian exteriorised mode is, actually, its relative *crudeness* of approach. Richardson's anatomy of the gendered sociospace of the early decades of the century is extraordinarily nuanced, to the point almost of opacity. Her near contemporary Katherine Burdekin takes a different strategy in addressing the problematic of gender in 20th-century society. *Proud Man* (1934) a novel published initially under the male pseudonym Murray Constantine, is narrated by a hermaphroditic time traveller from the far future visiting 1930s Britain. This gives Burdekin plenty of scope for a sometimes heavy handed critique of the idiocies of contemporary life. Her narrator tends to refer to us as 'subhumans' because of the way we allow racial and gender prejudice to blight existence.

One of the major differences between sub-humans and human beings, beside the difference between a half-conscious being with a split mind and a fully conscious being with a whole mind, and perhaps arising out of that difference, is caused by the subhuman concept of privilege. It is not very possible to explain privilege in any human way, as it is not a human thing. ... [But] they believe that some sub-humans are, by reason of the colour of their skins, or their rearing, or their sex, better and more worthy than other subhumans of different colour, class and sex. [Burdekin, *Proud Man*, 17]

That this is not subtle does not detract from its truth, and by adding directness to its message it, in at least one way, enhances it. Not that *Proud Man* is without its own blind spots. (Do we really think that gender difference provokes *all* social inequality? Would a traveller from a future in which such gender difference had been eliminated really be so exercised over the relative status of different bands *within* a species they explicitly consider overall 'subhuman'? Are we liable to become exercised over the relative social status of male and female rats or scorpions?) But this is only to say that the vehicle for Burdekin's vehicle is not as seamlessly integrated into the logic of her own world-building as might be. This is one reason why her later novel *Swastika Night* (1937) works so much better. Seven hundred years after Hitler, 'the Nazi empire extends over the whole of Europe and of Africa ... And for centuries civilisation has been dying'. Burdekin's pre-war story reads as horribly prescient, and its feminist emphasis (women are reduced to the status of breeding stock, and Hitler is worshipped as Jupiter the Thunderer) provides a critique of fascism as focussed as it is valid. The novel is also aware of the dangers of using

SF speculation merely as wish-fulfilment. She resists the temptation to write her female characters as oppressed but brave heroines; the relentless misery of their environments have created a sex as timid and ignorant as the animals to which the dominant ideology compares them; and whilst not all of Burdekin's male characters are equally vile, not a one of them is untouched by the malign shaping force of the world in which they have grown up.

Although not strictly an alternate history (after all, in 1937 there was a genuine risk Burdekin's imaginary future could come true), *Swastika Night* nevertheless stands at the head of the prolific sub-genre of counterfactuals known as 'Hitler Wins'. Conceivably one reason why Hitler has drawn so many SF writers into the malign gravity of his posterity is that there *is* something Hitlerian in the manifold power-fantasies of a great deal of 20th-century SF. US writer Norman Spinrad understands this. His alternate history *The Iron Dream* (1972) imagines Hitler becoming a SF illustrator and novelist rather than a dictator, pouring his fantasies into the sorts of novels (the bulk of the book is given over to the text of a novel-within-the-novel called *Lord of the Swastika*) with which readers of pulp SF are only too familiar. Spinrad offended many in the SF community with the book's implicit accusation that SF is in some sense complicit in Fascism, but Caliban has never liked looking at himself in the mirror. Spinrad's satire is spot-on nevertheless. Just as High Modernism was often beguiled by the elation of a Nietzschean will, so pulp fiction sometimes articulated a similar, if simplified, intoxication.

Let Adolf Hitler transport you to a far-future Earth, where only FERIC JAGGAR and his mighty weapon, the Steel Commander, stand between the remnants of true humanity and annihilation at the hands of the totally evil Dominators and the mindless mutant hordes they completely control. *Lord of the Swastika* is recognised as the most vivid and popular of Hitler's science fiction novels by fans the world over, who honoured it with a Hugo as Best Science-Fiction Novel of 1954. [Spinrad, *Iron*, 7]

Spinrad's *fortissimo* pastiche has less to do with the textual strategies of the *avant garde* than do the other texts mentioned in this chapter. It depends on the mixture of affection and disdain contemporary readers feel for the world of pulp SF—the subject of the chapter that follows. What these pulp novels can do, in a way more sensitively interiorised High Modernist texts cannot, is own the fascist implications of their own heritage. One thing is hard to deny. Fascist politics, which so dominated the first half of the century, were predicated upon the myth of a materialised, politically embedded saviour figure, and that is a trope that goes right to the heart of science fiction.

NOTES

1. He closes his essay by pointing to what he sees as fascistic revenants still shaping the work of writers who explicitly self-identify as progressive and liberal: 'Yet still, even within the work of major contemporary SF authors who announce their commitment to progressive, anti-imperialist causes, we can find non-ironic versions of the old pulp tropes—and, consequently, echoes of the old pulp politics. A towering, charismatic genius struggles to inspire the downtrodden inhabitants of a "degraded" and decadent society, all while fighting against a fanatical cult that is spreading its influence throughout the population (Kim Stanley Robinson's *The Memory of Whiteness* [1985]); a "gifted" hero fights a corrupt, alien culture, eventually concluding that extremism and violence in the service of a superior society is no vice (Joanna Russ' *The Two of Them* [1986]); a man of almost divine skill and ability is recruited—by an "advanced" and morally superior culture—to outwit and overthrow a rival, "barbaric," and "catastrophically bad" alien society that has been making incursions into their territory (Iain M. Banks' *The Player of Games* [1988]); or, finally, a special, gifted individual awakens to the presence of an alien race of mind-controllers who are able to brainwash a decadent Earth population—until he resolves to lead his people and reclaim the old ways (LeGuin's *City of Illusions* [1967])' [Santesso, 157].
2. 'Historians of ideas usually attribute the dream of a perfect society to the philosophers and jurists of the 18th century; but there was also a military dream of society; its fundamental reference was not to a state of nature, but to the meticulously subordinated cogs of a machine, not to primal social contract, but to permanent coercions' [Foucault, *Discipline and Punish*, 169].

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The Early 20th Century, 2: The Pulps

The previous chapter argued that early 20th-century literary Modernism, fascinated by the cultural discourse of science, and therefore productive of a large amount of SF, tended to dramatise scientific and technical developments as a negative *techné* rather than an open-ended *episteme*. But at the same time as self-consciously elitist Modernists were yearning after a mystical shibboleth that may or may not have been inscribed with the legend ‘fascism’, a wholly new mode of literature was flourishing vigorously; one that found in technologies a liberating epistemological will-to-power.

The creation of a mass literary culture was tied to a number of social and cultural changes we can date from the end of the 19th century. In Britain, for instance, the 1870 Education Act enormously widened levels of popular literacy, and created a market for a rapidly expanding number of popular newspaper, magazine and book titles. In France the Jules Ferry Laws mandating secondary education were passed in 1882. Matters changed more gradually in the USA although, by 1910, 72 per cent of American children were obliged by the laws of their states to attend school until the age of 14. Book publishing in particular saw profound changes. Earlier in the 19th century the dominant form of book publication had been expensive three-volume hardback editions, known as triple deckers. Few individuals could afford to buy these books, and most readers borrowed them from lending libraries. Some ‘cheap’ editions of more popular writers such as Walter Scott or Charles Dickens were issued, but in general books were very expensive items, and the number of new titles appearing in any one year could be counted in the hundreds. As Peter Keating’s detailed account *The Haunted Study: A Social History of the English Novel 1875–1914* (1991) shows, this world changed very rapidly under the pressures of increased demand from less well-off readers. Triple-deckers went wholly out of fashion, and in their place books were published either as one-volume hardbacks or else, increasingly throughout the 20th century, as cheaper paperback titles.

These latter, as they appeared in the 19th century, are often called dime novels by historians of publishing, and they were originally more akin to magazines than to hardback mainstream novels. They can, with hindsight, be appropriated into the broader history of what specialists call the pulps, cheap magazine formats for SF, Western, crime or romantic adventures. Edward S Ellis wrote several hundred dime novels, mostly in the idiom of Western adventures, and his *The Steam Man of the Prairies* (1868) took this genre in a odd new direction with the introduction of the title device, a steam-engine in the shape of a giant man that jogged about the Midwest (but had no reverse gear) carrying its passengers into various adventures. This idea was plagiarised by more than one author (Fig. 10.1).

Harold Cohen, a prolific hack-writer, appropriated the device for *Frank Reade and his Steam Man of the Plains* (1876), following the success of this with a number of other adventures centred on the fictional Frank Reade, many involving steam-driven technology. In 1882 the original hero was replaced by his son, Frank Reade Jr, and in 1892 a pulp magazine began publication of 'The Frank Reade Library'. This ran to nearly two hundred weekly (later biweekly) issues, at first reprinting the various Frank Reade stories published in the 1880s, and later commissioning new work. Many critics see 'The Frank Reade Library' as the archetypal pulp. Everett F Bleiler and John Clute describe it as 'the earliest serial publication devoted solely to SF, with more issues than all of Hugo Gernsback's magazines put together' [Clute and Nicholls, 450]. The mix of adventure, energy and can-do heroics has an undeniable kinetic fizz about it, although the racism, sadism, casual slaughters and the lazy stereotyping of world and premise make many of the stories unpalatable reading today. But the crucial thing about Frank Reade, for our purposes, is that he mediates wish-fulfilment. His various devices express not a disinterested appreciation of the possibilities of technology, but his own will-to-power. Mike Ashley dates the 'decline' of the dime novel to the turn of the century, noting that it would 'survive until the First World War' at which point 'it gave way to the immense popularity of the pulp magazine' [Ashley, 21].

PULPS

Pulp is a word used to denote a particular type of story printed in a series of niche-marketed magazines. The stories were written by prolific hack-writers (so, not too expensive for editors to buy) and printed on cheap paper manufactured from treated wood pulp—whence the name—rather than more expensive traditional papers. The point was to keep costs low, to sell cheaply and in bulk, and thereby to make money. By the 1920s there were pulp magazines catering to a variety of genre tastes, including general adventure pulps (often aimed at a more juvenile market), crime pulps, Western pulps, pulps specialising in romantic love stories and non-fiction pulps.¹ The essence of pulp SF is not its magazine format, but its cheapness. That said, for much of the early part of the 20th century it was the periodical form that was most affordable. The

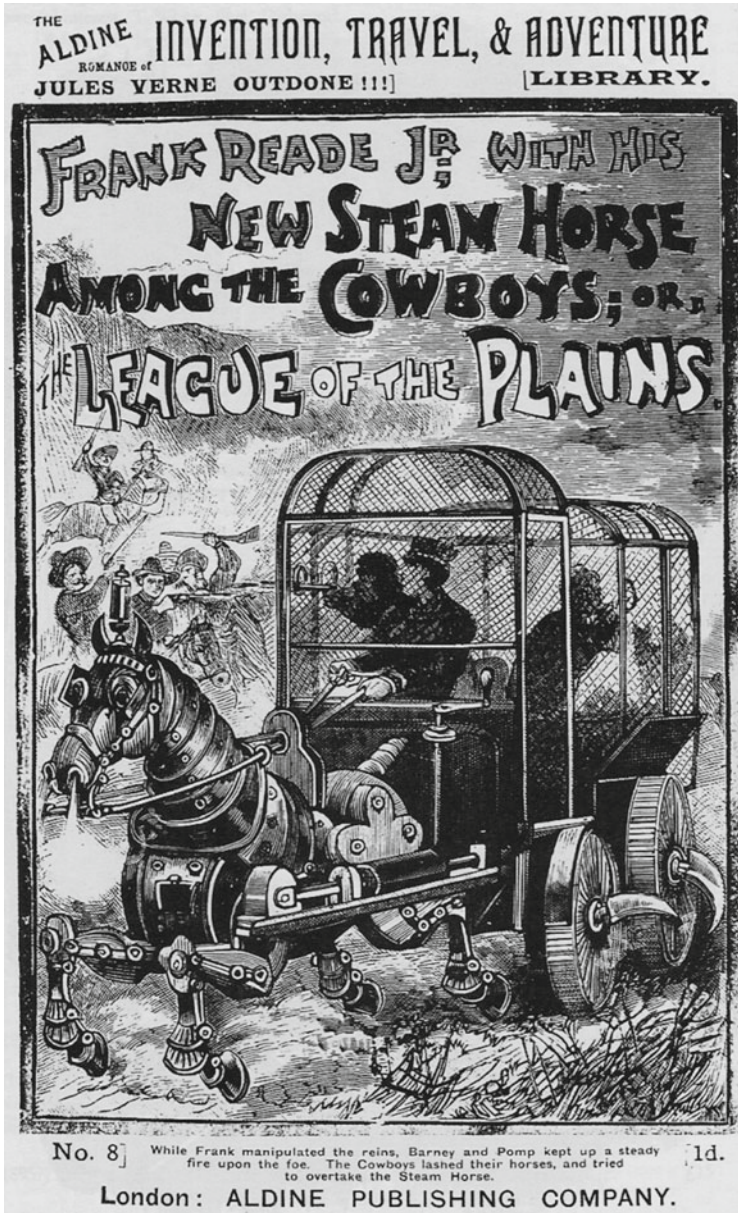


Fig. 10.1 'Jules Verne Outdone!!!' The anonymously authored *New Steam Horse* (1894)

pulp idiom, and its huge popularity, remade SF. Within this widely distributed form stories were published that appealed to an increasingly socially diverse readership. The emphasis was on eventful narrative, strong characters, a binary ethical code of good and evil and (especially in SF pulps) exotic and wonderful locales.

The first pulp is often identified as *The Argosy*, a US magazine published from 1886 onward that carried a variety of fiction, including SF (the title was taken from a rather different British magazine that had been published since 1865). British magazines such as *The Strand Magazine* (monthly from 1891 to 1950) and *Pearson's Magazine* (monthly from 1895 to 1939) carried a great deal of SF between the 1890s and the first decades of the new century. *The Strand* serialised Wells' *First Men in the Moon* (1900–01) and Conan Doyle's *The Lost World* (1912); *Pearson's* ran Wells' *War of the Worlds* (1897) and much else. As important as the stories was the fact that these magazines carried many pictures, black-and-white engravings, and later colour pictures, to illustrate the story.

How to explain the strange appeal that pulp SF continues to hold over the genre? Its limitations are too obvious and too undeniable to need much elucidation. It was, by and large, a puerile and aesthetically limited literature, aimed at the lowest denominator, often ideologically reactionary, rarely more than a means of passing the time, a literature of distraction. Yet there is something more. Flaubert once said that he liked tinsel better than silver because it possessed all the qualities of silver plus one more—pathos. As the number of 20th-century writers who wrote self-consciously and sometimes self-congratulatory 'highbrow' literature increased, so did the breadth and vigour of those literary traditions whose rationale was purely popular. Of all pulps, SF pulps were the most tinselly; partly in the sense that their content was more dazzling, starry, most likely to lift its readers' eyes, metaphorically, to the brilliances above us; partly also in the sense that they were *aware* and even revelled in their own cheapness and kitsch (I use the word at its most positive). Crime pulps, liquorish-literature, established a narrowly conceived but pungent mood; Western pulps were a kind of candy cigarette literature, inviting its readers into a sweetened miniature version of Malboro Country; romance or love-story pulps were more obviously fixated on wish-fulfilment fantasy, and had the highest sugar content; but SF pulps had the greatest impact upon a major literary tradition (SF proper), its very crudeness correlating often to an aesthetically significant vigour, the luminous fire as well as the noxious exhaust fumes of a genre powering up to escape velocity.

There is another significance of the pulp era, linked to its leading editorial figure Hugo Gernsback, after which it is sometimes called The Gernsback Era. Gernsback hoped to found a new literature on strictly scientific-didactic terms; to reshape SF by purging all mystical or magical elements from the science-spiritualism dialectic that had initially formed it. But, despite the fondness with which SF communities regarded him, to the point of naming the genre's blue riband award the Hugos, Gernsback failed in this project. By 1930, as Mike

Ashley notes, Gernsback had been forced to change the terms of his project, changing the name of the magazine *Science Wonder Stories* to *Wonder Stories* on the grounds that ‘the word “Science” has tended to retard the progress of the magazine’, a position ‘that would have been anathema to Gernsback five years earlier’ [Ashley, 71]. His audiences wanted more than just science. It is probably true, as Gary Westfahl argues, that ‘Gernsback made it possible to believe in science fiction; and that belief, more than the literary quality of his initial offerings, enabled his idea of a genre to grow’ [Westfahl, 27], but the genre that he touched developed rather differently to the one he anticipated in his 1926 manifesto for the genre. More recent research has tended to downplay Gernsback’s influence. Talking of the 1920s and 1930s, Jess Nevins demonstrates that ‘roughly 60% of all science fiction during this period was published in the general pulps rather than the SF pulps, by editors and publishers who paid little attention to what Gernsback was doing’ [Nevin, 97]. He adds:

Contra Peter Nicholls’ claim that ‘magazine SF was at a low ebb’ in the 1930s, the amount of science fiction published in the general pulps continued to rise during this period, as it had since 1919. The story of pulp SF during the 1926–36 period is not one of Gernsbackian science fiction, but of two communities: the SF pulps and the general pulps. The distance between the two was great. The SF pulps paid less than the pulps of other genres, appeared less frequently and were for the most part Gernsbackian productions ... Moreover Gernsback’s dictates for science fiction in his pulps—that it must be both instructive and promote research and experimentation—were restrictive to writers: the editors of the pulps of other genres did not impose their vision on their writers so overtly. Gernsback’s definition of science fiction ... ignored the thriving science fiction that happened to appear in the general pulps. [Nevin, 97]

For many critics and fans, though not for this present study, Gernsback remains what US critic Sam Moskowitz called him, ‘the Father of Science Fiction’. Born in Luxembourg, he came to the USA in 1903 and enthusiastically embraced the possibilities of his new homeland. His interest in electricity, and the invention of electrical devices, led him into a number of business ventures, one of which, a magazine called *Modern Electrics*, was founded in 1908. *Modern Electrics* carried, amongst other things, SF stories, not least amongst them Gernsback’s own novel *Ralph 124C 41+ : A Romance of the Year 2660* (serialised 1911–12)—the numerical title is a sort of rebus for the phrase ‘one to foresee for “plus-one” (that is to say) many’. This digressive yarn details the wonderful machines of the 27th century, most of which, as we might expect from the founder of *Modern Electrics*, are electrical in one way or another. It is a deeply clumsy novel, poorly structured, with a limply unengaging narrative that is clogged with examples of what would later be called infodumps (expository technical and scientific passages inserted into the text regardless of fit). It has its defenders, however; less on aesthetic grounds, and more because it establishes many of the principles that Gernsback would later codify as definitive of science fiction as a genre.²

It was as an editor, not a writer, that Gernsback made his major contribution to the genre. His magazines often contained SF stories and the August 1923 edition of *Science and Invention* was wholly given over to them. Convinced of the demand for such outlets, Gernsback announced in 1924 that he planned to found a magazine dedicated to SF stories, to be called 'Scientifiction' (we may be grateful Gernsback's ungainly neologism, with its choppy rocking-horse rhythm, did not catch on). In the event, the first dedicated SF magazine did not appear until April 1926, and then went on sale under the title *Amazing Stories: the Magazine of Scientifiction*. The suggestion that the primary function of the stories in this magazine would be to 'amaze' their readers seems interestingly at odds with Gernsback's often expressed view that SF should be as much a didactic as an entertaining mode. Although he always stressed the importance of the latter quality, it is the prescriptive presence of the former that most strikes readers. In his editorial 'A New Sort of Magazine', from the first issue of *Amazing Stories*, he insisted that:

Not only do these amazing tales make tremendously interesting reading—they are also always instructive. They supply knowledge that we might not otherwise obtain—and they supply it in a very palatable form. For the best of these modern writers of scientifiction have the knack of imparting knowledge and even inspiration without once making us aware that we are being taught. [Ashley, 50]

Brian Aldiss thinks this 'instructive' imperative acted as a straightjacket upon the SF imagination, 'introducing a deadening literalism into the fiction' [Aldiss, 204]. It is certainly hard to deny that the fiction published in *Amazing*, and in Gernsback's subsequent SF imprints, tended towards the non-Feyerbandian side of the science fiction dialectic. It was an early form of hard SF, and influenced one major manifestation of the genre.

Gary Westfahl sees Gernsback as not only the inventor but the first theorist and historian of SF, a man whose work 'launched, anticipated and encapsulated the entire genre' [Westfahl, 135]. John Clute, on the other hand, has a low opinion of 'the dire weird farcical philistine Hugo Gernsback'. He did 'one good thing' (founding *Amazing*), but 'over and above that ... Gernsback's influence was disastrous':

The personality which bestrid the tiny not-yet-field for almost a decade was humourless, didactic, pedestrian, leaden, fatally prone to the advocacy of rotten science ... SF between 1926 and 1936 was, as a consequence, humourless, didactic, pedestrian, leaden and fatally prone to the advocacy of rotten science [Clute, *Scores*, 221–22]

Clute is, of course, deliberately overstating matters: but he is by no means alone in his animadversion (Brian Aldiss: 'Gernsback was arguably one of the worst disasters ever to hit the SF field'; Aldiss, 82). There is a sense in which these and likeminded rabbit-punches aimed at Gernsback's metaphorical chin

are motivated by the conviction that he was responsible for the deplorable juvenalisation of a genre that ought to have grown into a profound, philosophical and above all adult mode of art (similarly heated denunciations have been occasioned by the 1977 film *Star Wars*). But this is to misunderstand both the genre itself and the force of its development into a mass cultural phenomenon in the 20th century.

In 1929 Gernsback became bankrupt, very possibly as a result of the machinations of US publisher Bernarr Macfadden, who bought up *Amazing*. Gernsback's response was to found not one but four new SF magazines: *Air Wonder Stories* and *Science Wonder Stories* were founded in 1929 and merged a year later into *Wonder Stories* (issued monthly 1930–36, when it was sold, and the title changed to *Thrilling Wonder Stories*); two other titles *Science Wonder Quarterly* and *Scientific Detective Monthly* did not last more than a year. What he discovered was that the public, though interested in and willing to be dazzled by Super-Science, also wanted a leavening of a less hardline (we might call it a less materialist) approach. Gernsback's success encouraged the creation of a large number of other magazines, many of which folded after a short time. Most notable amongst these was *Astounding Stories of Super-Science* (founded in 1930; from 1933 onwards the title was simply *Astounding Stories*). *Astounding* was to become one of the most important Golden Age SF publications, in part because it began its life by downplaying Gernsback's insistence on didactic science, instead featuring stories in which an emphasis on high adventure, excitement and exoticism was given priority over science.

What can get forgotten in the focus on technological and scientific novums is that the ground of the pulps' appeal was fundamentally *affective*. These texts are about generating certain feelings, with a particular emphasis on excitement, wonder, sexual arousal and self-satisfaction, mediating the emotional response of their readers *through* technology and science. It is precisely because they are so invested in particular affects that they are sometimes read as crude; but it helps us get to the heart of their widespread popular appeal. What the pulps embody, in fact, is a deep attachment to the aesthetics of Sensibility, and more specifically a masculinised (sometimes hyper-masculinised) version of that venerable 18th-century mode. The best study of Sensibility as a literary mode is probably Jerome McGann's *The Poetics of Sensibility* (1996) and, although he deals only with Romanticism and doesn't mention SF at all, there is much for the student of science fiction to learn from that work. As McGann notes, whilst 'high culture' considers these traditions 'something of an embarrassment', nonetheless by structuring themselves according to an affective rather than classical or ethical mode these new texts effected a revealing 'revolution' in literature. Of the parameters of that revolution as McGann explores them, only one ('tears') don't really apply to pulp SF. Otherwise, 'the disordering of the senses' [McGann, 13], the way 'the activity of thought can be seen as the object of thought' [23]—especially, in SF, via the literalisation of metaphor, necessarily the objectification of the logic of thought—and the establishment on new grounds of 'a poetry of knowledge' [33]: all relate directly to the appeal of the pulps.

THE MAGAZINE ERA

So influential was the magazine outlet as a shaping force in the production of SF during the middle of the century that Brian Attebery goes so far as to label the whole 'period of SF history from 1926 to 1960' the 'Magazine Era' [Attebery, 32]. A mere list of magazine titles gives some sense of the fecundity and correlative popularity of this mode of prose SF, and gives a flavour of the huckster-chic that informed the choice of magazine names—the more attention-grabbing and exclamatory the better.³ The later development of SF magazine publishing has, mostly, seen the abandonment of this Astonishing! Astounding! Fantastic! idiom in favour of a modish obliqueness (titles such as *Analog*, *Omni*, *Interzone* and so on), but there is a charming appositeness in the original titular gush.

Through the 1920s and 1930s, and continuing with slightly less commercial vigour into the 1940s and 1950s, scores of US magazines provided individual stories or serials of high adventure in space to an eager public. The two most significant authors to come to prominence through magazines in this period were Edgar Rice Burroughs and E E 'Doc' Smith, who are treated in a little more detail below. But from amongst the hundreds of writers and many thousands of novels and stories a number are especially noteworthy. Jack Williamson published prolifically in various pulps. *The Legion of Space* (serialised in *Astounding* 1934 and followed by several sequels) is an enjoyably full-throated space opera in which hero John Ulnar and beautiful Aladoree Anthar battle the monstrous alien Medusae. In the unconnected *The Legion of Time* (serialised in *Astounding* 1938) Williamson achieved something more lasting, an ingenious time-travel concept in which alternate futures fight with one another down the timelines to try and ensure their own survival. Of the many hundreds of novels Williamson has written (I know of no complete bibliography of his work) most adapt themselves to the demands of his audiences for narrative and spectacle. For this he is sometimes deprecated by critics. Gary Westfahl praises Williamson's story 'The Prince of Space' (*Amazing* 1931) because it 'astonishingly depicts the first true space habitat in science fiction—an immense cylinder with parks and houses on its inner surface' only to downgrade the story as a whole for using this piece of hardware merely as the background to a story about a space pirate who fights 'a Martian race of vampire plants' [Westfahl, 153]. The urge to pick selectively amongst the vast storehouse of pulp SF for nuggets that can be judged by later criteria of interest or excellence is indeed hard to resist; but the point of pulps is precisely the raw excitement of the vampire plants rather than the occasional anticipation of a more sober style of 'engineering feat' SF.

Still, hindsight can be a blindspot for fans dedicated to visions of futurity, and those pulp authors with the greatest currency today are often the ones with the least in common with the broader currents of their day. Two examples. Stanley Weinbaum published relatively little, although his portrait of human spacemen encountering well-realised anarchist Martians ('A Martian Odyssey', *Wonder*

Stories 1934) is regarded as a classic of the genre. A human astronaut crashes on Mars and, during his trek to safety, befriends an orniform Martian called Tweel. The story's reputation is grounded in Weinbaum's ability to portray this latter character as 'actually' alien enough to be estranging, without sacrificing the entity's likeability. Tweel engages the reader, and through its portrayal she is given a glimpse of a systematically worked-through, radically non-human society. The piece suffers from having to break new ground in a way that was to become thoroughly standard for SF, and so reads as rather stale today. More to the point, Weinbaum's tone—urbane, understated, flat—and the low-key way he pitches the various adventures the two have is markedly unlike the fruitier, more garish and colourful aesthetic of pulps. Then there is Catherine Moore (her writing name of C L Moore was designed to veil her gender in the predominantly male world of early century SF; she also used another mannish pseudonym, Lawrence O'Donnell). Moore published her early work in 1930s pulps, anchoring her sometimes dream-like fluency with a distinctly achieved emotional and sensual vividness. In her story 'The Black God's Kiss' (published in *Weird Tales*, 1934) a female warrior goes down into Hell to retrieve a deadly weapon, whose surprise nature is actually telegraphed in the tale's title. The story stands out for the compelling way it parlays its sword-and-sorcery idiom to a more materialist sublime reminiscent of the grandeur of the best hollow-Earth tradition:

All about her, as suddenly as the awakening from a dream, the nothingness had opened out into undreamed-of distances. She stood high on a hilltop under a sky spangled with strange stars ... The things that built the tunnel could not have been human. She had no right to expect men here. She was a little stunned by finding open sky so far underground, though she was intelligent enough to realize that however she had come, she was not underground now. [Moore, 29]

The later 'No Woman Born' (1944) concerns a beautiful actress who dies and is brought back to life in a robotic body. It achieves miracles of real pathos, as the protagonist returns to the stage to try and stem her inevitable sense of loss of her *echt* humanity. But, to repeat myself, such emotional nuance was not the currency of the vast majority of pulp stories. More typical are exteriorised action-adventures, gnashingly described conflicts with future-humans or alien invaders, such as this climactic battle from Victor Rousseau's 'The Messiah of the Cylinder' (serialised in *Everybody's Magazine* in 1917 with, incidentally, the first use in fiction of the term ray gun):

Streaks of light, pitifully thin, flashed from their Ray rods, and, with exultant shouts, the Guard sprang forward to meet them. They were dragging lighter Ray guns behind them. For an instant it seemed as if the revolutionists would scale the walls before the heavy Ray artillery could be reaimed at them. The foremost files of the opposing forces clashed and surged and swayed in a rain of meteor flashes. The blackened corpses heaped the bridges, hung, toppled over, and went to swell the heaps below. [Rousseau, 294–5]

Or, from a little later, Lowell Howard Morrow's last man story 'Omega, the Man' (from *Amazing Stories*, 1933), complete with underuse of the comma and crunchingly emphatic capitalisation:

Water! Water! The insistent cry throbbed madly through his brain. At last in the lowest depression of Earth he found it in a little hollow of the rock a mere cupful of water. Like a thirst-maddened animal he thrust his lips into it and sucked it up in great gulps then licked the rock dry. IT WAS THE LAST DROP! Omega rose, his face calm and resigned ... Then he went to the airship and shot up into the blue and on around the world in a voyage of farewell. In a few hours he was back. Reverently he set the airship down on its landing place. He was through with it now. Its usefulness was gone, its great pulsing motors forever silent. [Morrow, 941]

We could call this melodrama, although that's a notoriously imprecise term. This passage does, though, indicate the nature of the affect in which these texts traded. To its marvellous machinery (for exploration or destruction) and hideous monsters we can detail two more key affective intensities in which pulps traded. One is sex, rendered almost always from a male heterosexual and objectifying perspective. The other is will, figured as being *as* important to the constitution of the hero as his well-developed musculature and access to futuristic technology. Pulp tends to interpellate a particular sort of reader: young-ish, male, randy, open to the beguiling fantasy that there might exist another world, or another time, in which he would be more of a sexual and individual success than is the case in his actual life. By mediating its erotics through the systematically extrapolated technologisation of society, these stories figure sex as thrillingly dangerous as much as they make it (judged by the sexual mores of the West though the 1920s and 1930s) magically accessible. The mental image we tend to have is of a particular sort of pulp SF illustration, perhaps a semi-naked woman being rescued from monstrous assault by the lantern-jawed space hero. This is no chimera, there are hundreds of examples of such visualisations. But pulps were as liable to represent the sexually alluring woman as a dangerous femme fatale, sometimes robotically so. In ways that the actual stories could not explicitly embroider, the erotics of pulp SF are in the business of opening a space where 'simple' wish-fulfilment can be complicated by excitingly taboo possibilities. Illustrative of the larger point I'm making is the illustration in Fig. 10.2, originally drawn to accompany Bryce Walton and Ross Rocklynne's 'Out of the Atomfire' (*Future Science Fiction* May 1951). The manifest 'content' of the image speaks to the danger in which our hero Phaon finds himself, and also to the ruthlessness of the woman, Rhea—the story tells us 'he was afraid of her. Of her sophistication, her amorality, her ruthlessness'. Yet fear is as liable to augment as damp down desire, and the *latent* content of this image is more lubricious: a Rita-Haworth-lookalike dressed in not very much, her nipples emphasised, her lips parted sensually, as she prods the man with her phallic-looking weapon into ... is that *ecstasy* on his face? It rather looks like it.



Fig. 10.2 Illustration by Gene Fawcett for Bryce Walton and Ross Rocklynne's 'Out of the Atomfire' (*Future Science Fiction*, May 1951)

All the pulps traded in more or less explicitly coded sexual fantasy. What's significant about the SF version of this is the way its more radically othered imaginary spaces, and its forceful technological possibilities, mediate this erotic desire. We might think beams of potency flashing from the hero's ray rod almost too transparent a psychological symbol. And will, which is materialised in these props and settings, has a double meaning in English at least as old as Shakespeare.

EDGAR RICE BURROUGHS

Will is central to the pulp vision of Edgar Rice Burroughs, an American ex-cavalry soldier who came late to writing, unable to pursue his military career because of a weak heart. His first publication, *Under the Moons of Mars* appeared in the small circulation *All-Story* magazine in 1912. It later appeared in book form as *A Princess of Mars* (1917), the title by which it is now known. This adventure sees the heroic man-of-action (and ex-cavalry officer) John Carter travelling to Mars by will alone:

I closed my eyes, stretched out arms towards the god of my vocation and felt myself drawn with the suddenness of thought through the trackless immensity of space. There was an instant of extreme cold and utter darkness ... I opened my eyes upon a strange and weird landscape. I knew I was on Mars. [Burroughs, *Princess*, 20]

The cosmos itself yields before the virile will of our supercompetent hero. On the red planet Carter fights his way past various alien foes: blue-skinned monsters; green-skinned warriors, immensely tall and with six limbs; and red-skinned humanoids, the erotic objectification of which is a large part of the texture of the story. Carter marries a Princess of the latter species and fathers children (despite the fact that these Martians are oviparous). The tenor of the book is fast-paced adventure with the emphasis on stylised but violent combat and elegantly alien landscapes. The title of this book's 26th chapter epitomises the trajectory of the whole, 'Through Carnage to Joy'.

It is possible to say that Burroughs simply transferred Frank Reade-style adventures from the Wild West to a more exotically rendered Martian prairie; but there is something more to his books—still in print today, still (despite an inevitably dated savour) enthralling readers. Partly it is the quality of distilled exoticism, the utter genuineness of Burroughs' portrait of Barsoom (as his Mars is known to its natives); something difficult for an author to fake, and very easy for a reader to fall for. Partly, on the other hand, it is the single-minded vision of John Carter as a cartoon-like but charismatic *übermensch*, the reinvention of the will-to-power as action hero.

A great many sequels followed, tracing the further adventures of Carter and his family, three serialised in *All-Story* [*The Gods of Mars* (1913); *The Warlord of Mars* (1913–14); *Thuvia, Maid of Mars* (1916)] and five published in other journals or as stand-alone volumes [*The Chessmen of Mars* (1922); *The Master Mind of Mars* (1927); *A Fighting Man of Mars* (1931); *Swords of Mars* (1936); *Synthetic Men of Mars* (1940)]. Two further, much weaker, tales were then serialised in *Amazing*: *Llana of Gathol* (1941) and *John Carter of Mars* (1941–3). The quality of individual instalments in this series does vary, although some are very good, and one or two are not only entertaining and exotic but something more. In particular, I've always felt that *The Chessmen of Mars* manages, perhaps

despite itself, to say some genuinely interesting things about the master-slave relationship and questions of control.

Shortly after the first of the Barsoom stories, Burroughs published the first in what was also to become a long-lived series of adventure tales, one that was to demonstrate far greater cultural penetration. This was *Tarzan of the Apes* (serialised in *All-Story* 1912), which postulates an English baby raised, Romulus and Remus like, by African apes, and growing into an idealised noble savage, as strong and ready-to-rumble as John Carter, if limited to the Earth. Burroughs went on to publish twenty-six novel-length sequels to Tarzan, and the series became even more popular than John Carter. Tarzan has incident-filled adventures all over Africa, and beyond, and encounters all sorts of wondrous creatures, from the Liliputian-like Minunians of *Tarzan and the Ant-Men* (1924) through leopard-men and lion-men to, bizarrely, a large unicorn sea-horse (in *Tarzan and the Forbidden City* 1938). For all their local colour and variety, the core of the appeal of these books is the imaginative access they provide to a heroic masculinity that is both sensually bestial *and* the embodiment of strength manifested in implacable will. In *Tarzan and the Jewels of Opar* (1918) La, the beautiful and pitiless high priestess of the Flaming God of Opar, falls instantly for the ape-man: 'The woman rushed forward and seized the ape-man's hands in hers. "Do not leave me!" she cried. "Stay, and you shall be High Priest. La loves you. Slaves shall wait upon you. Stay, Tarzan of the Apes, and let love reward you."' Tarzan's response to this tempting offer is: 'the ape-man pushed the kneeling woman aside' [Burroughs, *Tarzan*, 80]. Of course he is sexually irresistible to women; and of course he has willpower enough not to succumb to such temptation. The books are grounded in the belief that these two things exist in a very precisely determining mutual relationship.

Two further Burroughsian multi-book series have remained popular: *At the Earth's Core* (1914) was the first of six Pellucidar books, whose titular location is within a hollow Earth modelled after the theories of John Symmes; and the Venus books, charting the adventures of Earth-spaceman Carson Napier, beginning with *Pirates of Venus* (1932). More, Burroughs' huge fame encouraged imitations of his action-based heroic adventures. As Mike Ashley observes, 'Burroughsian fiction would dominate pulp science fiction for the next 40 years' and, indeed, a great many later writers were directly influenced by him, especially following extensive reprinting of his titles in cheap paperback formats in the 1960s and 1970s (Ashley thinks him 'the most influential writer in the field outside of Verne and Wells' [Ashley, 36]). Burroughs' attitude to the rubrics of science is—appropriately for a horseman—cavalier; his emphasis was on a particular sort of narrative in which a male figure proves his courage, strength and what we might as well call his will to power through hardship, endurance and, most especially, through combat. It is as a kaleidoscopic representation of the fetishisation of will (masculinised and configured in warrior terms) that Burroughs' fiction is most effective.

E E 'DOC' SMITH

Will is also central to the work of another US pulp writer of note, Edward Elmer Smith. Smith was quite correctly known as 'Doc', for he possessed a PhD in food science—his dissertation was 'The Effect of Bleaching with Oxides of Nitrogen upon the Baking Quality and Commercial Value of Wheat Flour'. Smith approached writing with a scientist's methodological ethos: oxidising the traditions of space adventure; getting his wife to help him write the otherwise overly bleached love-story elements; and always ramping up both the scale of his adventure and the excited hyperbole of his style. At any rate Smith's thundering, unsubtle space operas garnered a wide audience, some of whom later grew up to be rather ashamed of their adolescent taste in these primitively written and thinly characterised books.

Smith's first novel, *The Skylark of Space*, was written in the later 1910s, though not published for nearly two decades, when it was finally serialised in *Amazing Stories* August–October 1928. This first book in the Skylark series [the sequels are: *Skylark Three*, serialised in *Amazing* in 1930; *Skylark of Valeron*, serialised in *Astounding* from 1934 to 1935; and *Skylark DuQuesne* serialised in the postwar magazine *Worlds of If* in 1965] initiates the adventures of a clean-cut hero and his antagonist, a black-bearded villain. The book is named for the hero's spaceship, a forty-foot sphere (later, in keeping with Smith's increasingly inflating aesthetics of scale, the Skylark is rebuilt as a sphere with a diameter of a thousand miles). Flying through interstellar space Smith's plots orchestrate a variety of alien species, some good and some bad, a high-adventure cosmos of space pirates, kidnappers, law-breakers and law-upholders.

More successful than the Skylark books, and of more lasting importance, is Smith's second sprawling series, the Lensman novels (dates are of first magazine serialisation, all of which were in *Astounding* except for the first title which was serialised in *Amazing*): *Triplanetary* (1934); *Galactic Patrol* (1937–8); *Gray Lensman* (1939–40); *Second-Stage Lensman* (1941–2); *Children of the Lens* (1947–8). A later novel, *First Lensman* (1950), fits, chronologically, between the events of the first and second title in the series. The premise for these books is a caste of upstanding humans whose telepathic abilities are focussed through certain mysterious 'lenses' worn on the wrist, and who do battle with manifold baddies and forces of evil. With each new chapter in the adventure, Smith reveals that the various species and organisations of the previous novels are in fact fronts for larger, hidden forces. The Black Fleet, against which the lensmen make war, turns out to be a facet of Boskone, a galaxy-wide conspiracy of evil. Behind Boskone, it is later revealed, is the wicked Thrale-Onlonian Empire, although the ultimate source of evil in the Galaxy, the heart of the conspiracy, is finally revealed to be a hidden race of aliens from the planet Eddore. Against the wicked Eddorians, we eventually learn, is balanced the force of the equally powerful and equally mysterious but virtuous Arisians. Everything in cosmic history is revealed as having been phenomenal manifestations of the primal war between these two superphenomenal alien races. The lenses, for instance,

turn out to be quasi-magical Arisian technology. (The whole series was later published in book form between 1948 and 1954, at which time Smith revised his earlier titles to make this overarching cosmic duality more apparent.) The effectiveness of this series of staged revelations, each one apparently bringing the reader closer to the secret at the core of the cosmos, is hard to gain-say; although the books are crude, rather manic and irreducibly adolescent. Indeed, it is now routine for critics of the genre, even (or perhaps especially) male critics who read the books with enthusiasm in their youths, to rubbish Smith's writing. Russell Letson puts it well when he describes the *Skylark* and *Lensman* series as 'the literary acne of SF&F, a painful and embarrassing adolescent memory' [Letson, 1].

There have been attempts by some critics to defend Smith's excesses. Joseph Sanders, for instance, suggests that the stepped revelations and continuing heroics and battles of the series dramatise a 'moral struggle for contact/growth' [Sanders, 60]. But to posit a moral seriousness in the one-dimensional characters and relentless, if inventive, heroics of *Lensman* is surely to miss the point. The extravagance and excess is, in an important sense, the *whole* of Smith's space adventure tales. These are books that embody as well as articulate excess.

Smith's writing strives always to be emphatic and is, accordingly, almost always overwritten, fatally drawn to superlatives (particularly superlatives of size: titanic, colossal, enormous, gigantic), consistently melodramatic and gushing. 'Yet behind the awkward prose and embarrassing dialogue,' suggests Edward James, 'lurks an ability to inspire awe and wonder. Smith knew that tremendous size and power were the key to awe' [James, 47]. Certainly, the first thing that strikes a reader about Smith is his love of the large: billions of years, and of light years, are covered; Moon-sized spaceships or planet-sized 'negaspheres' (spheres of negative reality with enormous destructive capability) become involved in huge battles; empires clash; myriad alien worlds and species are encountered. Brian Aldiss nicely terms this 'the glamorous disease of giganticism', but goes on to add that there is a pasteboard quality to Smith's gigantic stage-sets, his 'banal hearty style ... conveys no visual experience and does not make his immense distances real' [Aldiss and Wingrove, 209–11].

Less sensually physical than Burroughs' adventures, the persistent appeal of Smith's SF has less to do with this sublime of size, and more to do with his wholehearted entry into discourses of will. This, as I have been arguing more generally, is one of the shaping discourses of 19th- and 20th-century SF, ideas that have percolated through from Schopenhauer and Nietzsche. Providing compensatory fantasies of telepathic empowerment for thwarted or low-esteem adolescents is, in other words, only part of what Smith is doing. However banal, his access to the 'sense of wonder' depends upon a valorisation of will over technology. This is particularly evident in the *Skylark* series. Telekinesis is there called 'the Talent', and, latent in many, can be developed extensively. As a correlative to those things that tend most to preoccupy male adolescents, this 'Talent' mediates sex ('it works best with complementing male and female poles of power', Ellik and Evans, 246) and provides otherwise

powerless individuals with a world shattering potency. At the climax of the series the clean-cut hero Richard Seaton teams up with his human arch-enemy Marc C DuQuesne to repel an invasion by the malevolent alien Chlorans. This resolves into a battle of psionics, a team of humans against 'rabid Chloran attackers ... minds that thundered destruction at them'. The result is a genuinely startling holocaust of alien life, reported in an even more startlingly off-hand manner: Seaton and DuQuesne move whole stars (fifty thousand million of them) across millions of light years, colliding them together to turn them into weapons; the Chlorans 'died in uncounted trillions ... their halogenous flesh was charred black and desiccated in the split second of the passing of the wave front from each exploding double star'. Humanoids are spared, since for each sun destroyed 'an oxygen-bearing, human-populated planet was snatched through four-space into the safety of Galaxy B' [Smith, *Skylark*, 244–7]. The book finishes with DuQuesne declaring his love for, and being accepted by, the beautiful, jutting-breasted, narrow-waisted nuclear physicist Stephanie de Marigny. There is no backward glance at the stupendous holocaust of Chloran life.

Of course this takes the fantasy of the individual empowerment by will to a hyperbolic and extraordinarily distasteful extreme; but the borderline psychopathology of this adolescent fantasy of mind power also expresses the depth to which Smith's writing is rooted in a fundamentally theological conception. It is not the world of matter, 'the space-time continuum of the strictly material', that is real; the *true* dimension is 'the demesne of The Talent ... known to some scholars as psionics and to scoffers as magic or witchcraft' [Smith, *Skylark*, 240]. Similarly in *Lensman* the power of the various titanic and enormous spacecraft is as nothing compared to the power of thought (defined as 'a mind-generated vibration in the sub-ether', Smith, *Gray Lensman*, 41). Ethics in the series is linked specifically to the division between the spiritual and the material. The evil Eddorians live a thoroughly and disgustingly physical existence (on a dense planet whose liquid atmosphere is corrosive and deadly to human life), enhanced with a great deal of technology. The ideal Arisians, on the other hand, have long since abandoned corporeal form, living as pure thought or will. This scheme is not Manichean, for the quasi-theistic Arisians are always superior to the evil physical Eddorians in the crucial area of thought, which is to say will.

These exterminations of whole intelligent species could only seem careless and offhand to a person ignorant of the fact that the 1930s ended in a war in which one side sought to literalise such plans for mass extermination. Prototypes of the Spinardian *Iron Dream* fascistic fantasia are everywhere to be seen in 1920s and 1930s pulps. In Australian author Erle Cox's *Out of the Silence* (1925) a high-tech chamber is uncovered in the Australian Outback containing, in suspended animation, the beautiful White woman Earani, last survivor of an earlier human master race. Amongst the many technological marvels preserved from this past time is a 'Death ray', used to 'purify' the world of its various inferior races. 'Your problem,' Earani tells her discoverer,

handsome White Australian Alan, 'is as nothing compared with the one the world had to face then ... three thousand millions of people on the globe, of whom more than four-fifths were of the lower race.' The 'coloured people' began agitating for equality, so the 'Death Ray' was deployed. 'The coloured people old and young went down before it with appalling certainty' [Cox, 260]. The novel doesn't unambiguously endorse this racist mass-murder, and Alan can't quite bring himself to agree with Earani's insistence that his people face the same challenge. But he seriously considers it, and the consummation of his grand passion with Earani is only thwarted when his spurned girlfriend Marian stabs her.

Often, as in Cox's novel, such narratives of fascicized 'heroic' defence against assault by the massed monstrous other were specifically racialised. In both adventure pulps and SF ones, stories set in Africa frequently pitted White explorers against racist stereotypes of Black Africans. 'Yellow Peril' narratives proliferated, demonizing the Chinese as a sub-human horde of dangerous pests, sometimes under the ideologically freighted moniker Celestia (a reference to China as the celestial empire; Chinese immigrants were sometimes called Celestials by mocking Whites). In Vincent Joyce's *The Celestial Hand: a Sensational Story* (1903) Chinese invade first Australia and then Europe, although despite their vast numbers they are defeated by the 'superior' Whites. A J Pullar's *Celestalia: a Fantasy AD 1975* (1933) imagines a future invasion of Sydney and Melbourne by the Chinese. One of the most popular pulp characters of the 1920s and 1930s was British author Sax Rohmer's Fu Manchu, the antagonist in thirteen novels and the very epitome of orientalisng racism: inscrutable, evil, scheming and criminal to the core. Rhomer wrote thirteen Fu Manchu novels before his death in 1959, starting with *The Mystery of Dr. Fu Manchu* in 1913. In these tales the sinister doctor has rendered himself functionally immortal with an 'elixir vitae' and his plan involves him kidnapping Europe's greatest scientists in China to construct a futuristic super weapon. Fu Manchu migrated promiscuously to pulp magazines and comics, onto the stage, the radio and finally into a great many movies. As Abraham Kawa notes, this villain is the reversion of Western imperialism back upon itself, 'the fear of the colonized retaliating through rebellion and sabotage', a detail highlighted by the fact that 'the actors cast to portray' him 'were Caucasians made up to look like stereotyped people of Eastern origin' [Kawa, 51].

But just as often, the racial Other was figured as extraterrestrial. Take for example the many stories of brothers Earl Andrew Binder and Otto Oscar Binder, writing under the portmanteau pseudonym 'Eando Binder', published in the 1930s pulps. In 'The Black Comet' (*Science Fiction*, June 1939) a group of Martian colonisers are forced to defend themselves against frenzied Martian hordes, which they do by obliterating their massed advance with a machine-gun-like superweapon. In 'Eye of the Past' (*Astounding Science-Fiction* March 1938), a timeviewer reveals a future invasion of Earth by implacable aliens who can be combatted only by the atomic cannon invented by Henri Vorday 'perhaps the greatest genius of the age'. 'Soon would come a decisive struggle

between Earth's new armament and the demoniac powers of the aliens.' Sooner than most people in 1938 realised, as it turned out. And these sorts of stories easily slid up the scale of hyperbole, stylistically and conceptually. US writer Edmond Hamilton started his career by producing pulp tales of varying intensities of cosmic catastrophe, combatting malign aliens on a global, solar-systemic or cosmic scale. 'Readers,' John Clute notes, 'who rewarded Hamilton with several nicknames in recognition of his gift, variously "World-Destroyer", "The World Wrecker", or "World-Saver Hamilton".'

EUROPEAN PULPS

Pulps were especially popular in the USA, where they helped create a readership of self-conscious science-fiction aficionados. By the end of the 1930s, says Edward James, SF had become 'fully recognised' with 'its own specialist magazines and its own specialist readership', although 'since SF in the United States was largely restricted to the pulps, it enjoyed none of the literary prestige that was grudgingly bestowed on some SF in Europe' [James, 53]. Much of the SF discussed in the previous 'High Modernism' chapter was indeed European, but this is not to say that there were no European pulps. On the contrary, a mass audience for SF was catered for across the continent.

In France the 19th-century popularity of SF continued up to the Second World War, although it changed character thereafter. Popular pulp serials included *Sâr Dubnotal* (1909–10; the title character was a superhero who had been trained by Hindu Yogis with magical skills) and *Nyctalope*, a series of dime novels by Jean de la Hire about the interplanetary adventures of a superhuman avenger [titles include *L'homme qui peut vivre dans l'eau* [*The man who could live under water*] (1908); the Mars-set *Le mystère des XV* [*The mystery of the 25*] (1911); *Lucifer* (1923); *Le roi de la nuit* [*King of the Night*] (1923) and the explicitly religious *L'Antéchrist* (1927)]. Jacques Spitz wrote a series of high-concept SF novels with popular appeal: two are *L'agonie du globe* (*The Agony of the Globe* 1935) in which the Earth breaks into two pieces and *La guerre des mouches* (*War of the Flies* 1938) in which mutant flies take over the world and destroy almost all of humanity.

In Germany a series of 165 magazine-like dime-novels under the general title *Der Luftpirat und Sein Lunkbares Luftschiff* (*The Sky-Pirate and his Navigable Sky-ship* 1908–11) enjoyed considerable popularity. The *luftpirat* is Captain Mors who travels the world in an airship of his own construction fighting evil. Hans Dominik became a bestselling German pulp author with *Die Macht der Drei* (*The Power of the Three* 1922), the first of sixteen titles that mixed kinetic adventure with a scientific/magical exoticism. *Die Spur des Dschingis-Khan* (*The Legacy of Ghengis Khan* 1923) and *Atlantis* (1925) confirmed his popularity, although hyperinflation in interwar Germany wiped out his wealth. Otto Willi Gail is a little better known in the Anglophone world because two of his titles (*Der Schuss ins All* [*The Shot into the Universe*] 1925 and *Der Stein von Mond* [*The Moonstone*] 1926, both tales of rocketeering constructed according to correct technological principles as then understood) were translated and appeared

in Gernsback's *Science Wonder Stories* 1929–1930. Karl Hans Stroble founded Austria's first SF pulp *Der Orchideengarten: Phantastische Blätter* (*The Orchids-garden: Fantastic Pages*); although it only lasted for 24 issues, it published a wide range of SF, reprinting classic stories and commissioning new ones. Sequence stories proved more enduring, such as Paul Alfred Müller-Murnau's *Sun Koh, Die Erbe von Atlantis* [*Sun Koh: Legacy of Atlantis*] which ran to 150 issues between 1933–1936. The overarching story here concerns a hero of Mesoamerican-Atlantean descent, and his often frankly racist adventures around the world. In Sweden Otto Witt, the so-called Swedish Hugo Gernsback, founded a seminal SF magazine *Hugin* (1916–20). *Der Orchideengarten* ran from 1919 to 1921 before folding; more 'weird tales' and Gothic horror than science fiction, the popular market wasn't there to sustain it.

Germany led the market in European pulp SF through the 1920s, although such extravagances were not encouraged by the Nazis in the 1930s and the provision dwindled during that decade. In Fascist Spain, however, the same decade saw a boom in SF pulps; for example, José Canellas Casals and Francisco Darnis' *Los Vampiros del Aire* (*The Aerial Vampires*) ran for forty-five issues between 1933–1934: the vampires, despite their name, are not supernatural, but are a group of private crime-fighters who use technology to enable them to fly and swoop down on malefactors. They prefigure Batman by the best part of a decade. The *Aventuras* series of magazines, though set in the American Wild West, contained a high proportion of SF stories and were popular throughout the 1930s and 1940s.

In post-Revolutionary Russia there was an explosion of popular science fiction, seen by the authorities until the later 1930s as a legitimate vehicle for stories expressing the superiority of communist ideals over capitalist ones. Magazines such as *Всемирная Следопыт* (*Globespanning Ranger*) and *Мир приключений* (*World of Adventure*), which often carried SF, enjoyed enormous readerships, in part because Russia was (and is) a very populous and bibliophile nation. Writers such as Aleksandr Belyaev mediated the style of Wells and Verne into a Russian idiom. Belyaev's first story *Голова Профессора Дюэля* (*The Head of Professor Douellia* 1925) vividly imagines the stasis of the head of the titular professor, severed but kept alive by organ-transplant technology. *Звезда КЭТ* (*The Star KET* 1940) takes its titular initials from space-travel pioneer Konstantin Eduardovich Tsiolkovsky. The novel celebrates and dramatises Tsiolkovsky's ideas of reaction rockets. Belyaev is still in print in Russia today, and is regarded as a classic author.

VISUAL TEXTS

Almost as important as the stories inside them was the visual look of the pulp magazine; indeed we can go further than this and identify the visual component of pulp SF as in many ways more important than the prose component. Magazines placed a striking, bright four-colour image on their covers to attract the eye of potential purchasers; and the stories inside were illustrated in black-and-white. Although the quality of artists employed varied, especially when

judged by representational criteria (some could do realistic looking people better than others, for instance) it is a mistake to judge the dozens of SF artists from this period on these criteria. The achievement of pulp SF art was not representational; it lay in the creation of a wholly original mode of visual representation, highly varied and yet immediately recognisable, that still correlates to SF today.

Despite the enormous variety of images published between 1920 and 1950 most people have a sense of what constitutes a ‘typical’ pulp Magazine cover. The subject was most likely heroic men, attractive women in a state of undress and monstrous aliens or robots posed in mid-action. Sometimes the cover would detail monumental futuristic technology. The style, though usually aspiring to ‘realistic’ representation was less than photorealist, but was full of energy and vigour. The typical rendering utilized bright primary colours printed in cheap coal-tar dyes. Compositionally most pulp covers worked with a pronounced horizontal and vertical arrangement, usually utilising at least one strong and sometimes two crossed diagonals to give the image vigour, as well as (often) a prominent curve. Graphics, especially the title of the magazine but also the other verbal details (of stories and authors inside) contributed to the effect with brightly coloured, thick decorative fonts, sometimes worked into the picture—such that a rocket might shoot *in front of* the magazine’s title—as if these words were actually part of the visual field.

Four artists in particular are associated with this distinctive SF magazine cover look. The most famous is Frank R Paul, born in Austria but a US citizen by the time Gernsback employed him to provide cover and interior illustrations for the first *Amazing* in 1926. He went on to illustrate many more, with an emphasis on giant machinery and architecture rather than human beings. US painter Howard V Brown was particularly associated with *Astounding* but also worked for *Thrilling Wonder Stories* and *Startling Stories*. He specialised in paintings of odd alien life, making them more striking by working with a more restrained colour palette than many of his fellows. Also an American, Leo Morey worked especially for *Amazing Stories* from 1930 into the 1940s and created more colourful images, with a more imaginative use of composition. The fourth figure was Hans W Wesso. Born in Germany as Hans Wessolowski, he emigrated to America in 1914 and worked on a variety of magazines. Although less popular than Paul, some critics prefer his more artistically sophisticated work; Jon Gustafson and Peter Nicholls, for instance, praise his ‘more open’ less cluttered compositions, which ‘seem more concerned with the overall design of each piece ... creat[ing] an almost abstract beauty out of the conventional icons of Space Opera’ [Clute and Nicholls, 1316–17] (Fig. 10.3).

The connection with abstract art is an interesting one. It is hard to deny that there is an abstract quality about much of this artwork, representational though it purports to be—more so in this period, paradoxically, than magazine covers from the 1960s when actual abstract images were sometimes used. The whole effect is actually in tune with the main currents of American art in the late 1920s and 1930s. The best SF cover art combines the virtues of the two artists Robert Hughes calls the ‘outstanding American painter[s] of the

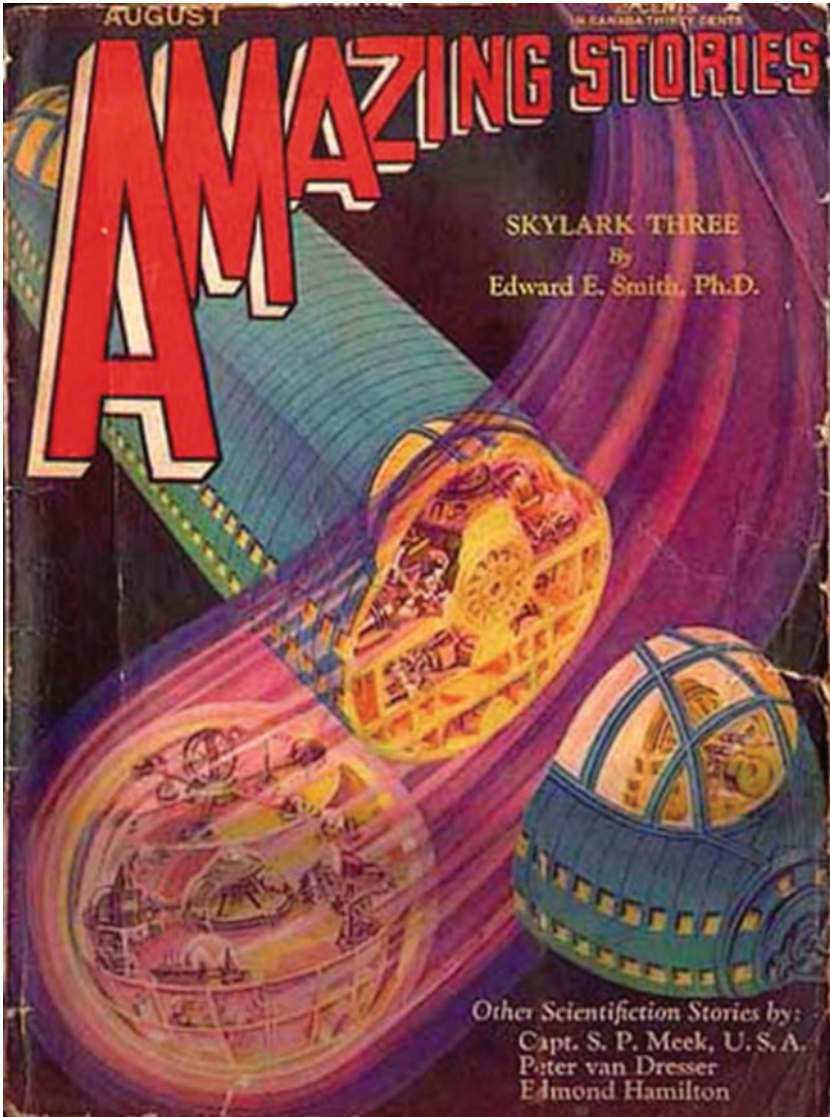


Fig. 10.3 Hans W Wesso artwork for the cover of *Amazing*, August 1930

1930s', the careful, unpolished architectural realism of Edward Hopper and the bright, quasi-journalistic energy of Stuart Davis. Hughes describes the art of the latter figure as 'extroverted, loquacious, witty, and optimistic, with a strong bent towards pictorial journalese' [Hughes, 430]; he could be talking about SF art of the period.

In addition to the pulps the 1930s saw the emergence of SF comic strips, works in which the visual component was even more important. Newspapers

often ran brief daily strips, in black and white, of, for instance, space heroes Buck Rogers (syndicated to daily newspapers from 1929) and Flash Gordon (syndicated to Sunday and daily papers from 1934), but these, though popular, were limited. Dick Calkins, the principal artist for the Buck Rogers strip, produced rather mannered black-and-white line drawings that seem crude today; but Alex Raymond's art for the Flash Gordon strip was more vital, punchier and better drawn. But specialist magazines (comic books) soon emerged. The company Detective Comics Inc (as its name suggests, it specialised in crime-story pulps and is better known today as a publisher under its initials DC Comics) published the more SF *Action Comics* in 1938. This was the venue for the first Superman comics, by writer Jerry Siegel and artist Joe Shuster. The alien humanoid with superhuman strength and a fondness for rescuing humans in danger became so popular that by 1939 he had his own publication, *Superman Comics*. Even more than John Carter, Superman is the *übermensch* as action hero, since he turns will to raw power. His gravity-defying prowess, initially presented in the form of mighty leaps, later evolved into a capability for bona fide high-flying, solely on the force of his will. More importantly, he does this in a new, visual medium; readers could 'see' his feats performed before their very eyes, rather than merely fantasise about them based on prose descriptions. Furthermore, Superman was a deliberate answer to the fascism-associated *übermensch*; as the creation of two American Jewish youths, he was the reversal of the Aryan overman, and as a child of Roosevelt's New Deal ethos, he used his powers to champion the oppressed, initially against even the corrupt authorities. Imitators followed, including Captain Marvel, who first appeared in *Whiz Comics* in 1940, and a number of other superheroes, beings whose supernatural powers made them the contemporary pictorial equivalent of ancient gods and mythological heroes, frequently with an SF rationalisation of these powers to make them more believable for 20th-century audiences [see also the next chapter]. In Europe American comics were often published in translated form, although a number of domestically produced comics were also published. *L'Avventuroso* in Italy carried the bang-bang space opera *Saturno contra la Terra* from 1937–43, in which Saturnians threaten to destroy the Earth. The French magazine *Junior* serialised *Futuropolis* (1937–38), with elegant artwork by René Pellarin and a storyline about the last city on Earth. A sequel, *Electropolis*, followed in 1940. The tradition of Robida is here made more complex and involved, and therefore more aesthetically satisfying. In England the bicep-heavy action hero Garth began appearing in the *Daily Mirror* from 1943. Although these texts installed the superhero as the dominant topic of SF comics, it was not until later in the century that the comic book and graphic novel achieved the level of significant art. But their emergence in the 1930s and 1940s does point the way to the increasingly visual bias of the genre.

The significance of the pulps, in other words, was twofold: firstly, they increased SF readership, particularly in the USA (whilst simultaneously coralling SF Fans into a self-created enclosure); secondly, and perhaps more significantly, they created for the first time a *distinctive* SF visual style, and played

their part in the broader cultural shift of SF from a verbal to a visual form of art, something that was to become increasingly the case as the century progressed.

SF CINEMA: THE SILENT ERA

With hindsight it seems clear that the most important mode of visual SF is cinematic; but this was not evident from the earliest developments of the genre. The first SF films were whimsies; short representations of pantomimic oddity designed as diversions. One of the earliest is *Le Voyage dans la Lune* (1902), directed by French pioneer Georges Méliès. Lunar explorers reach the Moon in a Vernean cannon-fired spaceship to discover Wellsian insectoid aliens before returning to Earth (Méliès conceded the influence of both Verne's *De la Terre à la Lune* and Wells' *The First Men in the Moon*). There is a rather strained wackiness to this film, a side effect of Méliès' past as an illusionist and stage fantasist: chorus girls in frilly knickerbockers load the spacecraft into its cannon; umbrellas, planted in the lunar surface, blossom and bloom. But there are redeeming features in the visual imagination. In particular the landing on the Moon is first shown—in a brilliantly iconic image—as a projectile landing in the eye of the pudgy, cratered face of the man in the Moon (Fig. 10.4).

This image, still current (which is to say, still liable to be recognised by many today) is extremely eloquent; it seems to condense a set of assumptions about man's exploitation of nature, and about alienness as a comprehensible oddness, in a wittily compact manner. There is another significance in Méliès' image. It emblematises the way SF cinema was, largely, to make its greatest aesthetic impact—as an idiom of striking and beautiful images, rather than as a medium of (say) narrative, character, or even, particularly, of spectacle. The key moments in the SF of the last half-century are in essence poetic moments: the resonance and mystery as well as the beauty of a poetic image is what makes luminous (as it might be) the ape throwing its bone into the sky to metamorphose into a spacecraft; or the star-drenched sky of the final paragraph of *Nightfall*; or Wyndham's unsettling Midwich children; or Carrie-Anne Moss suspended in mid-air kung-fu as the camera sweeps all the way around her; or the eerie silences of the first two books of *Years of Rice and Salt*. There are hundreds of examples from the best SF, and they all work precisely as poetic images work. But some of the most resonant and beautiful images come from SF cinema.

It is certainly true to say that narratives in early cinema were rudimentary; the emphasis was rather on spectacle, on giving audiences striking visual novelties. In the US short *The ? Motorist* (1905) a couple in a car slip from the Earth into space, and (amongst other things) drive round Saturn using its rings as a ring-road. By the nineteen-teens, however, audiences were becoming more demanding. In the search for compelling stories, SF filmmakers turned to the prose classics of the genre as source material for more ambitious cinematic narratives. Many versions of Stevenson's *Strange Case of Dr Jekyll and Mr Hyde* (1886) were made: one in 1908, two in 1910, one in 1912, three in 1913, four



Fig. 10.4 Still from Méliès' *Le Voyage dans la Lune* (1902)

in 1920. A kinetoscope version of *Frankenstein* (J Searle Dawley 1910) has been mostly lost, although stills and a brief sequence of American actor Charles Ogle playing the Monster in wild-haired whiteface survive. More ambitious and much longer films followed. German director Otto Rippert's *Homunculus* (1916) ran for six episodes and over six hours. The story concerns a scientist who creates a physically perfect *künstliche Mensch*, or artificial man (played by handsome Danish actor Olaf Fønss), who discovers he cannot love and so turns to evil. From the same year came the American Verne-adaptation of *Twenty Thousand Leagues Under the Sea* (Stuart Paton 1916); the two-hour film's narrative is sketchy, but the underwater photography (filmed from a specially designed steel 'photosphere' suspended beneath a barge) is very impressive.

After the First World War cinematic narrative tended to fall into more conventionalised structures, but the special effects and visual aesthetic of novelty and spectacle they fostered developed rapidly. In French director René Clair's *Paris qui dort* (*Paris Asleep* 1923) a scientist has invented an invisible ray that stops all human action. He turns it on Paris. The only Parisians who escape its effects are those airborne (either on top of the Eiffel Tower or in aeroplanes), who return to Earth to wander around the frozen city. The plot is less important than the striking scenes of moving characters walking through the motionless tableaux of Parisian life. Indeed, one of the things that makes this film so interesting is its tacit awareness of its own medium, the way it inverts the premise of its own new-minted mode; in Garrett Stewart's words, it dramatises

‘the virtual *decinematizing* of the world’s continuous action’ [Stewart, 166]. Science fiction, so often *about new* technologies, was now being embodied *in* a new technology, cinema—a circumstance that encouraged a metatextual cross-fertilisation. New visual media (TV, computers) provided similar injections of creative energy later in the century.

Аэлита (*Aelita*; Yakov A Protazanov 1924) emerged from newly Communist Russia. Once again the rather dislocated plot is less significant than the eloquence of the film’s design, framing and overall *look*. A young Russian man called Los travels to Mars by rocketship. There is some flirtation with the beautiful humanoid Martian Queen Aelita—who has conveniently already fallen in love with Los by observing him through a telescope—and an attempt to provoke a popular uprising—the ruling cast keep the workers in freezers when they’re not actually labouring. At the end the whole Martian trip is revealed, anticlimactically, to have been a dream. The angular, stylised sets, bizarre and striking costumes (both these things had a direct influence on the *Flash Gordon* film series) and the vigorous way the film cuts multiple shots together to create a panoramic sense of a larger world (especially in the Earth-set first third of the movie) are all still memorable and effective. According to Denise Youngblood, *Aelita* was ‘one of the most popular films exported to Germany’ in the 1920s [Youngblood, 60]. It’s likely it influenced *Metropolis* (Fritz Lang 1926), but if so the later work eclipsed it. *Metropolis* is surely the single most iconic prewar SF film. It is set in its titular futuristic city, divided vertically between the workers (toiling in subterranean factories) and the ruling class (living on the top of the giant skyscrapers and exercising in sunny Olympic fields). Freder Fredersen, son of the city’s chief aristocrat, falls in love with Maria, a saintly woman who ministers to the oppressed workers. For reasons that are not initially clear, Fredersen senior has the eccentric scientist Rotwang create a robotic duplicate of Maria whose erotic dancing incites lustful rioting amongst men, and who quickly provokes a citywide uprising. Workers abandon their machines, which precipitates a flood that threatens the workers’ wives and families. The flesh-and-blood Maria saves the day, and the film ends with industrial relations being put on a more rational, although evidently still unequal, footing.

It is not its inchoate and ideologically naïve story that makes this a great film. *Metropolis* was, it is true, severely cut for American distribution, and the chopped-about version does make less narrative sense than the longer version that premiered in Berlin. But even the longer version—and the novelised version by Lang’s wife Thea von Harbou—is disjunctive and fatally schematic.⁴ The rulers represent ‘the head’ and the workers ‘the hand’, and with a breathtaking banality the film’s final shots try to pretend that the moral overall is that ‘head and hand must work together, and not fight one another’. If Lang had actually succeeded in dramatising so idiotic a cliché then the film would have been deservedly forgotten. But something more interesting is going on. *Metropolis* itself is a futuristic urban space; but Rotwang lives in an ancient Gothic mansion, and he fights Fredersen on the roof of a medieval Cathedral. The film

provides no rationale for these conflicting visual styles; indeed, it's possible to argue that the disruptive juxtaposition is part of the point of the film. The fundamental juxtaposition of the movie is the human and the machinic.

This seems as true of the acting as it is of the special effects. It is as if Lang as director had at this point simply not grasped that cinema requires a different, less projected style of acting than theatre; accordingly all the performances in *Metropolis* are distractingly over-the-top, melodramatic to the point of the comical, with distortingly exaggerated facial expressions and flinging operatic bodily gestures. It is true that silent films often featured over-projected acting; but the acting in *Metropolis* is hyperbolic even by silent standards. But this is only to say that the human agents in the film perform machinically. It is for this reason that the most effective acting in *Metropolis* is not by a human but by a manikin; the beautiful Art Deco stylings of the robot Maria before she is transformed into the simulacrum of Maria. Standing on its podium whilst hoops of shining light pass up and down its body, this robot's very stillness makes for a powerful screen presence. Michael Benson thinks 'it has the haunting face of a Mycaenean death mask' and that it 'oozes sensuality' [Benson 23]. That it manages to do both these things is, in itself, a remarkable thing. This is the erotic essence of the pulp aesthetic; a narrative that mediates its affect, including its sexuality, through a complexifying technological aesthetic. Like the Moon with a rocket in its eye from Méliès' *Le Voyage dans la Lune*, the graceful, uncannily alluring metallic lines of the robot Maria created a visual icon that endures to this day.

Lang's next film, *Die Frau im Mond* (*The Woman in the Moon* 1929) has its supporters, particularly for the earlier sections in which a rocket is assembled and launched at the Moon (apparently Nazis later suppressed the film and destroyed its special effects models, for fear that it would give away the secrets of their own V2 programme). The moonbound crew hope to find lunar gold; there is a stowaway and various adventures. But there is nothing in the film to rival the iconic impact of *Metropolis*' cityscapes or the original robot Maria. It was in such visual moments, although they were often only tiny portions of much longer visual narratives, that cinema made its greatest contribution to the developing art of SF.

SF CINEMA IN THE 1930s

Sound changed the way cinema worked in more than just the obvious sense that the aural was added to the visual. Silent films could be made in any country and played in any country, with intertitles swapped from language to language as required. Sound cinema, although it may be dubbed or augmented with subtitles, is much less portable. It bears the impress of the country and culture that makes it to a much greater degree. One consequence for SF cinema was that from the 1930s on, most significant SF films were made in Anglophone countries. Good SF cinema was of course made in other languages as well; but in a 20th-century world dominated by English they often failed to achieve the cultural penetration of Anglophone cinema.

The first film to be released with a prerecorded soundtrack was the historical romance *Don Juan* (Alan Crossland 1926). The soundtrack for this picture was only an orchestral musical accompaniment, but *The Jazz Singer* (Alan Crossland 1927) added occasional recorded dialogue. The immense success of this latter ensured that all Hollywood studios had converted production to sound by the early 1930s. The first significant sound SF film was an expensive misfire, the 1980-set musical comedy *Just Imagine* (David Butler 1930). The future New York was created with some very impressively realised models and sets, and resembles a cleaner better Metropolis (whilst lacking the dystopian lower levels). The film also includes a trip to Mars. Poor reviews and box office sank this film, and it seemed to some at the time as if SF sound cinema was to be stillborn. But a series of excellent, popular adaptations of classic SF books were made over the following years, films still popular and current today.

These included *Frankenstein* (James Whale 1931), a perdurable cinematic classic that epitomises the brilliance with which this new medium could apprehend the melodramatic vigour and affective eloquence of pulp. Whale's monster is not created as a *tabula rasa*, as is the case in Shelley's novel (a mixup means that he is given the brain of an executed criminal); but the blend of terror and pathos in his representation is unforgettable. Much of the credit for this must go to the actor Boris Karloff. Born William Henry Pratt in Dulwich, England, Karloff adopted his Russian-sounding stage name purely to make himself sound more interesting to Hollywood casting agents. His performance in *Frankenstein* shows remarkable subtlety and effectiveness under extensive make-up (the application of which left the actor with scars). Whale's relatively novitiate grasp of the grammar of film was also impressive. Whale's sad-eyed rectangular-headed Monster has become the touchstone visual image of Shelley's creation.

The Island of Lost Souls (Erle C Kenton 1932), a version of Wells' *Island of Doctor Moreau*, also trades off the star quality of its lead, Charles Laughton, who plays Moreau as a sinister, slightly effete sadist. Wells disliked the film because he thought it untrue to his conception of Moreau as an idealist, but it is nonetheless an extremely powerful horror picture that understands how much more effective it is to *suggest* nastiness than to show it. *Dr Jekyll and Mr Hyde* (Rouben Mamoulian 1932) remains for many the best version of this much-remade title. Actor Fredric March won an Oscar for his jerky, expressive portrayal of the doppelganger title characters, but it is Mamoulian's deft handling of the range of cinematic effects that leave the strongest impression on the viewer, from the use of montage in the first transformation from Jekyll to Hyde, to point-of-view shots and the moving camera. Whale returned after the enormous success of *Frankenstein* to direct *The Invisible Man* (1933) based on the Wells novella. Claude Rains' portrayal of the title character is limited (except for a brief shot at the end) to his voice alone, but he maintains a striking visual presence throughout nonetheless, with his face swathed in bandages and eyes covered by sunglasses, and conveys the macabre megalomania of the invisible scientist Griffin with elegant cruelty and a chillingly fascistic rationale

(he tells his unwilling assistant Kemp ‘we’ll start off with a few murders: small men; great men. Just to show we make no distinction’, and rants, Hitler-like, about the new status quo he will impose, with people trembling in horror beneath his invisible might).

Enduring though these four films have proved, the most notable SF film of the decade was not an adaptation of a pre-existing book. *King Kong* (Merian C Cooper, Ernest B Schoedsack 1933) remains the most famous ‘monster film’. Kong is a gigantic ape-like creature who lives on a remote island. An American film-crew who have come to the island to film an adventure documentary discover Kong, and Kong discovers the beautiful if (to him) diminutive Ann Darrow (Fay Wray) who is with them. The beast falls in love with the woman and carries her away. The Americans gas Kong and ship him, in captivity, to New York to display him as ‘The Eighth Wonder of the World’. But Kong escapes, grabs Darrow from her hotel room and climbs to the top of the city’s tallest skyscraper, before he is gunned down by warplanes and killed. In a sense, it is the Lilliputian episode from Gulliver’s Travels imagined from the point of view of the Lilliputians. This film established a number of powerful visual icons that have permeated 20th-century culture: the savage island, on which terrified natives have constructed a huge wall to keep Kong out (given the facility with which the ape shins-up the much taller Empire State Building, it’s not clear how this is supposed to work); Fay Wray in the palm of Kong’s gigantic hand; chained Kong, on display in New York, startled by the flashbulbs of photojournalists and breaking his chains in rage; Kong atop the Empire State Building as biplanes buzz around him. It is a film with a deftly paced narrative, strong drama and a powerful premise; but nevertheless it is hard to shake the sense that it is these images (created by the best special-effects work then seen in Hollywood) rather than anything else that have powered the film into popular consciousness. It is in the nature of the best visual images to resist too precise a definition of their effectiveness and so it is in the case of this film, although critics have been prolific in their various interpretations.

Certainly, what all these films have in common—apart, that is, from their enormous and enduring popularity—is that they configure SF around a monstrous threat. More specifically each of them can be read, reductively, as a fable preaching against mankind’s interference in ‘Nature’. As such, their influence pulled SF towards one pole of the dialectic that defines it. ‘Nature’ in these works is not predicated upon a properly scientific objective ‘I-It’ relationship, but on a pseudo-religious ‘I-Thou’ relationship. It is by way of defining a specifically pulp SF that Scott McCracken offers the suggestion that ‘at the root of all science fiction lies the fantasy of alien encounter. The meeting of self with other is perhaps the most fearful, most exciting and most erotic encounter of all’ [McCracken, 102]. It is hard to deny that the various monstrous Others of these films mediate fear, excitement and eroticism; and an allotropic reading of the genre can provide compelling social and cultural contexts to SF texts. What I mean by this is that during the 1930s a number of obnoxious political ideologues enjoyed widespread power partly because of a systematic

demonisation of 'the Other' as something monstrous that the 'healthy' body politic needed to expunge. The most notorious instance of this was in Nazi Germany, where not only Jews but Slavs, Homosexuals, Gypsies, Blacks and various others were identified as pathological aliens and scheduled for destruction. To varying degrees of extremism, versions of this distressingly effective ideology were evident across the globe. America was perhaps more inclusive than some other nations, but founded as it was by Puritans (for whom the separation of humanity into sheep and goats was a point of religious truth) there was for most of the century a deep-rooted prejudice against people of African ancestry (particularly) as also against Native Americans and various other ethnic groups. American Blacks in particular have borne the oppressive weight of White symbolisation, whereby they are made to 'stand for' a series of negative human characteristics, especially a bestial sexuality, violence and inferiority. It is for instance impossible (I would argue) to read the 1932 *Dr Jekyll and Mr Hyde* except in a racial context—Fredric March's Hyde made-up has a discernable negroid look—as a tacit libel on Black manhood, a film tapping into White American anxieties about race, and more specifically about the proximity and danger of Black America. Some critics read *King Kong* in similar terms.

But what is less often noted by critics is the crucial ambiguity of these monsters. In all these films, but especially in the most enduring of them (*Frankenstein*, *King Kong*), the monster is simultaneously terrifying *and* appealing, evoking a complex of fear and pathos. When Kong is slain the mood is very far from triumphalist.

1930s FILM SERIALS

Above all, it is as a popular idiom that SF cinema thrived in the 1930s; more particularly in the form of movie serials that were shown week by week. The suitedness of this format to later television broadcast kept many of the early film serials in currency through the 1960s and 1970s.

There were, of course, attempts to make more deliberately 'serious' or 'highbrow' films, but these proved much less successful: *Things to Come* (William Cameron Menzies, 1936) was a big-budget version of Wells' *Shape of Things to Come* that failed at the box-office. Academics have been kind to this ponderous, arthritic, unconvincing movie ['one of the most important films in the history of SF', Clute and Nicholls 1219], but it is hard to see why. It takes a complex if preachy prose text and reduces it to a simplistic yet still preachy three-act drama of (first) near-future decline, (second) mid-future anarchy and (finally) neo-fascistic rescue by an elite of aeroplane-flying scientists. The film-makers possessed so nugatory a sense of dramatic tension or trajectory that attempts to generate excitement are injected artificially at inappropriate moments (such as an instantaneous riot near the end of the movie, as a rocket is launched to the stars), which adds conniption gracelessness to an otherwise funereal film. J P Telotte, in a more intelligently considered account of this film than is to be found in the work of many critics, nevertheless suggests

that *Things to Come* is 'one of the more visually impressive films of its time' [Telotte, 151] and that is true; although, as Telotte himself notes, the special effects, especially towards the end, are 'monumental' in a chilly and rather distant way. Above I listed a handful of iconic visual moments from *King Kong*, moments which would be recognised by most people today; there are no such moments in *Things to Come*.

The first and most successful of the space opera film serials was *Flash Gordon* (13 episodes; Frederick Stephani, 1936), a film version of the adventures of the popular comic strip hero. Heroic Earthman Flash (Larry 'Buster' Crabbe) and his girlfriend Dale Arden (Jean Rogers) fly off in the spaceship of their friend Dr Zarkov (Frank Shannon) to the planet Mongo to prevent it colliding with Earth. There they battle with the evil emperor Ming (played with pantomime panache by Charles Middleton) and various hawkmen, lionmen, sharkmen, horned gorillas and the like. Where *Things to Come* special effects were immaculately produced, monumental and lifeless, *Flash Gordon's* are astonishingly primitive: spaceships hang from visible wires; rocket exhaust puffs upwards like pipesmoke; aliens are patently actors in suits (many of which were taken directly from *Just Imagine*). Yet this very crudity of the cinematography is emblematic of the redemptive eagerness and energy of the whole. It is of course not an ideologically neutral text; the representation of Ming in particular draws on essentialist notions of 'oriental tyranny and decadence' that are racist, and which intensified in 1940 when the USA went to war with Japan (although it might be added that, whilst the Mongonians in the comic strips were drawn as racially Far Eastern, the movie version styles them as racially Caucasian; after the success of the serial this was adopted by the comic strip).

This serial was so successful that a number of sequels were made, including *Flash Gordon's Trip to Mars* (15 episodes; Ford Beebe and Robert F Hill 1939) and *Flash Gordon Conquers the Universe* (12 episodes; Ford Beebe and Ray Taylor 1940). Other serials were hurried into production, most notably the interplanetary *Buck Rogers* (12 episodes, Ford Beebe and Saul A Goodkind 1939). *Undersea Kingdom* (12 episodes, B Reeves Eason 1936) starring the Flash-homophonic 'Crash' Corrigan, transferred the plotline of *Flash Gordon* undersea, with Atlantis instead of Mongo threatening the Earth, led by the Ming-a-like Unga Khan (Monte Blue).

Of course, populist SF serials of the 1930s were also often wooden, and prone to a lurchingly inorganic sense of narrative form and shape; but they had no pretensions to anything other than narrative momentum and were accordingly much more successful. *Things to Come* purported to be about the future, but its relative motionlessness was incompatible with an age in which the movement of humanity into the future was palpably picking up speed (something many commentators at the time noted). The onward rush of the SF serials, on the other hand, captured precisely the hectic sprint of time towards the unknown.

WELLES' *WAR OF THE WORLDS* (1938)

The radio adaptation of *War of the Worlds* by tyro Orson Welles, broadcast in America in 1938, stands as a fit coda to this chapter—symptomatic of the degree to which SF was achieving a societal penetration, the extent to which many people at least in the USA were starting to believe that the topoi of SF were real rather than fantastical. Famously, Welles' radio play, which dramatised the novel in the form of newscasts of an ongoing invasion, sparked mass panic when many people (perhaps over a million of them) believed it to be an actual report of an actual alien invasion. Listening to this punchy dramatisation today it is hard to believe that it deceived people; it contains many deictic indicators that it was fiction not reportage, including announcements that it was fictional, a non-realist timescale that collapsed days into hours, and frequent breaks for advertisements. But the panic it occasioned has become a tenet of popular mythology, and has itself been the subject of books and films, such as *The Night that Panicked America* (Joseph Sargent 1975). It expresses the truth that SF, its assumptions and icons, was now part of the mental furniture of most Americans—and most Europeans as well. There are good reasons why the decades that followed, the 1940s and 1950s, are known as the Golden Age.

NOTES

1. Peter Nicholls has this evocative description of pulps: 'printed on cheap paper manufactured from chemically treated wood pulp, a process invented in the early 1880s. The paper is coarse, absorbent and acidic, with a distinctive sharp smell much loved by magazine collectors. Pulp paper ages badly, largely because of its acid content, yellowing and becoming brittle. Because of the thickness of the paper, pulp magazines tended to be quite bulky, often ½ inch thick or more. They generally had ragged, untrimmed edges, and later in their history had notoriously garish, brightly coloured covers, many of the coal-tar dyes used to make cover inks being of the most lurid hues' [Clute and Nicholls, 979]. Garish, brightly coloured and lurid also rather nicely describe the content and style of most pulps.
2. Gary Westfahl, in the best and most detailed account of Gernsback's importance to the development of SF, admits the 'aesthetic failure' of *Ralph 124C 41+*, but insists nevertheless that this novel 'is the one essential text for all studies of science fiction, a work which anticipates and contains the entire genre' [Westfahl, 92–3]. He makes an interesting case, although Westfahl's definition of 'science fiction', of which he sees Gernsback as both the inventor and neglected genius, is much more narrowly (he might say 'precisely') conceived than mine, (see Westfahl, 287–318).
3. The great historian of the SF Magazine is Mike Ashley, from whose *The Time Machines* (2000) I derive the following (indicative not comprehensive) list of pulp titles, with the most important titles (in terms of longevity and/or influence) in bold: *Air Wonder Stories* (1929–30); ***Amazing Stories*** (1926–present); *A. Merritt's Fantasy Magazine* (1949–50); *Astonishing Stories* (1941–3); ***Astounding Science-Fiction*** (1930–present, as *Analog*); *Captain Future* (1940–44); *Captain Hazard* (1938); *Captain Zero* (1949–50); *Comet* (1940–1); *Cosmic*

Stories (1941); *Doc Savage* (1933–49); *Doctor Death* (1935); *Dynamic Science Stories* (1939); *Fanciful Tales of Space and Time* (1936); *Fantastic Adventures* (1939–53); *Future Fiction* (1939–43, later revived); *Futuristic Stories* (1946); *Marvel Science Stories* (1938–41; later revived); *Marvel Tales* (1934–5); *Miracle Science and Fantasy Stories* (1931); *Planet Stories* (1939–55); *Science Fiction* (1931–41); *Scientific Detective Monthly* (1930); *Science Wonder Stories* (1929–30); *Startling Stories* (1944–55); *Strange Tales* (1931–3); *Super Science Stories* (1940–43, later revived); *Tales of Wonder* (1937–42); *Uncanny Stories* (1941); *Uncanny Tales* (1940–43); *Unknown* (1939–43); *Weird Tales* (1923–54, later revived); *Wonder Stories* (1929–53; later *Thrilling Wonder Stories*).

4. The history of the different versions of Metropolis is complicated, with many different cuts being shown at different times; the longest was the 4189 metres version premiered in Berlin; the US cut was 3100 metres; recent restorations have produced cuts of 3153. For a more detailed discussion see Thomas Elsaesser, *Metropolis* (London: BFI 2000).

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Golden Age SF: 1940–1960

To describe the SF published in the 1940s and 1950s as Golden Age is—obviously—not to use a neutral or value-free description. Coined by a partisan fandom, the phrase valorises a particular sort of writing: hard SF, linear narratives, heroes solving problems or countering threats in a space-operatic or a technological-adventure idiom. Another approach at definition would be to link the golden age to the personal taste of John W Campbell, who played a larger role than anybody else in disseminating prescriptive ideas of what SF ought to be.

Campbell began his SF career as a writer of Gernsbackian pulp, and some of his stories are quite good, particularly his most famous ‘Who Goes There?’ (1938), which was later twice filmed as *The Thing From Another World* (Christian Nyby 1951) and *The Thing* (John Carpenter 1982). But it is as editor of *Astounding*, which he renamed *Analog* in 1961, a post he took up in 1938 and which he retained until his death, that Campbell made his greatest mark upon the genre. He was a proactive editor, with very definitive ideas of what constituted a good story, unafraid to press authors to revision, to revise their work himself without their say-so, or often simply to reject, in the service of a Platonic ideal SF story. A thumbnail definition of golden age SF might be that period when the genre was dominated by the sorts of stories that appeared in Campbell’s *Astounding* from the late 1930s into the 1950s. The sorts of stories that Campbell liked were: idea-fictions rooted in recognisable science, and later in his long career, in pseudo-sciences such as telepathy; can-do stories about heroes solving problems or overcoming enemies; expansionist humanocentric (and, often, phallogocentric) narratives; extrapolations of possible technologies and their social and human impacts. Campbell himself talked about a marked change in generic emphasis from pulp SF to a new form of the literature. In 1946 he conceded ‘to most people SF seemed lurid, fantastic, and nonsensical trash’; the new age required ‘stories of people living in a world where a Great Idea, or a series of them, and a Machine, or machines, form the background. But it is the man, not the idea of the machine, that is the essence’ [quoted in Westfahl, 182].

Fans bicker pleasantly amongst themselves over the dates most properly connected with this Age, nominally golden. There is a consensus that it starts in 1938–39, some say it ends when World War II does, some that it lasts into the 1950s, but this need not distract us. If we take a broader perspective, then the period of the 1940s and 1950s, although it contains many masterpieces of SF, is probably less interesting than the 1960s and 1970s. Both periods saw a new kind of cultural prominence for the genre, but only in the latter did a viable dialectic alternative to the restrictive Campbellian vision achieve critical mass (the, so-called, new wave), and it is during that time that Russellian and Feyerbandian SF interacted in abrasive, fertile ways to produce the century's greatest prose masterpieces. By the 1980s the success of *Star Wars* and its successors had moved the genre's centre of gravity from prose to visual texts, and the continuing fan-debate about the proper form of prose SF becomes much less important.

That older generation of critics, who grew up reading material from this period, can of course be forgiven their partiality for it, but the golden age is not only not the whole of SF, much of it is not even especially close to the taproot of the genre. In Westfahl's neat summary, Campbell 'makes writing a sort of thought-experiment, in which the author carefully creates a set of hypotheses regarding future events and lets the story grow out of those hypotheses' [Westfahl, 185]. It is not merely that this represents a constrainingly narrow prescription, although I tend to think it does (others will disagree). It is that it simply does not describe SF in the broadest sense, as it was being developed throughout the century. Indeed, I'm tempted to argue that even the best Campbellian SF carried within it parasitic anti-Campbellian elements, and that it is these as much as the more obvious components that makes such work great. Fans invoke a golden age because gold is highly valuable and ornamental. But it is also inert, unwieldy, and once removed from the symbolic exchange (in which it is coveted solely because people covet it) it has surprisingly few uses. SF, on the other hand, takes its Feyerabendian suppleness precisely from its universal reactivity.

ASIMOV

Isaac Asimov has a good claim to be the century's most famous SF author. Born in Russia but raised and resident in America from an early age, he was an exceptionally prolific writer who began to be published at the end of the 1930s, and whose output increased the older he got, as if his career were operating according to a literary principle of anti-friction. Most of his later output was non-fictional, and he wrote virtually no SF between 1958 and the 1980s (in which decade he began again publishing genre novels). The non-fiction is always professional and enlightening, and usually worth reading; the later novels are mostly feeble, less interesting in themselves than as symptoms of a dotage-hatched plan to synthesise and unify all his separate earlier universes. But it was the work he created during the 1940s and the early 1950s, at the very heart, chronologically and culturally, of golden age SF that have sustained his reputation.

One of his greatest achievements was also one of his earliest, the short story ‘Nightfall’ (1941). This concerns a civilised world that orbits multiple suns, such that there is always at least one source of light in the sky. Archaeologists are puzzled by the fact that the world’s previous civilisations seem all to have ended in catastrophic destruction every two thousand years. Astronomers realise that, once every two millennia, all the suns set at once and night falls. The story builds expertly towards its inevitable conclusion; the darkness finally comes, revealing an unimagined plenitude of stars in the night sky, which sight collapses the minds of the population. ‘Nightfall’ has been cited as the most popular or the greatest SF story ever published in many polls; and it has earned its place chiefly on the strength of its sense of wonder ending, the starry splendour that reveals the enormity of the cosmos to a people who had not understood the true scale of things and their own small situation in it. In other words, this deft little story recapitulates the conceptual crisis that had generated science fiction in the first place. It collapses the Copernican revolution into a single night. If this is why it has such resonance for readers steeped in the genre, it is also why it is so little known outside the genre.

Also written in the short-story idiom, although later assembled into three connected novels, was Asimov’s *Foundation* series. Originally eight linked but separate short stories published in *Astounding* between May 1942 and January 1950 they were fixed-up, as the phrase goes, into three novels: *Foundation* (1951), *Foundation and Empire* (1952) and *Second Foundation* (1953). The whole narrative is, slightly self-consciously, a translation of Gibbon’s *Decline and Fall of the Roman Empire* onto a cosmic stage. The Galactic Empire is on the verge of disintegration, and the only person to have foreseen this is the scientist Hari Seldon, the inventor of ‘psychohistory’, a discipline that can accurately predict the future for large populations (although not for individuals, where there are too many variables). Under the guise of an organisation compiling the *Encyclopedia Galactica* he establishes a Foundation to guide the galaxy through the inevitable millennia of anarchy, materially shortening the time required for civilisation to re-establish itself.

The *Foundation* series is greatly beloved by many SF Fans, although it is vitiated for some readers by a ubiquitous dryness of tone. The stories are almost entirely composed of dialogue, often of an expository or explicatory nature; there is little description, making the sequence visually inert; and the characterisation is rudimentary. Why do so many fans love it? In part because it deals in big ideas: the logic governing history; the possibility of a properly scientific prophesy; what role, if any, individuals have in larger historical circumstance. These are good and important matters, and Asimov interrogates them very well, lucidly and thoughtfully. But they have much less purchase today than they did in the 1940s and 1950s; not because history has ceased to matter, but because the development of Chaos Theory in the 1980s has finally put to rest the old Positivist philosophical chimera of a science so comprehensive that it could wholly predict the future. History, evidently, is a chaotic system. And whilst we cannot expect Asimov to have anticipated Chaos Theory, it is the case that in the *Dune* sequence, one of the great achievements of

1960s–1970s SF (for which see the next chapter), Frank Herbert intuitively felt towards an understanding that history was governed by irrational rather than rational laws. *Dune* stands up well today in ways that *Foundation*'s blind faith in science does not.

But this is not to snipe at Asimov's centrality to 20th-century SF. Rather it is to shine the spotlight away from *Foundation* and onto the other genuine contribution Asimov made to SF, and to a lesser extent to culture more generally, in his robot stories. Where robots had previously been, almost exclusively, insensate or dangerous embodiments of the threat of technology, Asimov imagined artificially intelligent robots as not only humane, but in many ways as *more* humane than humanity. The many robot short stories, and the dozen-or-so robot novels, all share one deeply felt focus, the exploration of ethical questions. In them, much more compellingly than in the Comptian-positivist rigidity of the *Foundation* series, Asimov manages to make the subtle, persuasive and dramatic exploration of moral questions vital and compelling.

An example is Asimov's first robot novel *The Caves of Steel* (1954), a brilliant hybrid SF-whodunnit. It is set in a future of two fundamentally differentiated human societies, on the one hand the crowded, dirty mass of life on overpopulated Earth, who are confined to the planet by their own fears and prejudices; and on the other the aloof, patrician, wide-open-space-conditioned manners of the Spacers, who live affluent lives on roomy colonised planets. The plot of the book is straightforward. An eminent Spacer scientist has been murdered on Earth. Given the hostility between the two populations, the investigation is a sensitive one. Earth detective Lije Bailey is given the job of investigating the crime, assisted by a Spacer robot called R. Daneel Olivaw. Unlike Earth robots, which are metallic and obviously artificial, Olivaw is constructed to resemble a human being exactly. Bailey shares the Earth prejudice against robots, and is initially hostile to his new partner, even to the extent of publicly accusing him of the crime. Such an accusation is demonstrated to be absurd; no robot could murder a human being, because all robots are constrained by the 'three laws of robotics'—Asimov in fact formulated these celebrated rules in collaboration with John W. Campbell:

[1] A robot may not harm a human being, or, through inaction, allow a human being to come to harm.

[2] A robot must obey the orders given to it by human beings, except where such orders conflict with the First Law.

[3] A robot must protect its existence as long as such protection does not conflict with the First or Second Law.

It is amazing how much dramatic and conceptual variety, across dozens of books and scores of stories, Asimov was able to generate out of these three little rules. The robot books are a toccata and fugue upon issues of logic, identity,

difference and resemblance. The binaries the book apparently establishes are, in fact, in the process of collapsing into a unity, just as Asimov himself spent his last two decades attempting to synthesise a larger identity out of the variegated imaginary universes of the Foundation books, the robot books and the Eternals of *The End of Eternity*.

At root, all the robot stories are *ethical* fictions, in which Asimov positions a race of properly Kantian ethical beings (the robots) against the much more nebulous ethics that characterise actual human activity. For Kant, ethical questions were judged as absolutes. ‘I am never to act,’ he declared in *Fundamental Principles of the Metaphysics of Ethics* (1785), ‘otherwise than so that I could also will that my maxim become a universal law’. What this means is that before I commit a murder, or tell a lie, I must first consider whether my acting in this way could conceivably apply as a universal law—how would things be if *everybody* murdered, or if *everybody* lied? In other words, ethics is a question of consulting not my personal advantage, but a universal moral code. There is, Kant insisted in the same work, an imperative which *categorically* commands certain conducts and forbids others. This categorical imperative runs, in many cases, contrary to human impulses: were a murderous madman with a gun to demand of me where my friend is hiding, I might consider it not only prudent but morally justified to lie; but for Kant, lying contravenes the categorical imperative and the proper thing to do would be to tell the truth, even in this extreme case. It is this absolutism that renders Kantian ethics unpalatable to many people.

With his robots Asimov created a race of sentient, thoughtful beings in whom the Kantian moral imperative is internalised. Robots do not consult their conscience when faced with an ethical dilemma, they obey the three laws that fully govern their behaviour. The genius of the invention is that the resulting race of beings is not absolutely determined. Asimov’s robots do not run on rails, their behaviour is not absolutely predictable, they are not morally clockwork figures. Indeed, the great theme of nearly all the robot novels and stories is the working-out of the implications for what it would be like to live life under this three-fold categorical imperative. Kant talked about, in his famous phrase from the beginning of the *Critique of Practical Reason*, ‘the starry heavens above me, and the moral law within me’. Asimov dramatises precisely this philosophical position. Terry Eagleton’s account of Kantian ethics is also, unwittingly, a precise delineation of the strengths of the Asimovian robot:

To act morally for Kant is to set aside all desire, interest and inclination, identifying one’s rational will instead with a rule which one can propose to oneself as a universal law. What makes an action moral is something it manifests over and above any particular quality or effect, namely its willed conformity to universal law. What is important is the act of rationally willing the action as an end in itself. [Eagleton, 78]

By following this logic Asimov casts light upon the ethical dilemmas of ordinary human life, and in particular the notion that a science fiction ought to embody the values of science in its ethics—according to *rational will*. This is a belief (widespread amongst SF writers) that is as unashamedly Enlightenment as is Kant's work itself. Bailey, initially distrustful of R. Daneel, refuses to believe that he/it possesses a 'drive for justice'. 'Justice,' he insists, 'is an abstraction. Only a human being can use the term.' His interlocutor, the Spacer Fastolfe, agrees, but invites Bailey to ask R. Daneel what he understands by justice.

'What is your definition of justice?'

'Justice, Elijah, is that which exists when all the laws are enforced.'

Fastolfe nodded. 'A good definition, Mr Bailey, for a robot ... [but] humans can recognise that, on the basis of an abstract moral code, some laws may be bad ones, and their enforcement unjust. What do you say, R. Daneel?'

'An unjust law,' said R. Daneel evenly, 'is a contradiction in terms.' [*The Caves of Steel*, 83–4]

When Fastolfe insists that 'you mustn't confuse your [human] justice and R. Daneel's' he is making the distinction between justice as an ethical absolute and as a subjective relativism.

It is easy to underestimate Asimov as a writer. The dull, flat prose style, the under-developed characters, a lack of visual and descriptive flair, these things can distract the critical reader from his considerable artistic strengths. Nor have favourable critics been able, effectively, to frame a defence of Asimov's importance except in terms of an entertainer, a puzzle-setter and humourist, a polymathic populariser and so on. Christopher Priest, himself a SF writer of enormous gifts, taught Asimov's *The Caves of Steel* to students in the University of London in 1974. 'Enjoyed reading it,' he recalled, in an interview with John Brosnan, 'great stuff, but there was nothing whatsoever to *say* about the book. It was all plot and seemed to have no content at all' [quoted in Ruddick, 46]. Nicholas Ruddick sees this response as typical, one strand of newer more 'literary' SF writers in reaction to the old depthless, plot-driven, empty enjoyment of older golden age writing. But there is a great deal more to Asimov than this. He used the form to create brilliant fictions of a materialist ethic and great imaginative power.

EARLY HEINLEIN

Heinlein towers over many critics' histories of SF.¹ He knew this himself towards the end of his career and, it seems, derived pleasure from it; for in Heinlein's writing there is an elision between the concepts of author and of authority. As precious and inert as gold, Heinlein's writing is the most representative of golden age fiction. If that seems too caricatured a synopsis of his significance, let me restate it. More than one generation (mine included)

grew up reading Heinlein's fiction as a sort of archetype of what SF should be: forceful, thought-provoking narratives written with a beguiling fluency and approachability; characters that travelled thrillingly about the solar system or through possible Earths without even losing plausibility or likeability. It may prove that his place in 20th-century SF becomes seen as less and less central as time goes on. He is certainly less generally read today than once he was. But his SF vision was much closer to the Campbellian ideal of golden age SF even than Asimov's, and his best writing retains its unmistakable, unique heft.

Heinlein's career passed through three stages. The early phase, before *Starship Troopers* (1959), contains what many see as his best work, what Brian Aldiss identifies as an 'ability to extrapolate' an 'eye for social quirks', a 'simple poetry' and above all an ability to be 'genuinely innovative' [Aldiss, *Trillion*, 389]. The middle period is often seen as surrendering these virtues to a strident, even desperate, puppet-master authorial persona, that harps incessantly and sometimes unpleasantly on a narrow range of ideological concerns—the importance of individual liberty conceived in American libertarian mode, with a pendant mistrust of government and a fetishisation of authority as such (elided with authorism). The final period, from *The Number of the Beast* (1980) through to his death in 1988, is dismissed by Darko Suvin in a single word, 'senilia' [Suvin 2000, 262]. But this is to underestimate the sheer strangeness of Heinlein's biggest success, and masterpiece, *Stranger in a Strange Land* (1961); a success made all the more difficult to parse given that all Heinlein's many subsequent books premised their continued fascination with the status of the messiah on a much more narrowly conceived authoritarianism. By the time of *Time Enough for Love* (1973), a drily corpulent novel (1000 pages or so) about the interminably extended life of a Heinlein-mouthpiece character called Lazarus Long, the authority figure has been more precisely defined as the patriarch, and Heinlein's studied non-conventionalism shrinks to a more straightforward sexist ego-fantasy. Incest, with which this novel is obsessively concerned, becomes the object correlative of the tacit belief that there is nobody Heinlein could possibly prefer sexually to Heinlein.

But it would be wrong to allow hindsight to tarnish the conceptual vigour and narrative brilliance of his earlier work. Golden Age Heinlein almost never put a foot wrong, fictively speaking. He possessed a deep understanding of the ways in which a populist idiom could be used to make serious points. He began writing shorter fiction for the magazine market, usually Campbell's *Astounding*. 'The Roads Must Roll' (1940), set in a future America in which people travel not in individual cars on stationary freeways but on vast networks of rolling roads (on which they can stand, or even enter travelling cafés and eat lunch). Heinlein, never one to be overly beguiled just by an ingenious piece of future-furniture, used these roads for a brilliant little tale about the power of collective labour. The workers who service the rolling roads synecdochally represent labour as such; and in the trope of rolling Heinlein found a marvelously expressive trope for revolution itself—it is revolution, in its political and literal senses that is the real theme of the story. The short story 'Universe'

(1941), followed quickly by 'Common Sense' (1941) (they were assembled into a novel called *Orphans of the Sky* in 1964), remains one of the classic generation-starship stories; the descendants of voyagers on an interstellar journey lasting many centuries have forgotten that they are even on a spaceship. The story 'Waldo' (1942), about a disabled inventor who uses artificial remotes to do the work his crippled body cannot, gave the language the word *waldo*.

The Puppet Masters (1951) is an expertly pitched alien-invasion story that shunts its narrative along so effectively, and creates so compelling a mood that it is only after the book has been closed that the reader starts to doubt the coherence of the whole. The short novel *Double Star* (1956) combines needle-sharp adventure and witty political satire, as an actor hired to impersonate a Solar System politician finds himself stuck in the rôle. *Have Space Suit—Will Travel* (1958) is a nippy, wonderfully constructed 'young adult' novel in which an ordinary kid gets caught up in wholly believable galactic adventures and returns to school wiser. *The Door into Summer* (1957) rattles through ingenious back-and-forth time travel adventures (a businessman who invents a robot and is double-crossed by his fiancée), articulating a can-do, individualist, free-enterprise ideology on the way.

This last feature, which became increasingly prominent as Heinlein's career progressed, is crucial. Insofar as it is meaningful to make the distinction, Asimov was an ethical writer where Heinlein was a political one. Both positions, clearly, are ideological, but Heinlein's work and life took place much more deliberately in the arena of politics. In 1938 he campaigned (unsuccessfully) for the Democratic nomination for a California assembly seat, and had connections with a (by US standards) radical left-wing group called EPIC. Later in his life his political allegiance changed completely to a right-wing, militaristic libertarianism. This *volte face* also involved the suppression of his radical youth, the story of which wasn't unearthed until the 1990s by Thomas Perry, and reported to a wider audience only in Thomas Disch's 1998 book *The Dreams our Stuff is Made Of*. Disch sums up Heinlein's postwar output unsparingly but accurately:

The main thrust of Heinlein's SF in the Cold War years was to advocate the perpetuation and growth of the military-industrial complex. ... [He] spoke out against restrictions on nuclear testing in 1956. At a World SF Convention in 1961, he advocated bomb shelters and unregulated gun ownership. He was a hawk in the Vietnam years ... These positions, and others more extreme, may easily be inferred from the SF he wrote in the same period. No hawk could boast sharper talons. [Disch, 165]

Starship Troopers (1959) is one of the most hawkish SF books ever written, a novel absolutely in love with all the trappings of military existence: boot camp, military training, the transformation of slobby teenagers into disciplined professional soldiers—in particular the ability to perform the business of ordinary living (washing, eating, moving to and fro) 'on the bounce!' instead of with that sluggish dumb-insolence so typical of the modern teenager. The troopers are needed to fight an implacable alien insectoid foe, with whom treaties would

be meaningless and who ruthlessly exterminate human life wherever they find it. Within this artificially black and white moral framework Heinlein's cavalry-charging certainty is difficult to resist; but taken out of its artificially pumped-up premises the novel is at least *quasi*-fascistic. Heinlein resented accusations of fascism from the first (and such accusations were made almost as soon as this novel was published). In the *Starship Troopers* universe only veterans have the vote, and many readers have taken this to mean that the franchise is limited to ex-soldiers; Heinlein counters that 'nineteen out of twenty veterans' in the novel 'are *not* military veterans ...[but] what we call today "former members of the federal services."' The book, he says, celebrates state service *in toto* rather than just military service. He goes on to insist that, in any democracy, voting should be something earned rather than a right (he is witheringly dismissive of democracy as the term is presently understood, the vote 'handed to anyone who is 18 years old and has a body temperature near 37°C') [Heinlein, *Expanded*, 398–99]. There's an element of disingenuousness here; *Starship Troopers* presents the reader with almost no characters other than military ones, and the tone is so gung-ho and celebratory that not one reader in a thousand would see it as anything other than a paean to the military—moreover, as James Gifford shows, 'by the text of the novel, Federal Service *is* entirely military' [Gifford, 11].² But to call Heinlein a fascist is to suggest that his books preach conformism to a militaristic national *volk* or subordination to a leader, which quite misrepresents his particular brand of ideological reaction. Whilst always a patriotic American, Heinlein was ideologically invested neither in racial nor geographical ideals, and his books consistently advocate a studiously responsible Contrarian position, especially with respect to the US Government. In other words, he was a right-wing libertarian, and his books preach a libertarian gospel. The question is how central this ideologically freighted libertarian problematic lies to the core of golden age SF itself. It seems to me the answer is very much central, although others might disagree. In another way Heinlein is singular; he is a characteristic, even a representative, golden age author who evolved in the 1960s to become a characteristic new wave author. That was no mean trick, although it does mean that the second half of my discussion of him must be postponed to the next chapter.

NORTH AMERICAN GOLDEN AGE WRITERS

The golden age was dominated by white, male North American authors, a fact which can tempt historians into seeing cohesiveness about the dozen or so major writers of the time when none actually existed. There were, it is true, unofficial alliances, or loose clubs, like the Futurians (writers of more liberal political affiliations in the New York area who would meet from time to time during the early 1940s). There were also fan conventions, which many writers attended (the first Worldcon, or World SF Convention, took place in New York in 1939), although these did not become the giant jamborees they are now until decades later. In general, however, the key names did not form a coherent league.

Jack Vance is one of the underappreciated giants of 20th-century SF, and indeed of 20th-century literature more generally. He belonged to no team or club, and his beautifully composed, prolifically produced books seem to argue no particular ideological agenda. His idiom was romance, in the generic sense of tumbling and exotic adventures that rattle through alien landscapes. Perhaps his many books, when read in bulk, seem to resolve into variations of the same tale; a solitary, rather terse hero makes his way through many interlocking, precisely rendered, ingeniously multifarious cultures, overcoming opponents, or pursuing vengeance. But it is a mistake to read Vance for the narrative, beguilingly readable though those narratives are. He was a world-builder, an imaginary anthropologist, and above all a stylist; and it is the conjunction of the unflagging fertility of his imagination and the elegant, chill mannerisms of his prose that generate the distinctive Vance quiddity. His first novel *The Dying Earth* (1950) portrays the ripe complexities of its thoroughly decadent culture in an icily forensic prose. It is an absolutely intoxicating book that had a deep impact on the subsequent development of Last Man fictions, a sub-genre of SF that (as we have seen) goes back a long way into the genre's past. But where a book like Grainville's *Le dernier homme* (1805) can only conceive of the end of the world in religious terms, Vance's amoral, vivid, slightly strange characters acknowledge no superior spiritual authority except their own ingenuity.

Big Planet (1957) is a spicy adventure on the oversized and metal-bereft planet of the title. *The Dragon Masters* (1963), like *Dying Earth*, treats fantasy tropes in an SF manner. *Emphyrio* (1969) may be Vance's most perfect novel. Its setting is a claustrophobic world in which artists and artisans work in a complex collective to produce works of art under the oppressive rule of a caste of Lords, and Vance renders every tittle and jot of this society with the clarity of a steel engraving. The adventures of Vance's hero Ghyl Tarrok lead him to an understanding that his world, made familiar by Vance's detailed descriptions, is actually radically alien and strange. This, indeed, is the kernel of Vance's genius. His carefully mannered prose slips effortlessly from familiar to alien, treating both with the same disinterested precision. The effect is the witty yet chilling delineation of how alienness actually is. In this passage Ghyl is travelling through open land with some of the Lords, who are unused to such hardships. This is the moment when it dawns on Ghyl, and us, that these aristocrats, whom we had assumed to be decadent humans, are actually alien beings, with radically inhuman perceptions and attitudes.

Ghyl built a fire on the old stone hearth, which irritated the lords.

'Need it be so warm, so bright, with all those little whips and welts of flame?' complained Lady Radance.

'I suppose he wants to see to eat,' said Ilseth.

'But why must the fool toast himself like a salamander?' demanded Fanton crossly.

'If we had maintained a fire last night,' Ghyl returned, 'and if the Lady Jacinth had used my advice to climb high in the tree, she might be alive now.'

At this the lords and ladies fell silent, and their eyes flickered nervously up and down. Then they retreated into the darkest corners of the shack and pressed themselves into the walls: a form of conduct which Ghyl found startling. [Vance, *Emphyrio*, 149]

This goes beyond merely satirising the vacuity of the upper classes, it is a means of apprehending a radical otherness. Vance's other major achievements are all sequences of novels. The 'Planet of Adventure' series (a very uninspiring title for some of Vance's most inspired, marvellous books) is made up of *City of the Chasch* (1968), *Servants of the Wankh* (1969) and *The Dirdir* (1969), and holds familiarity and genuine alienness in perfect balance. Vance and his American publishers were unaware of the vulgar British slang meaning of the word wank, and when it was pointed out they changed the title to *Servants of the Wannek*, which is hardly better. The book, though, is a marvel, deeply and strangely in love with radical otherness. Reith is travelling by raft across a wasteland with a varied group of travellers when they see an approaching alien army.

'The Green Chasch,' said Traz. 'They know we're here.'

The Green Chasch on their leap-horses were visible now to the naked eye: dark motes hopping and bounding in bone-jarring leaps.

Ylin-Ylan drew her breath. 'Are they coming for us?'

'I imagine so.'

'Can we fight them off? What of our weapons?'

'We have sandblasts on the raft. If they climbed the cliffs after dark they might do some damage. During daylight we don't need to worry.'

Reith thought that they showed no great zest for the business of scaling the wall. Setting up camp, they tethered their leap-horses, thrust chunks of a dark sticky substance into the pale maws. They built three fires, over which they boiled chunks of the same substance they had fed the leap-horses, and at last hulking down into toad-shaped mounds, joylessly devoured the contents of their cauldrons. The sun dimmed behind the western haze and disappeared. Umber twilight fell over the steppe. Anacho came away from the raft and peered down at the Green Chasch.

'Lesser Zants,' he pronounced. 'Notice the protuberances to each side of the head? They are thus distinguished from the Great Zants and other hordes. These are of no great consequence.'

'They look consequential enough to me,' said Reith. [Vance, *Planet*, 232]

So far, so planetary-romantic. But it's at this point in the story that Vance introduces us to a Phung.

Traz made a sudden motion, pointed. In one of the crevices, between two vanes of rock, stood a tall dark shadow. 'Phung!'

Reith looked through the scanscope and saw the shadow to be a Phung indeed. From where it had come he could not guess.

It was over eight feet in height, in its soft black hat and black cloak, like a giant grasshopper in magisterial vestments.

Reith studied the face, watching the slow working of chitinous plates around the blunt lower section of the face. It watched the Green Chasch with brooding detachment, though they crouched over their pots not ten yards away.

‘A mad thing,’ whispered Traz, his eyes glittering. ‘Look, now it plays tricks!’

The Phung reached down its long thin arms, raised a small boulder which it heaved high into the air. The rock dropped among the Chasch, falling squarely upon a hulking back.

The Green Chasch sprang up, to glare toward the top of the butte. The Phung stood quietly, lost among the shadows. The Chasch which had been struck lay flat on its face, making convulsive swimming motions with arms and legs.

The Phung craftily lifted another great rock, once more heaved it high, but this time the Chasch saw the movement. Venting squeals of fury they seized their swords and flung themselves forward. The Phung took a stately step aside, then leaping in a great flutter of cloak snatched a sword, which it wielded as if it were a toothpick, hacking, dancing, whirling, cutting wildly, apparently without aim or direction. The Chasch scattered; some lay on the ground, and the Phung jumped here and there, slashing and slicing, without discrimination, the Green Chasch, the fire, the air, like a mechanical toy running out of control.

Crouching and shifting, the Green Chasch hulked forward. They chopped, cut; the Phung threw away the sword as if it were hot, and was hacked into pieces. The head spun off the torso, landed on the ground ten feet from one of the fires, with the soft black hat still in place. Reith watched it through the scanscope. The head seemed conscious, untroubled. The eyes watched the fire; the mouth parts worked slowly.

‘It will live for days, until it dries out,’ said Traz huskily. ‘Gradually it will go stiff.’

The Chasch paid the creature no further heed, but at once made ready their leap-horses.

They loaded their gear and five minutes later had trooped off into the darkness. The head of the Phung mused upon the play of the flames.

I remember how powerfully this brief interlude in the larger narrative affected me when I first read it as a teenager. There is something that resists comprehension, without being merely random or surreal, about the Phung’s apparently capricious disregard for its own life. An eight-foot high grasshopper dressed like an 18th-century traveller; its decapitated head, slowly drying out, yet still philosophically observing the motion of the flames. Rarely does fantastic writing, or any kind of writing, generate an image of such power.

Almost every Vance novel has moments like this, in which estrangement and a kind of uncanny elegance interact. The ‘Durdane’ trilogy [*The Anome* (1973), *The Brave Free Men* (1973), *The Astura* (1974)] is set in a world fractured into innumerable cantons, each with their own laws and customs, linked only by fear of the justice meted out by the sinister ‘faceless man’. The ‘Demon Princes’ series [*The Star King* (1964), *The Killing Machine* (1964), *The Palace of Love* (1967), *The Face* (1979) and *The Book of Dreams* (1981)] is a revenge tale, in which five wealthy supervillains are dispatched, one per novel, by the aggrieved protagonist. The series cannot avoid a certain repetitiveness, although it is as

ingenious and complex as anything Vance wrote. Vance kept up his output into his tenth decade, and was still writing and publishing right up until he died. But I return to that eloquent image in *Servants of the Wankh*. In the novel, Traz and Anacho start an argument regarding the nature of the Phung ('Traz declared them to be products of unnatural union between Pnumekin and the corpses of Pnume ... "Sheer idiocy, lad!" said Anacho with easy condescension ... [Traz] lowered his lip in a sneer. "No! They go singly, too mad to breed!" Anacho made a finger-fluttering gesture of fastidious didacticism.') The fact of this disagreement, and its elegantly mannered expression, matters much more than the content of it. A mad thing! It plays tricks. But tricks are the point in Vance's writing. 'Consider the human mind!' advises Apollon Zamo in *Showboat World* (1975). 'It is capable of amazing feats when used properly. Conversely, without exercise it atrophies to a lump of gray-yellow fat.' Vance's writing shows us a human mind in proper motion. Even when severed and sitting on the ground, the Vancean head imagines things more elegantly, more meditatively and with more antic marvel, than any other writer of his generation.

Vance's effortless strangeness compares instructively with the more forced, heavy-footed oddness of the writing of Canadian A E Van Vogt. Van Vogt has few champions amongst academic critics of the genre nowadays, many of whom dismiss as merely incoherent his intricately but discontinuously plotted novels. The books are undeniably rococo, often implausible, and they certainly demonstrate an adolescent infatuation with the compensatory fantasy of superheroes misunderstood by a boorish world. It used to be said that Van Vogt was too slippery and non-commonsensical a writer for the straightforward technical rationalism of American Golden Age SF—he was, in fact, a European *avant garde* author born on the wrong continent. It was certainly the case that his books enjoyed much greater popularity across the Atlantic. For instance, French readers were much more receptive to the complex multi-reality shenanigans of *The World of A* (1948; the last element in the title is pronounced, and is printed by some publishers as, 'Null-A') than American ones. But there is nevertheless something ineluctably North American about Van Vogt's fantasies, not least in his fondness for guns. So, the right to bear arms (admittedly SF guns that know, magically, whether their wielders are firing in self-defence or in criminal assault and only permit the former) becomes symbolic of all personal freedom against tyranny in *The Weapon Shops of Isher* (1951), and are, in the oblique, associative manner of Van Vogt's writing, somehow also tied in with nothing less than the creation of the entire universe, the Big Bang which ends the book and commences everything else. But the most characteristic Van Vogt book is *Slan* (1946), the story of a slan, or mutant *homo superior* called Jommy Cross, with tiny horns growing from his head, two hearts and vast intellectual capacity. Cross is persecuted by normal humans, and we first encounter him on the run from a murderous world. But the story bifurcates, or multifurcates, in a bewildering series of directions, and at the end is governed by an almost dream-logic in the assemblage of its various elements. For many this only increases the novel's oblique potency. Indeed, many SF fans have taken the slan

as a straightforward metaphor for the SF Fan (the slogan goes ‘fans are slans’), persecuted by a cloddish world yet not only inherently cleverer and better, but also—as Van Vogt’s peculiar story works through its associative tangles—somehow, obscurely, the secret rulers of the world. A more pertinent connection to make, with regard to this story and much of Van Vogt’s output, is the religious one. This is not only because Van Vogt, with his almost automatic-writing aesthetic, intuitively tapped into the buried taproot of SF, it is also because his later career literalised the theological sub-text of much of his writing in a personal commitment to the new religion being founded by fellow SF author L Ron Hubbard. Van Vogt was very caught up with Dianetics, although he was not as involved in Hubbard’s later religious cult Scientology. But it seems clear that this yearning towards the mystic complexities of Hubbard’s invented religion chimed with a quasi-gnostic sense of significance that lurked behind the pulp trappings of his work.

SF fandom holds the memory of American writer Cleve Cartmill particularly dear for one golden age fluke. His short story ‘Deadline’ (published in Campbell’s *Astounding* in 1944) described the atom bomb in detail, a year before the actual bomb was ready. Agents from the US Army Counter Intelligence Corps investigated the *Astounding* offices convinced that military security had been breached, but, in fact, Cartmill had simply extrapolated from scientific information in the public domain. Campbell later boasted about this as symptomatic of SF’s ability to see into the future.

The prolific and estimable American writer Poul Anderson once seemed amongst the most important writers of SF. ‘He is central to the SF field,’ opined John Clute in the 1990s, ‘although sometimes—this is the downside of reliability—he tends to be taken for granted’, [Clute, 150]. Now he is little read, which is a shame, since his best books are not only excellent, but eloquently expressive of the core dialectic of SF itself. His first novel *Brain Wave* (1954) takes as its premise that the Earth has been moving through a zone of cosmic radiation that has artificially retarded our intellectual development. As we move out of this area intellect suddenly develops exponentially, and everything changes. It is a novel, in other words, about transcendence, touching on the same quasi-religious keynotes as Clarke’s *Childhood’s End* (discussed below) although in a less apocalyptic manner. Anderson went on to publish nearly a hundred books, many of them military-based space opera, always professionally and entertainingly done. Many of these are haunted by a theological-ontological anxiety. For example, in *Tau Zero* (1970) a malfunctioning spaceship picks up more and more velocity, approaching the speed of light and (as Einstein predicted) expanding to almost infinite size, pushing galaxies out of the way. Time dilation means that the crew survive the end of the universe and eventually fly into a reborn cosmos. Most of the problems they face are practical and technical, but everything they do is shadowed by what crew member Ingrid Lindgren calls ‘that question. What is man, that he should outlive his God?’ [Anderson, *Tau Zero*, 171].

Similarly, it is hard to say why the Lithuanian-American Algis Budrys is no longer read today. In their time his novels had many admirers, and they still read very well. *Who?* (1958) concerns a man rescued from near-death by extensive technical prostheses; turned into a cyborg, he may or may not be a Cold War spy. The novel (though not the rather simplistic film made from it, *Who?* [Jack Gold 1974]) manages to coax from its creaky premise an interesting meditation on existence and alienation.

Rogue Moon (1960) concerns the discovery of an alien artefact on the Moon, the exploration of which is vital for the national security of the USA (in some manner not spelt out). The problem is that the artefact kills any explorer who does not proceed according to a very particular, arbitrary and counter-intuitive set of steps. More, the artefact seems to warp the laws of physics. After the first casualties, the USA falls back upon sending physical copies of explorers created by a matter-transporter, conveniently invented by the novel's hero just prior to the discovery. When the copies are killed on the Moon the originals on Earth remain alive. But there's a problem: experiencing death drives the explorers out of their mind. Only a James Bond-like ex-spy, defined by his existentially cavalier attitude to danger and death, proves able to endure repeatedly dying, and so to conquer the mysterious labyrinth.

It is worth dilating a little on Budrys' work, for however neglected he is today both his strengths and his limitations are expressive of the logic of the golden age more generally. *Who?* works its tension by contrasting the world of science, conceived in terms of engineering and technology, with the world of human subjectivity, the inward nature of a human being's essence. The former is presented as patently comprehensible; the latter as a mystery beyond the power of experiment. The novel's considerable narrative tension parses an 'is-he-isn't-he?' unresolved question against the methodical attempts by the US authorities to decipher the mystery of the protagonist. The frame of the novel, an exaggerated Cold War between Soviet East and Capitalist West, is never questioned. The world of education in this future is quite startlingly utilitarian.

Tech instructors were people who never gave a doubtful answer the benefit of the doubt ... Tech students were presumed capable of digesting as much of the text as was assigned to them, and of knowing exactly what it meant. The instructors lectured quietly, competently, and ruthlessly, never going back to review a point or, in tests, to shade a mark because an otherwise good student had slipped once. [Budrys, *Who?*, 651]

The novel's admiration for this hard-core pedagogic philosophy shines off the pages (the protagonist, Lucas Martino 'admired it as the ideal system for its purpose'). Ideologically the novel takes for granted certain assumptions about, for instance, gender. Edward Hawks, the hero of *Rogue Moon*, is a supercompetent scientist and inventor whose ingenuous puzzlement at the nature of womankind strikes a very strange tone indeed for a modern reader: 'what

bothered me [about women] was that here were these other intelligent organisms in the same world with me, and there had to be some purpose for that intelligence.' He goes on:

If all women were for was the continuance of the race, what did they need intelligence for? A simple set of instincts would have done just as well. And as a matter of fact, the instincts are there, so what was the intelligence for? There were plenty of men to take care of making the physical environment comfortable. That wasn't what women were for. [Budrys, *Rogue Moon*, 114–15]

Budrys is mildly mocking his own character here, of course; a brilliant engineer who understands machines perfectly yet is baffled by the fact that he has fallen in love—the above speech is delivered to his innamorata, Elizabeth, whom, the novel tells us, 'sat watching, a faint smile on her face. But *Rogue Moon* is not *critiquing* this fathoms-deep sexism of Hawks. It is holding it up for the sort of amused recognition that chaffs the extremity rather than the nature of Hawks' incomprehension. Physics, the novel says, is knowable; the fact that women are not is to their discredit as a gender. Indeed, I look back at the summary of the novel in the previous paragraph and note that, although it accurately puts the exploration of the alien artefact at the heart of the story, the way Budrys actually tells his story gives relatively little time *to* the Moon. Three quarters of the novel happen on Earth and are about the competition for dominance between three self-defined alpha-males: Hawks, the explorer Barker, and Connington, a manipulative administrator on the team who wants Barker's girlfriend, the beautiful Claire. Barker treats Claire this way: 'Barker's hand cracked over, and Claire fell back, holding her cheek. Then she grinned' [Budrys, *Rogue Moon*, 30]. When Claire eventually leaves him for Connington, the hero-explorer tells her with revulsion: 'I never thought you'd turn carrion-eater' [Budrys, *Rogue Moon*, 112]. Connington is not a real man, according to this particular code of manliness; and no woman could possibly find any kind other than the 'real man' archetype attractive. It goes without saying that Barker eventually masters the alien labyrinth, for the artefact located on the inconstant Moon stands as objective correlative for the irrational unknowability of womankind. Sheer masculine bravery and persistence, married to a refusal to give in to existential doubt even in the teeth of death, prove the key. Connington gets his girl, and Hawks solves the technical problem of the artefact and gets the toothsome Elizabeth. Man's in his heaven and all's right with the world. I'm being a little unfair to Budrys here, who treats his central metaphors with more sophistication than is true of many pulps. But one reason why these once heralded masters of SF have fallen from general currency is that their speculation so often depends upon an ideological base that seems, to many people, simply untenable today. Hitting a woman is not manly; and the woman on the receiving end of such actual bodily harm will not grin complicity with her attacker. Indeed, it seems incomprehensible to us that anybody ever thought in such terms.

This is not just a question of gender representation, although it is striking how rarely (in many cases, how *never*) female characters with agency appear in the writing of these male golden age SF ‘masters’. There is, in many of these stories, a tacit identification of science with white masculine authority, and a related contempt for those who do not recognise the inevitability of this connection. Cyril M Kornbluth wrote a great many clever, entertaining stories before his early death, almost all of them characterised by a witty sardonicism. But these stories tend to orbit an unspoken ideological focus that certain people (in Kornbluth’s fiction, always men, scientifically literate, usually white) are to be respected, and others (a much larger group he calls morons) are to be derided. ‘The Little Black Bag’ (*Astounding* July 1950) is a fun time-slip story, when advanced medical technology inadvertently ‘dropped’ by the future transforms the present. Since the story’s focus is almost entirely on the present, it is hardly necessary that Kornbluth’s future be a world where a hard-working group of put-upon competent white men run things for a much larger population of average-IQ-45 idiots and morons. Yet so it is. Indeed this idea so appealed to Kornbluth that he revisited it in ‘The Marching Morons’ (*Galaxy Science Fiction*, April 1951), a problem-solution story in which the problem is how the elite tiny minority who actually keep the world going can exterminate the five billion ‘morons’ who constitute the world’s actual population. The solution is to recruit a confidence trickster called Barlow from the 20th century (he happens to have arrived in the future via suspended animation) who agrees to ‘solve’ this problem if he is afterwards made World Dictator. Barlow’s scheme is to tempt the morons to new lives on Venus, portrayed by propaganda as a paradise, although in fact all the ships transporting the morons self-destruct when away from the Earth. The implication is that the ‘geniuses’ of this future world have too much integrity to be able to come up with so fundamentally dishonest a scheme, although that doesn’t stop them eliminating Barlow when his scheme has succeeded. That a story written half a decade after Auschwitz could handle the mass extermination of billions deemed ‘sub-human’ in so complacent a manner is a genuinely startling thing. More, members of the minority ruling caste explain to Barlow that they are the inheritors of a secret eugenicist cabal:

some generations ago, the geneticists realized at last that nobody was going to pay any attention to what they said, so they abandoned words for deeds. Specifically they formed and recruited for a closed corporation intended to maintain and improve the breed. We are their descendants, about three million of us. There are five billion of the others, so we are their slaves. [Kornbluth, 157]

A strange definition of slavery, we might think, since the ignorance of the gum-chewing, comic-reading five billion leave the minority in control of all the elements of modern life: ‘during the last couple of years,’ one boasts, ‘I’ve designed a skyscraper, kept Billings Memorial Hospital here in Chicago running, headed off war with Mexico and directed traffic at LaGuardia Field in New York.’

More to the point is the way the story at no point questions the *Herrenvolkish* self-justification of this self-selected elite. H G Wells would have been proud. Kornbluth's later novel *Search the Sky* (1954) involves a starship that returns to Earth after a long voyage to find it in control of the Marching Morons; and even the widely liked satire on the advertising industry Kornbluth wrote in collaboration with Pohl, *The Space Merchants* (1953), can't quite keep its disdain for the easily manipulated masses within the bounds of its breezy comedy.

One particular Golden Era story, by an otherwise little regarded author, has become talismanic of the ideological divisions I am circling around in my discussion here. This is 'The Cold Equations' (*Astounding*, August 1954) by Tom Godwin. A space freighter is carrying vital medical supplies to a distant world. The captain (of course, a man) discovers a stowaway (a young girl) whose extra weight means the ship does not have enough fuel to decelerate when it reaches its destination; it will inevitably crash, dooming not just the two of them but the millions who are relying on the medicine the ship carries. Accordingly, and despite both parties regretting its necessity, the girl is cast out of an airlock. The story says the 'cold equations' of physics cannot be begged off or bargained with. But it says this in order to justify, and indeed valorise, a toughness of mind, an ability to make hard decisions, that is coded as masculine, and which has nothing to do with physics and everything to do with right-wing ideology. Yet the world of the story is so restrictive, its chess-problem parameters so narrowly framed, as to remove it from meaningful relatability to real-world life. It is what philosophers call a trolley problem, and one designed to yield a particular answer. John W Campbell, the *Astounding* editor who bought the story, sent it back to Godwin three times for revisions (Godwin kept finding ingenious shifts to save the girl's life). Presenting the girl's death as a tragic necessity occasioned by physics, as opposed to the moral delinquency of the company that built a spaceship without extra supplies of fuel or other fail-safe device, is one sort of ideological bias. Presenting the girl's death as inevitable at all is another. Could the captain not send a message to another ship to come retrieve the girl, or bring him extra fuel? Was there *literally* nothing else on the ship of equivalent mass to the girl that could be jettisoned? No chairs, beds or instrumentation? Could aerobreaking, a slingshot manoeuvre or some other mass-transfer not be effected in the target system?

Actually these sorts of speculation miss the point. The trolley-problem of 'The Cold Equations' is a shibboleth, in the strict sense that it serves to call forth a specific, ideological-tribal reaction. My response is one such reaction; a hard right winger is liable to react in a different way. And it should be noted that not all golden age SF authors, not even the ones who happened to be straight white men, were happy with this endorsement of hardness as the key value to be ported from science over to human affairs. Cordwainer Smith (the pseudonym of American author Paul Linebarger) wrote a great many highly regarded short stories, all set in the same future universe, the chronology of which Smith worked out in great detail. His writing is poised and vivid, his ideas multifarious and striking and have been widely copied.³ One of Smith's greatest strengths, though, is the way he balances the chilly sublime of mas-

culine physics against the social needs of humanity. In his most famous story, ‘Scanners Live in Vain’ (*Fantasy Book*, June 1950), society depends upon space travel but unmediated exposure to space drives people mad. A caste of sixty-eight scanners, isolated from their human emotions and even from physical sensations by technology, control all spaceflight, moving human passengers inside shielded stasis tubes. Occasionally these scanners ‘cranch’, or revert to more normal human existence, to do such things as marry and have children; but they only ever do so for short periods. The story concerns a scanner called Martel who happens to have ‘crunched’ when an emergency meeting of scanners is called because a scientist, Adam Stone, has invented a way by which ordinary people can fly through space. The scanners passionately vote to murder him and so preserve their monopoly. Because of his ‘cranch’ Martel sees this meeting through human eyes.

Most meetings that he attended seemed formal, hearteningly ceremonial. When he was not crunched he noticed his body no more than a marble bust notices its marble pedestal ... the long-winded ritual broke through the terrible loneliness behind his eyes and made him feel that the scanners, though a confraternity of the damned, were nonetheless forever honored by the professional requirements of their mutilation. This time it was different. Coming crunched ... he saw his friends and colleagues as a lot of cruelly driven ghosts, posturing out the meaningless ritual of their indefeasible damnation. [Smith, 18]

Smith’s story is one of the most humane interrogations of the ‘hard’ logic of science ever written.

New York-born Alfred Bester, though fiercer, nonetheless stands out, in part for the way he tacitly critiques the masculinity he also constructs his exciting stories around. Bester published relatively little science fiction, but his impact on the genre has been enormous. Single-handedly, it can be argued, he invented both new wave and cyberpunk. His first SF novel, *The Demolished Man* (1953), follows the attempts by Ben Reich to avoid arrest for the murder he committed in a world of telepathic ‘espers’ who can detect most crimes before they are even committed. It is written in a sparky, evocative and laconic manner; hard-boiled hardly does justice to Bester’s command of his idiom, which is never conventional or derivative. His best novel, *Tiger! Tiger!* (1956; in the US published as *The Stars My Destination* 1956), is claimed by some as the single greatest science fiction novel of the century. It is a *bildungsroman* staged against a brilliantly realised backdrop of a war-torn, hyper-kinetic future solar system. Gully Foyle begins the novel as barely human, a grunting, illiterate Mechanic’s Mate 3rd Class. He survives the destruction of the spaceship *Nomad* and when a passing ship refuses to rescue him he becomes gripped by a thirst for revenge, which motivates him to escape his prison and pursue those who abandoned him, transforming himself in the process into a highly intelligent, educated, resourceful individual, and ultimately into a sort of saviour of mankind. It transpires that the fate of the *Nomad* was bound up with its secret cargo, a mysterious war material called PyrE that functions brilliantly as a plot McGuffin. Still, the story of this novel,

breathless and gripping though it is, is less important than the mood and the sheer exuberance of Bester's world-building. The solar system of Bester's 25th century is one in which people teleport instantaneously, something accomplished in this universe by an act of pure will unmediated by technology. Once a person realises how, and provided he or she can visualise the destination, they can pop instantaneously from place to place, a practice called jaunting ('a term which,' as Scott Bukatman points out, 'describes not only the teleportation technique, but also Bester's hyperactive narrative structure and "jaunty" style', Bukatman, 352). The only barriers to jaunting are not being able to visualise one's destination (which means that security becomes a matter of building elaborate mazes and keeping locations secret), and—more fundamentally—the vacuum of space, across which nobody can jaunt. As Foyle grows across the trajectory of the novel's plot, we come to realise that he has, without realising, cracked the trick of jaunting through space, and so the novel's upbeat American title closes the story off in resounding, even messianic fashion. In many ways the book is modelled on Jacobean revenge drama, but Bester is not really interested in the limited theological cause and effect speculation of the revengers (God has a severely reduced place in his imagined solar system, and organised religion has been outlawed). Instead this is a book about will, imagined with positively Nietzschean fervour. The book's two central conceits elaborate this key theme. Jaunting, for instance, means that it is possible to travel instantaneously from place to place simply by thinking about it, visualising the destination and, ultimately, wishing it so; in other words, jaunting is the externalisation of the desire to travel, the symbol that links wish and destination. PyrE, similarly, is a form of explosive matter detonated by thinking about it. 'Through Will and Idea,' explains Presteign, the patrician villain of the book, 'PyrE can only be exploded by psychokinesis. Its energy can only be released by thought. It must be willed to explode and the thought directed at it.' [Bester, *Tiger*, 217]. Which is to say, PyrE is the concrete externalisation of mankind's will to destruction, the symbol that links wish to destruction. In this sense Bester's novel, which had an incalculable influence upon new wave and cyberpunk writing, carries within it the germ of a Nietzschean triumph of the will. That, in a nutshell, is the true dream of the golden age: the technological manifestation of the will of the (masculine) hero/reader.

This extended and fundamentally ideological reading of US golden age science fiction is, of course, inevitably distorting. The emphasis on a white masculine aesthetic ignores the fact that various American women also published notable SF during the 40s and 50s. To mention only two. Leigh Brackett was later to achieve lasting SF distinction by writing the screenplay for the best of the *Star Wars* movies, *The Empire Strikes Back* (1980); but she published extensively during the 1950s and 1960s. The professional skill with which she inhabited the various space-adventure idioms of the 1950s magazines mean that many of these stories have a slightly white-bread quality. Nonetheless there are cross-currents less often found in the more masculinist writing of this era.

For instance, the stories Brackett wrote about her space Tarzan character, Eric John Star, a human orphan raised by aboriginal Mercurians (the first of these was ‘Queen of the Martian Catacombs’, *Planet Stories* June 1949) has rather more sympathy with the downtrodden and colonised aliens of Brackett’s future solar system than is the case in most such sub-Burroughsian adventures. And in *The Sword of Rhiannon* (1953) she wrote a powerfully memorable story in which an alien time-machine sends its characters back millions of years to the planet Mars before its oceans evaporated. Rarely does SF manage to balance newness and nostalgia so perfectly.

In the case of Andre Norton we have a woman who began publishing her inventive planetary romances and sword-sorcery adventures in the early 1930s and was still publishing in the 21st century, making her difficult to categorise in terms of chronological movements. Her stories return over and again to narratives in which young protagonists overcome adversity in a rite of passage, though they are not strictly *bildungsromane*, for the function of these stories is not to explore adulthood but rather to celebrate the resourcefulness and energy of youth. She wrote Young Adult fiction before that marketing category had been created, and in the wake of her several hundred titles SF memorialises her by naming its premier prize for YA writing the Andre Norton Award.

Other women writers who were working in the 1950s are mentioned elsewhere in this study: C. L. Moore, in the previous chapter, and Marion Zimmer Bradley, in the following one.

THE POSTWAR BRITISH SCENE

If American golden age SF was, by and large, bullish, can-do and outward looking, British postwar SF had, and to some extent has maintained, a rather different tone: more introverted, more downbeat and pessimistic. Such a state of affairs is doubtless what we might expect. America in the 1950s and 1960s was an expansive nation, Britain a shrinking one. It is certainly hard to overstate just how profound was the cultural shift experienced by Britain, and especially England, after the end of World War II. A nation which had once ruled an empire encompassing a fifth of the globe’s population underwent its inevitable diminution, a retreat from Empire and a world role into a more proportionate position as a small island on the margins of Europe. To speak very broadly, this transformation manifested itself in meraphoric cultural phenomena. The grimness of postwar life (food rationing, for instance, continued for many years after the war) filtered through into a series of more or less downbeat, pessimistic works of art. SF was a mode that allowed the inflation of this sense of loss—an obscure and infuriating sense, since ‘we’ had after all won the war, but a loss palpable nevertheless—onto global, or cosmic arenas. The masterpiece of this particular depressive-pessimistic idiom is George Orwell’s *Nineteen Eighty-Four* (1949).

Orwell’s dystopia is an extrapolation from the totalitarian regimes of the 1930s and 1940s. His future world is divided between Oceania (the old USA,

Britain, Australasia and South Africa), Eurasia (the old Russia and continental Europe) and Eastasia (China and East Asia). The remaining global territory is continually being fought over in a never-ending world war. Each of the three world-states is governed by absolutist regimes. The Party of Oceania, with which the novel is mostly concerned, rules according to the principles of Ingsoc, or English Socialism, a Stalinist state-system. The main point of the novel is to anatomise this sort of political reality, both its actual ideological rationale and the miserable quality of life it imposes on its subjects. *Nineteen Eighty-Four* concerns Winston Smith, an inhabitant of Airstrip One (the old British Isles) who endures a shabby, worn-down miserable existence characterised by chronic shortages of necessities, rationed supplies of poor-quality food, low-grade gin drunk at all hours. The population live under constant surveillance by the Party; all citizens have a telescreen in their room, a two-way device that broadcasts propaganda at them and allows monitors to observe them at all times. Loyalty to the Party is focussed on the notional figure of one man, Big Brother, whose face is on posters everywhere: 'a man of about forty-five, with a heavy black moustache and ruggedly handsome features ... BIG BROTHER IS WATCHING YOU the caption beneath it ran' [Orwell, *Nineteen Eighty-four*, 5]. Through the system of telescreens, this slogan is literalised. The narrative of the novel details Smith's dissatisfaction with the world in which he lives. He keeps an illegal diary in which he records his dissident views. He has an illegal affair with a fellow worker called Julia—sex, except for the purposes of reproduction, being a criminal act for party members in Oceania. This affair gives Smith hope that, although Big Brother is too powerful to oppose on a social scale, it remains possible for people to be free in their hearts, in their purely personal connections. But later in the novel the secret affair is uncovered, Smith and Julia are arrested by the Thought Police, tortured and wholly broken. In an extended session with a senior Party official, O'Brien, Smith is taught the hard lesson that reality is only the footstool of power. O'Brien puts it in these terms: 'there is nothing we [the Party] cannot do. Invisibility, levitation—anything. I could float off the floor like a soap bubble if I wish to.' Smith challenges him:

'But the whole universe is outside us. Look at the stars! Some of them are a million light-years away. They are out of our reach for ever.'

'What are the stars?' said O'Brien indifferently. 'They are bits of fire a few kilometres away. We could reach them if we wanted to. Or we could blot them out. The earth is the centre of the universe. The sun and stars go round it.' [Orwell, *Nineteen Eighty-Four*, 213]

In a manner of speaking this passage encapsulates *Nineteen Eighty-Four*'s uneasy relationship with science fiction. It is a deliberately pre-Copernican SF novel. In some ways it does utilise science fictional tropes: the telescreens, rocket-bombs, the advanced technologies of war making. But in another sense, the regime of the novel has no use for technology. The slogan about controlling the future is

wholly circular; there *is* no future is Oceania, only a continual present of party power. Even the date of the title reinforces this notion, for Orwell, writing in 1948, simply reversed the last two digits. Unlike the tradition of future fiction (books such as Bellamy's *Looking Backward 2000–1887*)—which it ironically deconstructs—*Nineteen Eighty-Four* is not future fiction because, very precisely, there is no future towards which the inhabitants of Orwell's society can progress.

Nevertheless Orwell's fantasy here *is* science fiction. The model is less the technological SF of 1920s and 1930s pulps, and more the theoretical and subtle SF of Stapledon. We start to have a sense of this in the final section, during the detailed interrogation of Smith by O'Brien. These pages are unlike a conventional interrogation in one sense. Smith has little to say, for there is little he can say—the Party knows everything before the interrogation starts. Instead O'Brien talks at eloquent and chilling length. Some critics see this as a flaw in the book, and admittedly it is not obvious, at first reading, why O'Brien takes such extraordinary pains over Smith. What makes Smith, a wholly insignificant individual, worthy of this special treatment? But in an important sense this novel cannot be read according to the logic of a character-novel in the 19th-century manner. The SF-ness of the book is not its purported future setting. Rather it is a world in which the individual has been wholly superseded by the corporate identity of (in this case) The Party. The Party is disillusioned Marxist Orwell's grim satire on the very notion of a *homo superior*; 'it' is what humanity becomes. Accordingly we can read the book as a dark evolutionary romance. O'Brien himself is straightforward in regarding The Party as a new form of immortal being. 'Can you not understand that the death of the individual,' he tells Smith, 'is not death? The Party is immortal' [*Nineteen Eighty-Four*, 216]. It is also all-powerful, all-knowing, a form of secular God that has grown out of humanity. This is what makes *Nineteen Eighty-Four* so important for the development of the 20th-century novel, the way it gestures towards a novel without 'character' at all. It is a much more avant-garde work than most people realise.

'COSY CATASTROPHE' AND ALIEN CHILDREN

Brian Aldiss's memorable critical slogan 'cosy catastrophe' has taken deep root in the academical loam as a description of the dominant style of postwar British SF. Whilst American SF (the argument goes) explored increasingly expansive possibilities of global, solar and galactic adventure, British SF projected an increasingly insular aesthetic. The situation was not as clear-cut as this suggests, but it cannot be denied that a number of significant novels were written in which middle-class Britons faced disaster or apocalypse; just as real-life middle-class Britons faced the Alice-like shrinkage of the UK from a world power into a caterpillar-sized nation. What makes these catastrophes 'cosy' is their lack of any genuine sense of threat; they fictionalise the adventure playground rather than the terrors of ontological extinction: 'the essence of cosy catastrophe is that that the hero should have a pretty good time (girls, free suites at the Savoy, automobiles for the taking) while everyone is dying off' [Aldiss and Wingrove,

Trillion, 254]. There is some truth in this thumbnail of postwar British SF, but only some. In fact, the catastrophes of John Wyndham (pseudonym of John Harris), Arthur C Clarke and John Christopher (pseudonym of Sam Youd) are more properly unsettling, and address eschatological thematics in a fertile and profound way.

There is, for instance, little that is cosy in the harsh post-catastrophe landscapes of Christopher's famine-threatened *The Death of Grass* (1956), icebound *The World in Winter* (1962), or the seismological upheavals of *A Wrinkle in the Skin* (1965). A well-regarded American version of the same thing is George Stewart's only SF novel, *Earth Abides* (1949), a considered and elegiac treatment of the post-disaster story. Wyndham's *The Day of the Triffids* (1951) constellates (slightly implausibly) two catastrophes: a near-universal blinding of the human race and the rampage of the man-sized walking plants with poisonous flails of the book's title. *The Kraken Wakes* (1953) is an alien invasion tale given added punch by virtue of the fact that the alien threat is never seen, since they colonise our deep oceans rather than our landmasses. This, though, does not mean we avoid their depredations, for they attack shipping and eventually start melting the icecaps to flood the whole world. But Wyndham's most interesting book is not strictly catastrophic. Indeed, there is a case that the cosy catastrophe genre reached its peak with books concerned not with global mortality, but nativity. Wyndham's *The Midwich Cuckoos* (1957) is one of the greatest achievements of this period. One day, and without warning, all the inhabitants of the English village of Midwich fall into a trance; when they awake the fertile women are all pregnant. The children born to them grow rapidly, evidencing strange powers of telepathy, and a group-mind sensibility. Ostracised and attacked for their oddness, they respond by telepathically compelling villagers to commit suicide, or to turn upon one another. Realising the threat they pose, Gordon Zellaby, one of the villagers who has been overseeing the children's education at a house called The Grange, gathers them together and explodes a bomb, killing himself along with all the children. So bald a summary cannot convey the brilliantly chilling opposition of English ordinariness and the compelling oddity of the children that the book evokes.

The alienness of children is one of Wyndham's more general themes, as several critics have noted. For instance David Ketterer points out that, from *Planet Plane* (1936) through *The Chrysalids* (1955) and *The Midwich Cuckoos* (1957), to *Chocky* (1968) and a number of short stories (amongst them 'It's a Wise Child' and 'A Life Postponed') Wyndham returned again and again to the trope of the different child, beings both superior and alien in the form of children, a fascination that David Ketterer convincingly relates to Wyndham's own psycho-biographical circumstances [Ketterer, pp. 154–5]. What makes *The Midwich Cuckoos* different from *The Chrysalids* or *Chocky* is that Wyndham does not recruit our sympathy for the children. Indeed, we can restate the central premise of the novel in these terms: under what circumstances would it be not only possible but necessary and even heroic to murder a group of fifty-eight children? Thinking of the novel this way, I think, makes it a much more

obviously postwar work than has been generally acknowledged. By postwar I mean, of course, post-Holocaust; or to be more specific, I am suggesting that The novel needs to be read as an early example of the genre of holocaust fiction. In 1956, when Wyndham was writing, barely a decade had passed since the liberation of the camps. Wyndham himself had been in the army at the end of the war, as had his novel's narrator, who recalls his war, 'the beaches, the Ardennes, the Reichswald, and the Rhine' [*Midwich Cuckoos*, p. 32], placing him with those same armed forces that went on to discover and liberate the first concentration camps. The camps were that place in the war where a people had systemised the murder of children (along with women and men) on the grounds of defending civilisation and the human race against a menace from within. In one sense the novel is an attempt to enter imaginatively (via SF fable) into the mindset of a people who could commit such an act.

This final commission of mass-murder is, when one considers it, a startling and even monstrous conclusion to the book. Ketterer points out that not only does Zellaby downplay his 'heroic act of suicide', implying 'that he has not long to live anyway because of a heart condition', but moreover:

Harris [Wyndham's real name] evades the full horror of his conclusion by having it occur offstage. Furthermore, Harris has simplified or, perhaps more accurately, fudged and sidestepped the moral issues involved by ensuring that no apparent member of Zellaby's own family is amongst the destroyed Children. [Ketterer, p. 165]

It is striking how *racially* conceptualised the novel is. The alien children, according to army man Bernard Wescott, represent 'a racial danger of a most urgent kind'. The Russians have destroyed one population of such children in one of their own towns by invoking the extreme step of obliterating the entire town by 'atomic cannon'. The Russian government, Wescott reports, 'calls upon all governments everywhere to "neutralize" any such known groups with the least possible delay'. Another character, Leeboddy, insists that killing them is not murder, since 'they have the *look* of the *genus homo*, but not the nature'. Zellaby sums up, just before his suicide bombing: 'it is our duty to our race and culture to liquidate the Children' or else 'their culture ... will extinguish ours' [*Midwich Cuckoos*, pp. 191, 158, 208]. Moreover, Wyndham's description of the children makes them seem distinctly Semitic: they all share 'browened complexions', 'dark golden hair' and 'straight, narrow noses', and they carry the sense of 'foreignness' about them [*Midwich Cuckoos*, p. 148]. The momentum of the novel exists, we might say, in order to barrel us along the line of reasoning, and the line of emotional force, until we reach the same place that the Nazis occupied; these children must be killed to protect our race. This is not to suggest that the humane, considerate Wyndham was in any way a Nazi; indeed, something the reverse. His novel is a brilliantly contrary ethical cipher, it interpellates us as a camp guard: 'here, you must not only kill these children' (or not kill, but *liquidate*, *neutralise*) 'but believe that you are doing

good'. Wyndham's satire on the Western ideology of civilisation and race still has contemporary bite; there's nothing cosy about this catastrophe.

This trope of the child as alien was a popular one in the 1950s, on both sides of the Atlantic. There was, for instance, a plethora of SF stories that dramatised human children in league with aliens, or as aliens themselves. We could mention Van Vogt's *Slan* (1946), Henry Kuttner's and C L Moore's 'Mimsy Were the Borogoves' (1943, in which children utilise far-future educational aids, returned through time, to escape their parents) and Ray Bradbury's 'Zero Hour' (1947, in which human children side with alien invaders). More famously, perhaps, are the aforementioned books by Wyndham: *The Chrysalids*, with its telepathic superchildren who represent a new evolutionary development over their limited and paedicidal parents is one such; and *Chocky*, in which a human child has an alien 'brother' living in his mind is another. Something, we might say, was working itself out in the speculative culture of the immediately postwar years, some widespread cultural anxiety about the nature and status of children—some apprehension, in fact, of the uncanny aspect of the Child.

But the true laureate of the alien child is British-born author Arthur C Clarke. Sometimes saddled with the title of the century's greatest SF writer, Clarke's reputation is founded on his hard SF fabulation. His *Collected Short Stories* is filled with expert tales in which a technological novum is developed in ingenuous and striking ways. Some of his most sheerly enjoyable books are dramatisations of the technological demands of space travel: *The Sands of Mars* (1951) paints what was, according to the knowledge of its day, a thoroughly realistic colonised Mars; *Islands in the Sky* (1952) follows the adventures of a sixteen-year-old in a future of Earth-orbital space stations; *A Fall of Moondust* (1961) sinks a Moon-bus into a sea of dust in recognisably disaster-movie style, with the victims' attempts to survive and escape rendered in a perfectly plausible manner. Clarke's own background in mathematics, electronics and engineering always shapes his fiction with a studied scientific rationale. In the short story 'A Slight Case of Sunstroke' (first published in *Galaxy* 1958), an entire football crowd focus little mirrors on an unpopular referee thereby incinerating him; with another writer the reader might suspend disbelief, grant the author license to create metaphoric effect. With Clarke, however, the reader never doubts that he has done all the calculations, and that she is encountering a scientific plausibility. Eric Rabkin notes that one single short story, 'Jupiter Five', required 'twenty or thirty pages of orbital calculations to insure that everything reported in the narrative was true to classical mechanics' [Rabkin, 19]. This mechanistic Russellian underpinning of the fictional universe is, more often than not, handled unobtrusively by Clarke. But what is interesting is the extent to which this rationalist, atheist, Enlightenment writer was drawn to fundamentally religious tropes of transcendence.

His early novel *Childhood's End* (1953) locates the end of humanity in its children. At the book's beginning immensely powerful aliens come to Earth, put an end to war and suffering, and establish a benign dictatorship. Under their secretive rule (the aliens do not initially show themselves to humanity;

it later transpires that their reticence is because of their purely adventitious physical resemblance to devils) a new golden age begins. But by the novel's end we discover that these aliens have in fact been acting as shepherds, watching over *homo sapiens* as a new generation of human children grows to transcend physical reality and join the 'overmind'. This transcendence, although a marvellous thing, is also a catastrophic one; it marks the terminus of humanity and indeed of the Earth itself. A generation of parents watch their children become something strange and alien, and are unable to follow. The transcendent ascension of the children destroys the Earth utterly. Edward James notes that 'the apocalyptic and visionary ending of *Childhood's End* is no doubt what has earned it the position in most polls since then as one of the top three of the "Ten Greatest SF Novels of All Time".' But James also astutely picks up on the barely buried contradictions of this novel: 'it is notable (though perplexing) that Clarke's novel carried this message on the copyright page: "the opinions expressed in this book are not those of the author"' [James, p. 78]. Clarke later explained that the opinion in question was the Overlord's insistence that 'the stars are not for man'; but the fertile self-contradiction runs much more deeply through Clarke's work than that.

An obvious way of reading *Childhood's End* is to see the initial uncertainty about the Overlords' motives resolved straightforwardly; their intention was always benign towards humanity, the transcendence of humanity into the overmind which the Overlords chaperone is a Good Thing. But as Peter Fitting notes, 'although many critics describe [*Childhood's End*] as a version of the theme of the benevolent alien, it is possible to make the opposite case, viewing it instead as an example of the alien invasion narrative. The coming of the Overlords ... brings about the end of the human race and the destruction of the Earth.' As Fitting notes, reading this conclusion as a positive development 'implies that we agree "father knows best", that the Overlords are acting in our best interests even if we cannot appreciate it' [Fitting pp. 143–4]. Fitting draws parallels with British imperialist paternalism, but it is the psychic and emotive investment in attraction to/repulsion from a Father (or more precisely, with the Name of the Father) that, I think, gives the novel its direct impact with readers.

Something similar happens with the starchild of the last frames of Clarke-Kubrick's *2001: A Space Odyssey* (discussed in the following chapter). In that movie what is most uncanny is not the appearance of the starchild itself, but rather the scenes that immediately precede that appearance—Bowman stranded in some Louis-Quinze drawing room at the other end of a cosmic wormhole, haunted by himself, and ageing visibly before our very eyes. In other words, the uncanny thing (the newness of the starchild, and the change, perhaps destruction, it forebodes to the Earth) is transferred in inverted form onto Bowman, the 'parent'. It is his accelerated ageing that is the spooky thing, because it reinforces the trajectory towards death and supercession that is implied by the figure of the child in the first place. This, in turn, says something interesting about *Childhood End's* relationship to science fiction as a whole, and

illuminates Peter Nicholls's interesting observation of what he calls 'the ACC paradox', that 'the man who of all SF writers is most closely identified with knowledgeable, technological hard SF is strongly attracted to the metaphysical, even to the mystical' [Nicholls 'Clarke', 230]. Clarke's particular mediation of the original determining dialectic of SF seems to bias the materialist or Protestant strand; but in fact that mystic/fantastic Catholic strand is strongly present in sub-conscious form. But that sub-conscious is an orphan, and more than an orphan; a parent-slayer, an alien and monstrous embodiment of *jouissance*. One of Clarke's most famous stories is 'The Nine Billion Names of God' (first published 1953). Two computer scientists are only too happy to sell an advanced and expensive computer system to a Tibetan lama, to aid in the (as far as the scientists are concerned) futile task of listing all nine billion of God's names. Once this task is completed, the lama believes, the world will end; the scientists keep their mocking condescension to themselves so as not to jeopardise their sale. Indeed, they hurry away on ponies afterwards so as not to have to face the lama's disappointment when his task is completed and revealed as futile. They are almost at the airstrip when the world does indeed end, in the beautifully understated final passage.

'Wonder if the computer's finished its run. It was due about now.'

Chuck didn't reply, so George swung round in his saddle. He could just see Chuck's face, a white oval turned toward the sky.

'Look,' whispered Chuck, and George lifted his eyes to heaven. (There is always a last time for everything.)

Overhead, without any fuss, the stars were going out. [Clarke, *Stories*, 422]

The sense of wonder evoked by this story stands in interesting contrast to the stellar superfluity of Asimov's 'Nightfall' (discussed above). Both tales work in similar, yet diametrically opposite, ways. Where Asimov dramatised the Copernican revolution in his characters' conceptual breakthrough as to the immensity of the cosmos, Clarke achieves the same effect by, paradoxically, revealing the universe to be *pre*-Copernican, with stars more or less equidistant from a cosmically central Earth, and so able to wink out in unison. Edward James recalls reading Clarke's story at 'age 13 or 14': 'an almost religious sense of awe (or wonder) was created in me, as I tried to perceive the immensity of the universe, and contemplate the non-existence of God' [James. 107]. This is exactly how Clarke works.

GOLDEN AGE 'RELIGIOUS' FICTIONS

The religious dialectic that set modern SF in motion does not retreat as an increasingly secular 20th century proceeded. On the contrary, more and more SF writers explored religious discourse: writing books about religious figures, such as Moorcock's *Behold the Man* (1969) or Zelazny's *Lord of Light* (1967); or else books set in religious communities; or in societies dominated by fundamentalist religious stricture. This last category is by far the largest, and includes a number

of SF masterpieces, amongst them Wyndham's *The Chrysalids* (1955), Blish's *A Case of Conscience* (1958), Atwood's *The Handmaid's Tale* (1985), Sheri Tepper's *Grass* (1989), Simmons *Hyperion* (1989), and Gene Wolfe's work.

One of the most notable of these masterpieces is Walter Miller's *A Canticle for Leibowitz* (1959). The novel begins a few hundred years after a devastating nuclear war. Civilisation has collapsed and in this new age only a few books and relics of scholarship are preserved by Catholic monasteries. Over the course of several centuries the monastery provides a still point in a brutish world. Eventually civilisation recovers to pre-war levels, but political tensions again threaten nuclear war. The church organises a spacecraft to travel to the new colony at Alpha Centauri, and so escape the inevitable holocaust.

Miller's prose is careful and graceful, and his narrative line is expertly paced and cadenced, neither rushed nor saggy. But, presumably because of Miller's own deeply held Catholic faith, this novel takes a different approach to the more transcendental religious SF of other books from this period. Where they tend to avoid the political or social application of specific religious belief, Miller runs the risk of ideological obtuseness in interpreting nuclear holocaust explicitly as a function of mankind's original sin rather than as a political or technological dilemma. Looking back on our time from a post-holocaust perspective, a visiting scholar asks 'how can a great and wise civilization have destroyed itself so completely?' 'Perhaps,' replies a monsignor, 'by being materially great and materially wise and nothing else' [*Canticle for Leibowitz*, 139]. In practical terms this amounts to a tacit assertion that only by injecting religion into materialist political discourse can disaster be averted; a belief known as religious fundamentalism, or the Christian Right, or a variety of other labels. It can be argued that America's later Reaganite/Bushite history tends to suggest that a ruler who believes in absolute religious certitude is more, not less, likely to bring on Armageddon. Of course, what is so interesting here is not Miller's own political sympathies (shared by millions) but the openness of SF to this sort of theological fiction. The tension between material and spiritual is still at the heart of SF. It is not only the issue of original sin, it is also the call—insidiously attractive to those living in the monastery of SF fandom—that a *vocation* validates an otherwise marginalised life. In Miller's short story 'Crucifixus Etiam' (1953), Manue Nanti takes a job working on a Martian terraforming project. He intends to take his wages and return to Earth, but the device he uses to oxygenate his blood in the thin Martian atmosphere eventually results in the withering away of his lungs. Unable to return to Earth he nonetheless finds inner peace in the knowledge that he is part of a larger plan to make the world habitable, even though the project will take 800 years. 'Some sow, others reap,' his supervisor tells him, 'if you can't be both, which would you rather be?' Manue finds consolation in his sense of a vocation larger than himself: 'he knew now what Mars was ... an eight-century passion of human faith in the destiny of the Race of Man.' That this secular vocation has a religious aspect is indicated by the title of the story. 'What man ever made his own salvation?' asks one of the characters [Miller, *Best of*, 67–68].

Some of the most durable SF from the 1950s was still interrogating, in surprisingly unevolved a fashion, the theological anxieties that gave birth to the genre in the early 1600s. US writer James Blish is a case in point. The priest-protagonist of his *A Case of Conscience* (1958) is wracked with doubts because the aliens of the planet Lithia, living sinless lives in a terrestrial paradise, have no concept of God or soul. In a preface to a reprint of the book, Blish notes that he received letters from ‘theologians who knew the present [that is, 1958] Church position on the problem of the “plurality of worlds”’, and quotes the opinion of Gerald Head: ‘If there are many planets inhabited by sentient creatures as most astronomers (including Jesuits) now suspect then each one of such planets ... must fall into one of three categories’: the soulless; those with souls who have fallen; and those with souls who never fell. Blish adds with evident pride, ‘the reader will observe ... that the Lithians fit none of these categories’. Ruiz-Sanchez, the Jesuit protagonist of the novel, comes to believe that the rational, civilised Lithians have in fact been created by the Devil to tempt Earth into disaster. At the novel’s end (in a passage it is hard for a non-believer to take in any way other than a monstrous celebration of genocide) Ruiz-Sanchez exorcises the entire world *out of existence*, his rite of exorcism happening to coincide with a nuclear chain reaction set in motion by Earthly workmen exploiting Lithian natural resources. The enormous violence of this conclusion picks out a buried strain of hostility to the very notion of a plurality of inhabited worlds. It also mediates E E Smith’s *übermensch*-y pulp vision of alien holocaust (on the one hand) and C S Lewis’s theological quibbling about the number of aliens dancing on the head of a pin (on the other). Blish’s novel effectively adds a new category to Gerard Head’s theological analysis of alien life, which might read something like ‘inhabited by sentient creatures without souls who have been produced by Satan to try and damage God’s creation’. But this, by pointing up other ‘omissions’ from the orthodox Catholic analysis, necessarily suggests another possibility still; that other worlds may be inhabited by creatures that have nothing to do with, and were not created by, the God of the Earthly Bible. Since this same logic can be applied to Earth as well, it is corrosive of theological certainty; which is presumably one reason the church felt it had to kill Bruno.

Blish’s ‘Cities in Flight’ sequence [comprising, according to the books’ inner chronology: *They Shall Have Stars* (1956), *A Life for the Stars* (1962), *Earthman Come Home* (1955) and *The Triumph of Time* (1958)] seems, on first reading, a much more straightforward hard SF project. Anti-gravity devices called spindizzies, powerful enough to lift whole parishes, enable Earth’s cities to fly into space away from an economically exhausted and politically claustrophobic homeworld, and to embark on various *voyages extraordinaires* through deep space. Anti-aging technology allows Blish to keep continuities of character across the very long time scales involved. The early novels are dominated by a rather grim vision of the way unfettered free-market economics—which govern the future galaxy; the cities must labour and trade to survive—can lead to pinchingly persistent hardship, even for the hard-working. But having

navigated out of our troublesome galaxy altogether and settled on a likely planet, the city of New York (Blish's main protagonist) and its hero-mayor Amalfi find themselves faced with a transcendental rather than an economic crisis. *The Triumph of Time* matches a Shelleyan pessimism to its Shelleyan title; the universe, it transpires, is dying much sooner than anticipated, with only a few years left. Rather than see everything vanish utterly, Amalfi and a few others work out a way to position themselves at the epicentre of the cosmic catastrophe, such that—and despite their own deaths—there will be matter from which a new universe can be born. Portions of the novel are clogged with hard SF technobabble seminar-room disquisitions, and equations of the order:

$$\frac{d^2G}{dx^2} + \frac{d^2G}{dy^2} + \frac{d^2G}{dz^2} = a^2 \frac{dG}{dt}$$

But at the end the book reverts into a more recognisably theological creation fable. As Amalfi and his companions, floating in a literal nothingness, press the button on their spacesuits that will turn them into the big bangs of wholly new cosmoi, we are reminded that the only thing they will take with them (and which will, presumably, shape the deep structure of the new universes) is love. 'I don't feel deprived,' Amalfi tells the others, in the face of their imminent deaths. 'I loved you all. You have my love to take with you, and I have it too.' 'It is,' reflects somebody else 'the only thing in the universe that one can give and still have' [Blish, *Cities*, 595]. The whole technological sense of wonder, golden age text bears down on this final revelation of love as the logos. *Cities in Flight* ends vatically with the sentence: 'Creation began'. It is a testimony to Blish's talents that this last statement carries the weight of all that has gone before, rather than being (as it might have been) an irritating affectation, after the sorts of romantic comedy movies that replace their 'The End' credit with one reading 'The Beginning ...'.

Love in this quasi-theological sense (together with its shadow, loss) is at the heart of the considerable literary achievement of Ray Bradbury. His most famous title, *The Martian Chronicles* (1950), is a collection of loosely linked stories that detail a future human colonisation of Mars, not in terms of the nuts and bolts (technological or social) of such an undertaking, but as an almost dreamlike inhabitation of empty spaces still haunted by the enigmatic presences of the elusive aboriginal Martians. Written in a beautifully judged prose that is poetic without ever being pretentious or showy, the book tropes its imagined future via the remembered small-town American past of Bradbury's own childhood. There is a blending of nostalgic solace and childhood night terrors in Bradbury's work. Certainties evaporate, and alienness is simultaneously externalised and internalised. *The Illustrated Man* (1951) also collected linked stories, this time encapsulated in the magic animated body tattoos of the titular figure. The short novel *Fahrenheit 451* (1953) seems to be a satire on the totalitarian desire to suppress free thought. In Bradbury's future citizens live in fireproof cities and the job of the fireman protagonist is to burn books;

a task he comes, as he grows in knowledge, to regret. But to describe the novel in these terms does nothing to capture the weird, under the skin oddness of Bradbury's poetry. Rather than being a work in the *Nineteen Eighty-Four* mode of outraged anger, this is a gentle, moving fable about the ways, and the extent, it is possible to transcend one's quotidian limitations and become more than one was. Literature, in the fullest sense, represents for Bradbury this potential for growth. It might seem odd to bracket Bradbury here with more obviously religiously inclined writers like Miller and Blish. Yet there is, running through Bradbury's fables, an almost millenarian yearning for escape. In 1979 Bradbury described space travel as 'exciting and soul-opening and as revelatory'; and the latter two terms seem to me the important ones for his writing ('because' he goes on, 'we can escape, we can escape and escape is very important, very tonic, for the human spirit'; quoted in Disch, 72–3). The escape, and the terrors, of his writing are linked in this way, I think, to a distinctively American narrative of the soul.

EUROPEAN SF OF THE 1940S AND 1950S

Continental Europe suffered quite thoroughly during the war years 1940–1945, and the SF of the postwar period is very much a product of those upheavals. In French writer René Barjavel's *Ravage* (*Devastation* 1943), a futuristic high-tech world suddenly finds its electricity cut-off, and collapses into anarchy. Out of the disaster a new and, the book says, much superior agrarian culture develops. Indeed, the book's anti-technological thesis is developed in a bluntly superstitious manner: '*tout cela*,' says one character '*est notre faute*,'

Les hommes ont libéré les forces terribles que la nature tenait enfermées avec précaution ... ils ont nommé cela le Progrès. C'est un progrès accéléré vers la mort [it's all our fault. Man has freed terrible forces that Nature had safely hidden away ... they called this Progress, but it's only a progress towards a rapid death]! [Barjavel, *Ravage*, 85]

The pastoral idyll with which the book closes is also rather self-deluding, even banally so, a phallogocentric fantasy of heterosexual gratification and egotism. *Ravage*'s patriarch enjoys as many women as he pleases ('*les générations nouvelles*,' we are told '*ont accepté la polygamie comme une chose naturelle*', Barjavel, *Ravage*, 298) as he breathes the clean air and eats the good food, sending his many sons out to colonise '*un Monde vide* [an empty world]'. This vision is so far anti-futurist that it has come round the curve of the ideological globe to meet with it again; disdaining a Marinettian love of the machinic whilst embracing a similarly anti-life enthusiasm for the great cull. Less totalised and rather more playful is his time travel novel *Le voyageur imprudent* (*The imprudent traveller* 1944). Two scientists experiment with travelling through time; when one dies the other attempts to go back and un-do the accident, getting tangled up in the grandfather paradox. Barjavel enthusiasts sometimes claim this as the

first treatment of this famous theme, although there are several prior examples in American pulps. In *La Nuit des temps* (*The Night of Time* 1968) a million year old survivor from a technologically advanced archaic civilisation is awoken from hibernation in the North Pole. This woman, Éléa, is happy to gift her knowledge to the world, providing free energy and food for all; but the global political authorities are not prepared to be disempowered by this development—as they surely would be—and so prevent its fruition. In *Le Grand Secret* (*The Great Secret* 1973) a contagious virus that confers immortality is deemed potentially so disastrous to humanity that it is confined on an island. For a while a utopian community develops on this place, until the authorities destroy it. Barjavel returned to the utopian theme more satirically in *Une rose au paradis* (*A Rose in Paradise* 1981), in which the mad but enormously wealthy Monsieur Gé decides to obliterate the world using U-Bombs, and start over with a new Adam and Eve he has personally selected, Jim and Jif Jonas. His plan involves him waiting out the decades of post-apocalypse radiation-poisoning in suspended animation inside a subterranean chamber, watched over by a computer. Of course things go wrong. Barjavel's theme is that we cannot escape our inner limitations. He does not call these limitations original sin, but he might as well have done:

*On ne construit un monde imaginaire qu'avec des matériaux pris dans le monde connu. L'imagination, c'est de la mémoire passée à la moulinette et reconstituée en puzzles différents. Un être humain qui aurait été élevé uniquement dans du rouge, derrière des vitres rouges, ne pourrait jamais imaginer le bleu. [We can only build our imaginary worlds out of materials taken from the known. Imagination is memory passed through the mill and reconstituted into different puzzles. A human raised in a red world, seeing everything through a red glass, will never be able to conceive of blue.] [Barjavel, *Une rose*, 91]*

As a small-c conservative aesthetic of utopian re-imagining this could hardly be more pithily put.

Bohemian-born writer Franz Werfel was forced, as a Jew, to flee Europe during the war, and died soon after arriving in California. His last novel was the posthumously published *Stern der Ungeborenen* (*Star of the Unborn* 1946), a far-future utopian meditation on alienation and suffering. Resurrected from his own death, the protagonist (who shares the author's initials) is shown a far-future society of tremendous technological achievements. The twist is that by conquering suffering humankind has sabotaged its chances for salvation. Though a Jew, Werfel was raised in a Catholic environment and his writing explores a pan-religious sensibility influenced by the Far East as much as European theology. At the heart of his fiction was the belief that '*Der sicherste Reichtum ist die Armut an Bedürfnissen* [the surest wealth is the poverty of needs]' and that is evident in the lengthy, rather Thomas Mann-like longeurs of *Stern der Ungeborenen*. Technology, the novel says, distracts us from this core human truth by catering for and therefore fuelling human appetites. As with Barjavel there is a reaction against machinism by writers who experienced at first hand the destructive power of engines of war.

It is in the intelligent space operas of Soviet Russian writer Ivan Yefremov that the 'official' Soviet view of alien life is most clearly articulated; that any alien race sufficiently advanced to have mastered interstellar flight must be Communists, for Capitalism (inherently divided amongst itself by competition over the means of production) could never marshal the huge collective effort required for so enormous an achievement. The aliens encountered in *Cor Serpentis* (*Serpent's Heart* 1958; the title was originally in Latin, the Russian title is *Сердце Змеи*) fit this bill. Now that the 20th century is over, and the dreams of that century's SF writers for the rapid colonisation of space have dissolved into nothing more than a few commercial satellites and a few under-funded robot probes, we may wish to take time to reflect on the likelihood that Yefremov was right all along. It is certainly difficult to say whether a non-Marxist would find *Туманность Андромеды* (*Andromeda Nebula* 1957) as beguiling as a reader with Marxist sympathies might, but its compelling portrait of a socialist Earth in the fourth millennium, exploring space and making contact with aliens from the Andromeda galaxy is still inspiring.

FILMS

Historians of SF cinema often dismiss the 1940s as a dud decade, characterised by shabby, cheaply made cash-in properties and sequels to the same. Movies which cross over to horror and comedy without the delicate touch of their progenitors, such as *The Ghost of Frankenstein* (Erle Kenton 1942), *Frankenstein Meets the Wolf Man* (Roy William Neill 1943) and the unfunny *Abbott and Costello Meet Frankenstein* (Charles T Barton 1948). However a few populist serials or one-off movies carried themselves off with panache and a febrile inventiveness. Examples include the barmy miniaturised-humans adventure *Dr Cyclops* (Ernest B Schoedsack 1940), or the *King Kong* rip-off *Mighty Joe Young* (Ernest B Schoedsack 1949). But it is probably true to say that it was not until the 1950s that we can meaningfully talk of golden age SF Cinema.

Destination Moon (Irving Pichel 1950), based on Heinlein's novel *Rocket Ship Galileo* (1947), is well-regarded by fans for its 'realistic' portrayal of space travel. Indeed, Heinlein worked as a technical consultant on the project. But it is a dull film, with unmemorable characters and a treacle-slow storyline. In keeping with Heinlein's libertarian political views it is private enterprise rather than government that gets the rocket aloft. The lengthy development period created a deal of public anticipation (the posters for the film carried the tagline 'TWO YEARS IN THE MAKING!'), and a less than scrupulous cash-in film was hurried through production to try and steal its thunder. In the event, a legal challenge meant that *Rocketship X-M* (Kurt Neumann 1950) had to include a disclaimer when sent to exhibitors stating 'this is not *Destination Moon*'. *Rocketship's* story abandons scientific credibility (a Moon-bound rocket flies off course and lands instead on Mars, discovering a post-atomic-war society of troglodytic humanoids); but is nevertheless a better SF film than *Destination Moon* because it understands its kinetic, restless idiom better.

Throughout the 1950s film-makers experimented with the balance between po-faced scientific plausibility and pulpishly belief-stretching high adventure. On the former side of the fence is the end-of-the-world movie *When Worlds Collide* (Rudolph Maté 1951); a movie whose earnest elaboration of the attempts to build a space ark to carry a few human survivors to a better world is rendered with a gaudy deadness. Although the image of the spaceship (designed by SF artist Chesley Bonestell), perched atop its ski-jump-like launch pad, still has iconic power.

Much less arthritically respectful of scientific plausibility is *The Thing from Another World* (Christian Nyby and Howard Hawks 1951), a very effective thriller in which a vegetable alien who must feed on human blood to survive terrorises an isolated Arctic research station. Eventually the humans electrocute the creature, and the film ends with a line that has become a slogan for SF fans and UFOlogists: 'Watch the skies! Keep watching the skies!' The movie version of Wells's classic *The War of the Worlds* (Byron Haskin 1953) also plumps for a populist, spectacular idiom; and succeeds well in rendering the Martian machines and the destruction they create. Of the film's two million dollar budget, 1.4 million dollars were spent on special effects. *The Day the Earth Stood Still* (Robert Wise 1951) strikes the right balance between serious and pulp. By way of comparison, the turgid 2008 re-make, directed by Scott Derrickson, errs much too much on the former side. A humanoid alien called Klaatu (played with real dignity by Michael Rennie) and his giant silver robot land a huge flying saucer in Washington DC to warn the Earth that we must change our belligerent and self-destructive ways. The army turns out to confront this apparition, and Klaatu is accidentally shot by a jittery soldier. He recovers from his fatal wound, later living amongst ordinary people under the Christ-like pseudonym Carpenter. After performing certain 'miracles' to demonstrate his power (for instance, stopping all electricity on the world for several hours) he is again killed by humanity. But again, like Christ, he returns to life. Here he reveals that it is the robot, rather than the humanoid, who is the real power—a member of a sort of interstellar police force which will 'reduce this Earth of yours to a burnt-out cinder' if it does not give up its violence. Those who consider this threat out of keeping with the otherwise liberal open-heartedness of the film should remember that Christ was also given to making threats: of Jerusalem's temple being utterly demolished; or the world itself destroyed and the unrepentant sent to Hell. The theological allegory of the film detracts, for some, from the nicely understated direction of this still classic tale, but its presence is symptomatic not so much of contemporary religious discourse as of the theological sub-text underpinning the genre as a whole.

The later 1950s saw a distinct boom in monster movies, in which either specific humans or else humanity as a whole was menaced by various hideous or bestial creatures, most of which are spawned by nuclear testing and rogue radiation. One of the most influential was the Japanese *Gojira* (Inoshiro Honda 1954) mistakenly rendered into English as *Godzilla* [there have been to date more than fifty remakes and sequels, including the recent box-office hit

Godzilla (Gareth Edwards 2014)]. This dinosaur-like giant creature, awoken by atomic testing, rises from the ocean depths to attack Tokyo. Its name, apparently, is a portmanteau of gorilla and *kujira* (which means whale). Many critics have followed contemporary audiences in reading the film as an allegory of the nuclear destruction of two other Japanese cities less than a decade earlier; but across the sequence of *Gojira* films the status of the monster is harder to pin-down. Often he becomes an ally of man against some other monstrous giant—Mothra the giant moth, Ebirah the colossal crab, Hedora the Smog Monster and so on. The American film *Them!* (Gordon Douglas 1954) also uses nuclear testing as the trigger for gigantic mutation, this time of ants in the New Mexico desert. The whole is handled in a low-key, non-hysterical manner by Douglas, which leads to some powerful moments. Less effective but still interesting is *The Creature from the Black Lagoon* (Jack Arnold 1954)—and its sequels: *Revenge of the Creature* (Jack Arnold 1955); *The Creature Walks Among Us* (John Sherwood 1956)—with its iconic human-sized monster swimming menacingly through the waters or lumbering slimily over the land. In *Tarantula* (Jack Arnold 1955) scientists invent a compound that causes deforming acromegaly in humans but makes animals grow to enormous size. The original aim was to solve world hunger, instead the technology creates a colossal spider that escapes to the desert and preys on people and cattle. It is eventually destroyed by the military.

A complete listing of monster movies would take up a whole chapter, and most of the output is inconsequential. In the words of Peter Nicholls:

The boom climaxed with a veritable eruption of monster movies in 1957 ... the cascade continued in 1958 with variations on the theme becoming more knowing ... but generic rigidity soon degenerated into decline and fall. More monster movies were made 1959–62 than in the whole of 1951–8, but almost without exception they were low-budget exploitationers of no real quality aimed at the teenage drive-in market [Nicholls, ‘Monster Movies’, 817].

At the other end of the budgetary scale from these pictures, a number of expensive, special effects heavy, titles were made in the second half of the decade. *This Island Earth* (Joseph Newman 1955) is a weirdly unbalanced film. Two thirds of it is a well-paced, coolly realised mystery, as eminent scientists recruited to work in a secret laboratory in Georgia try to uncover who their mysterious employers are. It transpires they are aliens from the dying world of Metaluna, who are hoping human ingenuity can come up with a way of saving their world. But then, suddenly, the movie shifts gear: the handsome male and beautiful female protagonists are whisked to Metaluna; they battle with a hideous mutant monster; there are explosions and the humans escape in the nick of time. It is a film that shows more glaringly than any other the fault-line between serious pretension and crowd-pleasing pulp extremism that determined so much SF cinema from the period. *Forbidden Planet* (Fred McLeod Wilcox 1956) remains one of the best-loved SF films from this period. Despite artistic pretensions (it

deliberately recasts Shakespeare's *Tempest* into a science fictional idiom) it never compromises its pulpish energy and verve. An Earth spaceship visits the alien world of Altair on which Earth scientist Dr Morbius lives with his daughter Altaira. The aboriginal Altairans have long gone, but Morbius is (secretly) using their mind-amplification technology, unleashing what the script rather quaintly calls 'Monsters from the Id!': invisible colossi that stomp invisibly about leaving huge taloned footprints and occasionally killing people.

More obviously a product of that socially paranoid period in American recent history, known as the McCarthyite panic, is *Invasion of the Body Snatchers* (Don Siegel 1956). Dr Miles Bennell (Kevin McCarthy) discovers that alien dop-pelgangers are in train of killing and replacing all the inhabitants of his small town with emotionless but otherwise flawless copies of humanity. The creeping paranoia of the film builds to a powerful crescendo; the first cut of the film ended with Bennell screaming at cars on a highway like a lunatic 'you're next, you're next!' (to the detriment of the film, the studio insisted on a more positive ending being cut-in to the cinema release). The shade of Jonathan Swift would surely have been delighted with *The Incredible Shrinking Man* (Jack Arnold 1957), a film whose sensationalist title does not do justice to its genuine and acute poignancy. This is the story of Scott Carey who begins to shrink after being exposed to a radioactive mist and who gets smaller and smaller. In earlier sequences he finds temporary happiness with a female dwarf, but as the relentless process makes him smaller still he ends up alone, battling a spider, and facing ultimate nullitude. The slowly building despair of this remarkably subtle film is unlike almost anything else in 1950s popular cinema, an effect reinforced by the strange dignity of Carey's final monologue, added to Richard Matheson's screenplay late in production by the director, in which the now miniscule hero takes comfort in the thought that for God size does not matter and 'there is no zero'. Infinitely sillier, though still memorable, is *The Fly* (Kurt Neumann 1958), in which a scientist inadvertently swaps heads and an arm with a fly via a prototype teleporter accident. That the scientist is lumbered with a gigantic fly-head (which he covers, discretely, with a cloth) rather than a proper fly-sized one, or that the fly gets a miniaturised human head still capable of speech (in one nicely nightmarish moment we see the fly shouting amongst inaudibly 'help me! help me!' as it is trapped on a spider's web) makes, of course, no sense. But there is, for all its daftness, a Poe-like rightness to its nightmare.

VISUAL ARTISTS

Just as SF cinema was, with an increasingly sure touch, creating visual icons of enduring rightness, power and beauty, so the artists of the SF world were developing their craft. Perhaps the most significant contribution in this sense was made by golden age SF comics (see below); but the many SF magazine titles and, increasingly, book publications that generated commissions for artists also represented a forum for aesthetic development. Edmund Alexander

Emshwiller (known as Ems) created a wide variety of visual stylings for his extensive magazine cover work; from quasi-realist brushstroke art to near-abstract pieces (such as the Ben Nicholson/Max Ernst-like representation of spacemen in a capsule that adorned the cover of *Galaxy Science Fiction*, August 1951; a beautiful image that creatively dissociates the visual field into flowing compartments of red, purple, grey and black). Frank Kelly Freas won eleven Hugos and many other awards for his deftly painted images. Freas' work is always inventive, often witty, and only occasionally over-coloured or too gaudy. Several of his images have a wide recognition factor even today; an image of a giant metal robot holding a broken human body in its huge hand, with a look of compassionate grief on its metal face, is unusually spare in its composition, and surprisingly powerful (it was originally an *Astounding* cover from 1953; it was recycled as the cover to an album by pop group Queen in the 1970s). More technically gifted, although rather less lively, were the nearly photographic renderings of Chesley Bonestell; images in *Life* magazine and elsewhere in the late 1940s of famous sites in the solar system created a stir with their verisimilitude (they were collected in the book *The Conquest of Space* 1950). Richard Powers adopted a more deliberately surrealist visual idiom, and even described himself as primarily 'an American surrealist', a fitting mode for the estranged visions of SF. Powers' book and magazine covers rarely related directly to what they purported to illustrate; the logic was associative, dream-like, and articulated a subconscious rightness.

COMICS

The 1940s and 1950s was the great age of superhero comics. The enormous and continuing popularity of the Siegel and Shuster's Superman character led to a large number of superhero properties being developed, most of which are still being published today and many of which have transferred with remarkable success to the big screen. They came, broadly speaking, in two kinds. First there were superheroes whose powers or abilities are greater than human—the contemporary demigods and action heroes like Superman himself. The most notable of these action *übertmenschen* was Captain Marvel, who first appeared in *Whiz Comics* in 1940, but was soon given his own publication, *Captain Marvel Adventures* (1941–53). Young Billy Batson is able to transform himself into the superhero Captain Marvel by uttering the magic word 'shazam!' (an acronym derived from Solomon Hercules Atlas Zeus Achilles Mercury). The huge popularity of this character provoked a 1953 legal challenge by DC Comics, asserting that Captain Marvel was a plagiarism of Superman and therefore a breach of copyright. The character was retired; later attempts to resurrect him as Shazam proved unsuccessful. In Britain, where Captain Marvel adventures were reprinted with great success after World War II, this suspension compelled the creation of a copycat British character named Marvelman (who used the new magic word 'kimota!'—atomic backwards, more or less). Of the other human-to-superhuman transforming characters, the most SF-oriented were:

- The Poseidon-like Sub-Mariner (created by Bill Everett), a half-human, half-Atlantean mutant, and the Human Torch (created by Carl Burgos), an android that bursts into flame when exposed to air (both from 1939).
- The nationalistic icon Captain America (from 1941; created by Joe Simon and Jack Kirby) with his stars and stripes costume, who began by fighting Nazis, and who was transformed from a sickly youth into a superhero by a combination of ‘super soldier serum’ and irradiation by ‘vita rays’. He was retired in 1953, but brought back in 1964, since when he has never been away.
- The Flash (from 1940; created by Gardner Fox and Harry Lampert), a college athlete called Jay Garrick who, upon inhaling ‘hard water vapo’, becomes a super-speedster.
- The Aladdin-like Green Lantern (from 1940; created by Martin Nodell and Bill Finger), an engineer named Alan Scott whose possession of the titular lantern-shaped power source and a ‘power ring’ charged by it, gave him the ability to shape anything he imagines into concrete form (and a power over any substance except wood). The Green Lantern was reinvented in a more explicitly SF idiom in 1959 by John Broome and Gil Kane as test pilot Hal Jordan, who receives the ring of power from a dying alien member of the galaxy-protecting Green Lantern Corps.

As mentioned in the last chapter, the mythological and mythopoeic overtones of all these characters are so obvious as not to need further explication—even the Human Torch, who is not reminiscent of a specific god, is an anthropomorphic personification of an element, fire. Yet even more interesting for our purposes is the manner in which they evolve. When, for instance, Captain Marvel was transmuted to Marvelman in Britain, his new magic word, his new mantra, is no longer derived from ancient gods and heroes, but instead is a pun on atomic energy, the ‘new god’ of the postwar period. Equally fascinating is the case of the Green Lantern’s reinvention as a SF hero and a member of the Green Lantern Corps. Conceived by John Broome (one of the first creators of postmodernist comics), post-Sputnik, at the dawn of the Silver Age of comics and SF, the Corps is a direct homage to E E ‘Doc’ Smith’s Lensmen. Yet by having the members of this intergalactic police force wield the tremendous ‘power rings’, (essentially Aladdin’s lamps in ring form), Broome not only replaces an old ‘religion’ (mythology) with a new one (SF), but also projects the superhero as a creature of will to power on the grandest scale, the iconographic scale. Aided by Gil Kane, an exceptionally versatile artist who was granted the honorary title of imagineer late in his career, Broome cemented the true, iconic appeal of comics superheroes and visual SF. Just as each power ring’s capabilities were dependent only on the sheer will power of the bearer, SF comics’ potential for visual sense of wonder were limited only by the imaginations of comics creators. In visual SF, anything can happen, because it is a product of artistic will to power.

Such figures represent the first type of superhero. The second type consists of superheroes who were never anything more than human, although humans trained and equipped to an advanced degree. The prototype for these is Doc Savage (whose adventures ran from 1933 to 1949) the prose pulp hero who has trained his body and mind to near-perfection, but possesses no supernatural powers. But the key icon here is Batman, an aggrieved urban vigilante created by Bob Kane and Bill Finger (he first appeared 1939; the *Batman* comic began appearing in 1940). The cultural dissemination and continuing global prominence of this figure is astonishing, a deliberately darker, urbanised and more Gothic iteration of the 'saviour'. William Moulton Marston and Harry G Peter created Wonder Woman (who first appeared in *All Star Comics* 1941) as a deliberately female corrective to the masculinity of Superman. Hoping to provide women with a positive role model, Marston and Peter presented Wonder Woman as an Amazon, armed with various items of technology (special bracelets which she uses to deflect bullets, for instance) but without any magical abilities, at least in her earlier incarnations.

Wonder Woman deserves a longer discussion than we have space for here. Marston, a psychologist and the inventor of the polygraph lie-detector test, amongst other things, designed the character to promote peace, gender equality and submission, this latter quality something he theorised via sexualised bondage play as a gender-neutral necessity for the future peaceful co-operation of human beings. His reasoning, that the strong need to learn to enjoy passivity and submission in order to overcome their urge to oppress and persecute, will perhaps persuade some more than others; and in later incarnations this bondage theme is downplayed in the representation of the character. What is not downplayed is Wonder Woman's combination of sexual allure, independence, strength and commitment to utopian equality, and what makes the character as enduring as she has proved is the way these four attributes are all rendered as elements of one another. When Gloria Steinem founded the influential liberal feminist magazine *Ms* in 1971, she chose an image of Wonder Woman for the inaugural cover. Steinem later wrote,

Wonder Woman symbolizes many of the values of the women's culture that feminists are now trying to introduce into the mainstream: strength and self-reliance for women; sisterhood and mutual support among women; peacefulness and esteem for human life; a diminishment both of 'masculine' aggression and of the belief that violence is the only way of solving conflicts. [Steinem, 1]

Why have Anglophone SF comics been so overwhelmingly dominated by superheroes from the 1940s to the present day? Indeed, the last ten years or so have been so dominated by DC and Marvel Comics Universe movie franchises that this question possesses a very contemporary urgency. The argument of the present study is that this vogue expresses, in a popular-cultural idiom, the root concerns of SF: the role of the Saviour and the status of atonement in a modern, scientific post-Copernican cosmos. In other words, the superhero

trope expressed concerns that, for local, cultural reasons—angst occasioned by the bloodletting of World War II, fear at possible nuclear catastrophe, guilt at increasing material affluence, and uncertainty as to what form a saviour would take to relieve these worries—reproduced the same cultural anxieties that lay at the origin of SF as a genre. To put it another way, SF’s longstanding mediation of the dialectic between material (scientific) and spiritual (religious) understandings of the cosmos is also behind the various inflections of the superhero in 1950s comic art. Some are more material, the human component of the saviour-archetype; some are more supernatural, gifted with quasi-magical powers. This is not to say, exactly, that these superheroes are ‘types’ of Christ. Rather, I am suggesting that they responded to similar cultural anxieties to those that also generate public receptiveness to religious discourses, although the parallels between the key superheroes and the Christian archetype are hard to ignore. Roger Sabin, the most respected historian of comics, quotes Siegel’s comments on the creation of Superman (‘all of a sudden it hits me—I conceive a character like Samson, Hercules and all the strong men I heard of rolled into one’) adding:

It is clear that the writer [Siegel] must also have been aware of the analogies with Jesus: Superman was similarly a man sent from the heavens by his father to use his special powers for the good of humanity. [Sabin, 61]

In place of religious idiom (a divine saviour combats sin, and atones for our inherent sinfulness with a sacrifice) SF comics provided a new popular cultural logic that addressed the underlying anxieties (a superhero battles various incarnations of evil, usually only defeating them at great cost to himself).

This did not happen overnight. After flourishing in the 1940s and early 1950s comics were losing ground by the later decade. But by the early 1960s, which ushered in the Silver Age of comics, one publisher (Marvel) and two authors—Jack Kirby and writer Stan Lee, arguably the two most significant figures in 20th-century comics—enjoyed new success. In Sabin’s words ‘the success of Marvel had the effect of kick-starting the entire industry back into life’ [Sabin, 74]. In short order Kirby and Lee created the most iconic comic figures of all (after Superman). Marvel’s first big comics success was *The Fantastic Four* (1961–present) with its team of elemental superheroes, including the super-pliable, stretchable hero Mr Fantastic (the element of water), a revamped version of the Human Torch (fire), the Thing (a monster seemingly composed of orange-rocks, with enormous strength, thus an analogue for Earth) and the Invisible Girl (air). In *Spider-Man* (1962–present), created by Stan Lee and artist Steve Ditko, a young man is bitten by a radioactive spider and given certain arachnoid special powers. With this character Marvel posited the first psychologically ‘realistic’ superhero, a youth as volatile, sensitive, and insecure as any person his age, whose superpowers come at a personal cost and always end up causing him as many problems as they solve. Two further Kirby/Lee creations have also proved especially enduring. *The Incredible Hulk* (1962–present) was

a comics reworking of Stevenson's *Jekyll and Hyde* combined with the Karloff incarnation of the Frankenstein Monster, for the Hulk, the huge, green, monstrous, yet strangely innocent monster of the id lurking inside mild-mannered scientist Bruce Banner, does not express the brutish sinfulness of Stevenson's 'unaccommodated man'. *The X-Men* (1963-present) produced another team of superheroes, avatars of a new evolutionary stage in human development in which mutants with special powers are common. The most obviously messianic Kirby/Lee creation is *The Silver Surfer* (first appearance 1966; series from 1968), which posits a godlike, planet-devouring entity called Galactus. Norrin Radd, an alien from the idyllic world of Zenn-la, offers himself as a sacrifice to save his homeworld from Galactus' depredations; Galactus accepts and transforms Radd into the Silver Surfer. After serving him for an unspecified time as a scout of worlds suitable for consumption, the Surfer comes to Earth where, moved by the nobility of some of the creatures he discovers there, he rebels against Galactus, fighting to prevent him from devouring our planet. In this he is successful, but as punishment he is confined to Earth. The tone of the series, as is often the case with Lee's rather wordy and operatic idiom, treats this fanciful scenario with a high seriousness; and at its best it does express something important about the role of intermediaries between Earth and cosmic forces that also recapitulates the core dialectic of SF.

EUROPEAN COMICS

Comics also enjoyed a boom in Europe. In Britain the *Eagle* comic ran the very popular 'Dan Dare: Pilot of the Future' comic strip (created by Frank Hampson) from 1950 through to 1967. Lantern-jawed, stiff-upper-lipped Dare, together with his subaltern Digby and various other companions, flew about the solar system and beyond, having varied, wholesome adventures. In particular they often clashed with an 'evil genius' alien called 'the Mekon', a megacephalic, microcorporeal green-skinned Venusian who floated about on what looked like a giant dinner plate. Hampson and his team of artists used photographs and scale-models to achieve a high degree of clear-line, bright-coloured verisimilitude for the comic's various spaceships and props; and it is the overall look of this comic, rather than its often rather derivative storylines, that is its most significant achievement. Dan Dare also enjoyed popular success as a British radio serial (broadcast weekly on Radio Luxembourg 1953-6).

In France comics such as *Espace* (*Space* 1953-4) and *L'An 2000* (*2000 AD* 1953-4) proved relatively short-lived. But postwar France was to become one of the most important forums for the creation of comics and, later, graphic novels. A distinctive home-grown aesthetic was developed in part because of a hangover from the German occupation of the 1940s: 'a Nazi edict banning American comic characters like Mickey Mouse and Flash Gordon was never repealed, giving a home-grown tradition the chance to flourish' [Rambali, 145]. Indeed, after a period of postwar depression Europe emerged into the 1950s keen to establish a distinctive homegrown tradition of SF.

Fantax ran from 1946 into the late 1950s, created by Pierre Mouchotte. Fantax is a superhero, derivative of certain American models; supposedly an English nobleman, and therefore saddled with the frankly improbably name Lord Horace Neighbour, he dons a hood by night and fights crime.

From 1946–47 the magazine *Coq Hardi* ran *Guerre a la Terre* (*War against Earth*), an intricately drawn black and white comic in which small large-headed Martians invade our world and are repelled by an heroic pan-European resistance. In a contemporary touch the Martians ally themselves with disaffected Japanese soldiers, although both are eventually defeated. *Les Conquérants de L'Espace* (*The Conquerors of Space*) ran monthly from 1953 to 1964 in *Meteor* magazine, detailing the proto *Star Trek*-esque adventures of the crew of the starship 'Space Girl'. It was popular enough for several imitations (such as 1958's *Aventures en L'Espace*) to try to cash in. The magazine *Super Boy* was founded in 1949, although the first adventures of the hero Super Boy (not related to DC's Superman) did not appear in the magazine until 1958. But thereafter the strip, drawn in American style by Félix Molinari, became very popular, running into the 1980s.

French radio hosted the long-running and very popular serial *Signé Furax* from 1951 to 1960 (with gaps). This inventive comic drama follows the bizarre adventures of supervillain Furax, who later changes sides and joins the forces of Good, where he (for instance) thwarts an attempt at world domination via a mind-control ray and travels by rocket ship to the planet Asterix. One series concerned alien bodysnatchers that lived inside Swiss cheese, such that anyone eating the cheese became infected with the aliens. The serials were all novelised by the scriptwriters Pierre Dac and Francis Blanche, and further spin-off novels were written by other hands in the 1970s.

In Japan, Osamu Tezuka began drawing the comic serial *Tetsuwan Atomu* (*Mighty Atom*, translated in the West as Astroboy) for the juvenile magazine *Shonen* in 1952. The titular protagonist is a boy-robot with the power of flight who, Pinocchio-like, yearns towards humanity, acting as a miniature metal Superman rescuing people from monsters, mad scientists and industrial accidents. Massively popular in Japan, Tezuka supervised the creation of a TV animated series *Tetsuwan Atomu* (1963-present, with some gaps in production) which helped spread the popularity of the icon.

CONCLUSION

For many readers, and especially those of a certain generation, golden age SF is the real thing, the heart of SF, the paradigm to which definitions of the genre should adhere. It is, perhaps, arguable to what extent these grandiose tech-drunk space operettas and luminous stories of ideas can be seen as exemplifying what this present study has argued are the deep roots of SF, the dialectic between the scientific-materialist and the religious-spiritual discourses. Yet, as Alexei and Cory Panshin have argued, the main impulse of golden age SF was a 'quest for transcendence'. Campbell's later slide towards mysticism, Dianetics, telepathy and all that bag and baggage was not an aberration; it is something included within the fundamentally dialectical logic of SF itself.

NOTES

1. He remains 'the most influential figure in the history of American SF ... he had the capacity to make the wildest or the most personal, of visions, sound like common sense' [Clute, 128]; 'Heinlein was indeed probably the most influential figure in the history of SF' [James, 65].
2. What is especially interesting in this article, I think, is the way in which, even as he points up the disparity between the actual novel and Heinlein's account of the novel in *Expanded Universe*, Gifford strikes an apologetic and, frankly, subaltern tone. He argues that Heinlein *intended* to make 95 % of his Federal Service in *Starship Troopers* Federal rather than military, but somehow forgot, and concludes 'I wish I had had the chance to discuss this directly with Heinlein before his death ... but it is too late, too late—and I can only hope his shade can forgive me for saying he was wrong' [Gifford, 11]. I cite this because it seems to me fairly representative of the extent to which one portion of SF fandom has colluded in Heinlein's construction of himself as a patriarchal authority figure; something indicative of at the least timidity, at the worst servility, and not, I think, a good thing.
3. Smith shared with Olaf Stapledon the dubious honour of having had ideas from his work lifted and reused by other SF writers without acknowledgement to a remarkable degree. Indicative examples include the altered-humanoid Guild Navigators from Frank Herbert's *Dune* novels, who control all spaceflight and are clearly drawn from Smith's scanner and habermen; Kazuo Ishiguro's novel *Never Let Me Go* (2005), which reuses the communities on Smith's planet Shayol where individuals are grown in order to harvest their organs for transplanting; and the Wachowski's 2014 movie *Jupiter Ascending*, in which the ruling castes maintain power by controlling an immortality drug, which reuses Smith's Norstrilians, whose immense wealth depends upon their control of the immortality drug stroon, harvested from gigantic sheep-like creatures.

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The Impact of the New Wave: SF of the 1960s and 1970s

The Soviet Union's successful launch of the artificial satellite Спутник (*sputnik*, the Russian for 'satellite' or 'companion') turned space travel from an imagined future to a present reality, making 1957 a watershed of sorts for SF. John Clute puts it well:

There may have been a time, in the morning of the world, before Sputnik, when the empires of our SF dreams were governed according to rules written out in the pages of *Astounding*, and we could all play the game of a future we all shared, readers, writers, fans ... But something happened. The future began to come true. [Clute, *Look*, 17]

The trajectory of man's space adventure traced what Thomas Pynchon would later call 'gravity's rainbow', the path of a ballistic rocket up, elliptically over and down again. In the late 1950s, especially with the manned orbital missions and the NASA Apollo mission to the Moon in 1969, there was enormous excitement and hope. Many people, particularly in a SF community nurtured on the expansive dreams of golden age fantasy, did believe that one version of the future they had read about was taking root in reality. But by the 1970s it became clear that space travel was (whisper it) a bit dull. Funding bled away; Apollo was curtailed; space travel shrank to commercial and military satellites in Earth orbit, augmented by the occasional robot probe venturing further afield. Occasionally politicians still made promises concerning, say, a manned mission to Mars, but few believed them, and nothing recaptured that initial transcendent excitement.

Reality let SF down. Golden age optimism became harder to maintain as the 1970s went on, and began to look merely quaint by the time the 1980s rolled around. The science fictional response to this state of affairs was complex. It comprised a doubling-down on the hard SF vision by some writers, an insistence on looking beyond NASA's limitations. And by others it entailed a reconfiguring of the logics of the genre, a process referred to by the shorthand term New Wave.

NEW WAVE SF

Critics use the term new wave to describe a loose affiliation of writers from the 1960s and 1970s who, in one way or another, reacted against the conventions of traditional SF to produce avant-garde, radical or fractured science fictions. All these sorts of labels for literary movements are problematic, but the new wave label is more problematic than most. The phrase itself appropriates the descriptor given to a movement from French cinema, the *nouvelle vague*, but the parallels between 1960s SF and the modish, jump-cut exercises in egregious contemporaneity of directors such as Francois Truffaut and Jean-Luc Godard are very inexact.

As Damien Broderick notes, new wave was ‘a reaction against genre exhaustion’ which was ‘never quite formalised and often repudiated by its major exemplars’ [Broderick, 49]. The term itself was probably coined by Christopher Priest in the days when he was a young fan (rather than the major novelist he would become). It was initially associated with the London magazine *New Worlds*, which had been published, with many interruptions, since 1946, but which was relaunched as a venue for experimental and envelope-pushing fiction in the 1960s. Its glory days are associated with the editorship of Michael Moorcock from 1964 to 1971. In an editorial, Moorcock called for a more passionate, subtle, ironic and original form of SF, picking out four writers as promising templates of the new style: J G Ballard, E C Tubb, Brian Aldiss and John Brunner. If we are tempted, as we may well be, to define new wave SF as a deliberate attempt to bring together the literary sensibilities associated with High Modernism and the energies of popular pulp SF, then these four names should remind us that this was never intended as a 50/50 melding. There was always a greater emphasis on the pulp SF side. Tubb, for instance, published 33 novels in his ‘Dumarest of Terra’ saga (from 1967’s *The Winds of Gath* to 2003’s *Child of Earth*), and every single one spins vivid and varied adventures in varied different planetary environments, with all sorts of exotic humanoid and aliens. These novels could have been published 10 or 20 years earlier.

Nor was new wave a merely UK affair. In the words of Edward James, ‘Moorcock gathered around himself a group of talented British writers’ whilst also recruiting ‘a new generation of American writers, such as Samuel Delany, Thomas M. Disch, and John Sladek, all of whom came to London to live, to share in the excitement of those years’ [James, *Science Fiction*, 169]. This perhaps gives too much of a sense that new wave was a product of the swinging sixties of London counterculture. In fact new wave SF was part of a broader international interest in experimental and avant-garde literary techniques. Also in *New Worlds*, Ballard called for a comprehensive rejection of SF cliché:

Science fiction should turn its back on space, on interstellar travel, extra-terrestrial life forms, galactic wars and the overlap of these ideas that spreads across the margins

of nine-tenths of magazine S-F. Great writer though he was, I'm convinced H. G. Wells has had a disastrous influence on the subsequent course of science fiction ... similarly, I think, science fiction must jettison its present narrative forms and plots. [in James, 169–70]

New Wave can be taken as a deliberate attempt to elevate the literary and stylistic quality of SF, but what Ballard's remarks make plain is the extent to which it was also a reaction to the sedimentary weight of the genre's backlist that new writers were beginning to feel as oppressive. By the 1960s so much SF had been published, so many ingenious ideas developed and fleshed out, that thinking of something new, bringing novelty to the SF novel, was becoming harder and harder. What the New Wave did was to take a genre that had been, in its popular mode, more concerned with content and ideas than form, style or aesthetics, and reconsider it under the logic of the latter three terms.

For many fans this was nothing less than a betrayal of what SF was all about. In typically grumpy form, author and SF fan Kingsley Amis declared 'the effects of the New Wave' to have been 'uniformly deleterious'.

The new mode abandoned the hallmarks of traditional science fiction; its emphasis on content rather than style and treatment, its avoidance of untethered fantasy and its commitment instead to logic, motive and common sense ... [instead] in came shock tactics, tricks with typography, one-line chapters, strained metaphors, obscurities, obscenities, drugs, Oriental religions and left-wing politics. [Amis, 22]

This is a deliberate travesty of the movement of course; and the self-satisfaction with which Amis announced that 'by 1974 or so the New Wave was being declared officially over' was unbecoming as well as misplaced. For fans of Amis' persuasion it would be truer to say that the golden age never went away. SF continued to be written according to the protocols against which the new wave was reacting. Murray Leinster, Edmond Hamilton, Clifford D Simak, Mack Reynolds, Gordon Dickson, Fred Saberhagen, Ben Bova, H Beam Piper and various others produced a great quantity of tungsten-hard, mechanically literate and often militaristic SF. Their spiritual home was Campbell's *Analog* magazine (the name *Astounding* adopted after 1960), and their stories were enthusiastically consumed by many SF fans.

Indeed, on a headcount of novels and stories the bulk of SF written in the 1960s (and since) has been hard SF of this sort. Many people consider this the best kind of SF, the sort they enjoy most and which therefore they feel most characteristic of the genre. I cannot argue with what many people enjoy. Still, it is difficult to deny that the major fictional achievements of 1960s SF are much less concerned with the props and protocols of golden age hard SF. The half dozen most important texts from this period are fascinated with one subject in particular: valences of the messiah. Although they approach the topic with a variety of technical and formal innovations, and enjoyed varying degrees of contemporary success, a number of novels from the 1960s and early 1970s

have endured the prolonged exposure to the heat that cremates most of the books published in any given year (even the good ones), and have become classics: Heinlein's *Stranger in a Strange Land* (1961); Frank Herbert's *Dune* (1965); John Barth's *Giles Goat-Boy, or the Revised New Syllabus of George Giles Our Grand Tutor* (1966); Michael Moorcock's *Jerry Cornelius* sequence, the first book of which (*The Final Programme*) was published in 1968; and the novels of Philip K Dick's great period, particularly *The Three Stigmata of Palmer Eldritch* (1965), *Do Androids Dream of Electric Sheep?* (1968) and *Ubik* (1969). With these books I am not simply picking a handful of texts that happen to share messianic tropes to support my argument; they are all massive and influential SF works of the 1960s, certainly amongst the most important literature from that period. A similar work, published earlier, and generically outside the scope of the present history, but which came to massive cultural prominence in the 1960s, was Tolkien's *The Lord of the Rings* (1951–3)—a deeply sacramental work fascinated to an almost obsessive degree by the theological questions of atonement, free will and incarnation. We see the same messianic impulse in Kubrick's film *2001: A Space Odyssey* (1968).

There are probably many explanations that might be offered for this persistent 1960s fascination with the messiah. This was the period, after all, when the Beatles declared themselves on an equal footing with Jesus and in which alternate religions and cults flourished; a period many diagnosed as end times, and many others as a new cosmic beginning, the coming of the Age of Aquarius. There was certainly a sense that human technology had finally caught up with the apocalyptic imagination of previous generations of end of the world prophets; and much 1960s SF grappled—usually in rather clumsy ways, marked by a blinkering anxiety—with the fear of nuclear annihilation.¹ But this possibility has carried through into the 21st century (indeed, our weapons are, regrettably, rather more destructive than theirs were) without provoking a similarly messianic literature. Besides, it is not just that there was a deal of cultural production on the topic of messiahs, it is that there was a series of masterpieces on that theme, and that those masterpieces took the form of SF.

To make myself plain. I think this messianic turn in the 1960s is connected, for deep reasons, to the determining logics of the genre itself. Whilst space travel (the ur-narrative of SF) remained something to look forward to in an imagined future, that future event inflected the idiom of SF as transcendence, a metaphorisation of a more literal escape velocity. But actual space travel quickly revealed itself (inevitably, of course) to be a mundane business even whilst moving beyond the *mundus*. Nuts and bolts accounts of space travel in a fictional idiom seemed less enthralling. Space travel as mystical passage chimed more with the spirit of the age. In place of transcendence, SF reverted to one of its core, originary anxieties. All we have learnt, all of our new science and technology, all that we know now about the cosmos, does this not fatally degrade the uniqueness and effectiveness of the very idea of the messiah? Chiliastic (or, strictly, dichiliastic) concerns may have been part of it, but the fact of 1960s

SF was that it was a looking back rather than a looking forward. The determining problematic of the genre was finding a way to work its way through.

HEINLEIN, HERBERT, BARTH, MOORCOCK

I do not mean to give the impression that new wave SF was a minority or merely avant-garde interest. As John Huntington notes, by the 1960s SF 'had ceased to be the literature of an intensely devoted minority. The broad popularity of *Stranger in a Strange Land* and *Dune* is a phenomenon quite unlike the comparatively select popularity' SF had enjoyed before [Huntington, 2]. One reason for the commercial success of *Stranger in a Strange Land*, *Dune* (and also *Lord of the Rings*) is that these titles became 'campus' books, bought and avidly read by hundreds of thousands of students as countercultural statements. Certainly the mysticism and the presentation of drugs as gateways to transcendental transformation in *Dune* helped it into the affections of mystically inclined, drug taking youngsters; although there is much more to the novel than that. An even more notorious case (in its day) was *Stranger in a Strange Land*.

The story centres on Valentine Michael Smith, a human raised by Martians before being returned to Earth with mystical powers. He founds what is in effect a religion, accumulating disciples, although his cult is a deliberately rhizomatic and freeform one, reproducing the logic of a Martian 'nest' by sharing water and having a deal of sex.² Smith eventually dies, or 'discorporates', at the hands of an angry human mob. Although being discorporeal is not any kind of setback for a Martian who exists equally contentedly on the material or the spiritual plane. One concept he brings is that of 'grokking', a word which fans adopted with such enthusiasm that it has now entered the language (OED: 'grok, *v. trans* (also with obj. clause), to understand intuitively or by empathy; to establish rapport with'). The knowledge one obtains by grokking is super-rational, total and quasi-mystical; but it is also elusive. It is only three-quarters of the way through the book, after establishing his wildly successful religion and performing many miracles, that Smith can tell his main girlfriend, 'I grok people now, Jill ... I grok "love", now, too' [Heinlein, *Stranger*, 127]. By the end *what* the novel groks comes close to mere banality. Asked whether he considers himself God, Smith replies 'with unashamed cheerfulness. "I *am* God. Thou art God, and any jerk I remove is God too ... when a cat stalks a sparrow both of them are God, carrying out God's thoughts"' [Heinlein, *Stranger*, 421]. A stoned mind might construe this as mystical wisdom; a more sober head might find more alarming implications in its muddle. Brian Aldiss diagnoses 'a sinister blurring of fact and fiction' in the 'irrational quasi-mysticism' that haunts the book and quotes with approval the Heinlein critic, Alexei Panshin to the effect that 'the religious premises of Heinlein's novels are untrue, and superpowers do not exist'

Without these anyone who attempts to practise the book's religion (which includes mass sexual relations) is headed for trouble. In other words, the religion has no point for anybody. [Aldiss and Wingrove, 290]

On the other hand *Stranger* is a novel, not a manifesto. Rather than dismissing it as pointless, its religion can be read as an eloquent if sometimes muddy rearticulation of the core anxieties that determined the birth of SF in the 17th century. On one level Smith functions as a parody Christ, preaching Martian baptismal 'water sharing', encouraging cannibalism—Martians, we learn, eat their dead; and Jubal Harshaw (Heinlein's mouthpiece in the book) reminds shocked earthlings that 'symbolic cannibalism' plays a 'paramount' part in Christian liturgy [Heinlein, *Stranger*, 127]. But the book reverses the force of Christian incarnation, and works to contradict the underlying equivalence principle of atonement. A proper grokking enables one to grok wrongness in certain people, a state of affairs which reduces the entire Christian ethical framework to a simple binary—although one with serious consequences, for we learn that the Martians had grokked wrongness in an entire planet and accordingly destroyed it, leaving only its rubble as the asteroid belt. There is the threat in the book that they might do the same with the Earth. Ultimately the 'Thou Art God' conclusion of the novel articulates a vibrantly 'I-Thou' understanding of the nature of the universe, although the book is always saved from mere piety by its characteristic, iconoclastic Heinleinian vim.

Frank Herbert took a rather different perspective on the figure of the messiah in his masterpiece, *Dune* (1965). This novel vied with *Stranger* in its day as the key SF novel of the decade, and is probably the more famous of the two now, thanks partly to a more thorough cultural saturation and the creation of a *Dune* megatext, comprising five sequels [*Dune Messiah* (1969), *Children of Dune* (1976), *God Emperor of Dune* (1981), *Heretics of Dune* (1984), *Chapterhouse: Dune* (1985)], a film (David Lynch 1984), two TV mini-series, video games, two authorised sequels by Herbert's son Brian and his collaborator Kevin J Anderson [*Hunters of Dune* (2006) and *Sandworms of Dune* (2007)] and no fewer than eleven authorised prequels by the same team. Fans have written their own unauthorised fiction, most of it better than this, much of it available online. There have been a clutch of video games set in the *Dune* universe (the best is probably the 2001 EA Games *Emperor: Battle for Dune*) and musical interpretation, such as the moody instrumental electronica of Klaus Schulze's *Dune* (1979). The hospitality of Herbert's megatext to this sort of engagement helps explain the influence he has had on the subsequent development of SF. Like Isaac Asimov before him, and like the creators of *Doctor Who* (1963 on), *Star Trek* (1966 on) and *Star Wars* (1977 on), Herbert invented a world that expanded creatively as fans engaged with it.

The most obvious aspect of *Dune* is that it is an environmental novel. The planet of the title is covered by a world-spanning desert, water is a precious commodity and life is hard; but *Dune*'s sandworms (alien beasts that live and swim underneath the sand) produce a particular *pharmakon* known as spice or

melange, an addictive drug that also grants visions of the future to some, and which is vital—exactly in what way Herbert does not say—to the spaceship pilots who guide starships through hyperspace. Spice is manufactured only on Dune, which makes that world a valuable piece of real estate. When the family of the protagonist Paul Atreides is given the world as a fiefdom (the politics of Herbert's imagined cosmos is medieval, with an Emperor and a rigid hierarchy of castes beneath him) it prompts Machiavellian manoeuvres by the evil Baron Harkonnen, who assassinates Paul's father to grab the world for himself. Paul escapes with his mother into the desert where the indigenous Fremen (modelled on Arab Bedouins) take him in, and to whom he becomes a messiah figure, the Muad'Dib. Eventually Paul recaptures Dune from Harkonnen, leading a Fremen rebellion, and becomes Emperor himself.

Paul's mother is a member of a women-only cult known as the Bene Gesserit, modelled (as Herbert conceded) on his memories of the Jesuit order of the Catholic Church. They have been conducting a secret breeding programme for many generations, hoping to produce a messiah of their own, the *kwisatz haderach*—Paul's daughter was supposed to be this individual, although in the event Paul himself short-circuits their plans and assumes the mantle. We might call the book Catholic (the official religion of the Galactic empire is a combination of Roman and Protestant, predicated on what Herbert calls 'the Orange-Catholic Bible'). This novel connects with a particular aspect of the traditions of SF: anti-technological; mystical; transcendent. In Herbert's galactic empire computers are interdicted by religious fiat ('Thou shalt not make a machine in the likeness of a man') and especially talented humans, called mentats, capable of a computer-like rapidity of calculation and thought, have taken their place. Although there are spaceships and some items of technology, in general life is lived according to a pre-Industrial Revolution logic. But Herbert uses the desert setting to explore the two great desert religious traditions: the Islamic human saviour (we are told Muad'Dib means 'desert mouse', but reminds us rather of Mahdi); and the Judaic-Christian divine messiah.

The book shares with most mainstream SF a dialectical understanding of the relationship between the technical-rationalist and the mystical. Spice gives Paul transcendental powers of future-sight and inner wisdom, but he can only defeat Harkonnen by deploying atomic weapons, which ordnance has, very sensibly, long been proscribed by a sort of strategic-limitation agreement. Paul's use of them is presented as a piece of brilliantly unorthodox generalship, like Hitler ordering his tanks through the Ardennes. More, one of the book's greatest strengths is its detailed and plausible rendering of the political context; a much more impressive fictional achievement than the sketchy and error-filled representation of Dune's extreme environment. Herbert later said his idea for the novel

began with a concept: to do a long novel about the messianic convulsions which periodically inflict themselves on human societies. I had this idea that superheroes were disastrous for humans. [O'Reilly, 38]

Less than two decades after World War II (a culmination of the megadeath convulsions occasioned by several self-appointed political ‘supermen’) Herbert could very well have written a long novel about a Hitler or Stalin figure. But Paul Atreides is a political leader who is also the founder of a religion. The title of the book’s sequels makes the theological bias apparent: *Dune Messiah* (1969) in which Paul, blinded in an assassination attempt, martyrs himself by walking alone into the desert; *God Emperor of Dune* (1981), the fourth in the series, in which Paul’s son Leto mutates into a gigantic worm who rules as tyrant for a thousand years. Herbert wrote no *Fuhrer of Dune* or even *President of Dune*, and there’s certainly no *Separation of Church and State on Dune*. Rather, as the series progresses it deepens and complexifies its initial insight as to the fundamentally religious logic of SF extrapolation. In *Dune* the messiah proves ‘disastrous for humans’ simply in terms of the political upheaval he causes—war, uncertainty and so on—but this is the kind of disaster any conventional political leader can inflict. By the time of *God Emperor* Herbert’s understanding of this disaster is much deeper. Paul’s son Leto, monstrously embodied as a giant worm yet maintaining his essentially human consciousness, is both ruler and god; his tyranny goes far beyond the practical oppressions of totalitarian rule. Because he is a god his total knowledge of the cosmos hems in humanity in a far more metaphysically constrictive way. The problem here is the viability of human free will, and therefore of the disclosure (rather than enclosure) of human vitality. Only by willing his own death and sending humanity on a mass exodus into the unexplored galaxy can Leto break the deadlock. Herbert’s achievement, in other words, was to render the coming of the messiah in an accurately observed political context, noting as he did so how close the messianic impulse is to the fascistic impulse (*God Emperor of Dune* gets my vote as one of the most effective satires on fascism yet written).

Not that *Dune*, as a novel, is flawless. As in all his work, Herbert’s style is leaden and incapable of concision (even in the apothegmatic epigraphs from various philosophical and historical works that head each chapter, and which often run to many hundreds of words). His prose, mostly given over to dialogue and inner monologue, lacks flavour and too often creaks under the weight of exposition—of plot, but more usually, of ideas. Moreover Herbert’s characterisation is often essentialist, to say the least. There is, for instance, a strong whiff of homophobia about the way Baron Harkonnen’s villainy is represented as a function of his predatory, homosexualised decadence. But the book’s strengths eclipse its shortcomings, *Dune* is a novel that achieves genuine grandeur. French philosopher Guy Lardreau—arguably Herbert’s influence has been even greater in Europe than in the anglophone West—calls it ‘a major work’, comparing it with ‘Shakespeare’s great tragedies’ and praising ‘the richness and coherence’ as well as ‘the specificity’ of its imaginative vision [Lardreau, 179–82]. Few UK or US critics would be quiet so dithyrambic, although most would probably agree with Gwyneth Jones’ assessment of *Dune* as ‘the most admired of living imagined worlds’ [Jones 2003, 169]

It's easy to confuse the (undeniable) potency of Herbert's *mise en scène* with world-building in the usual sense of the word. The two are not the same, and indeed in *Dune* the latter has notable problems—the most obvious being the absence of any means by which the atmosphere of Arrakis might be oxygenated (taxed with this, Herbert later claimed his sandworms fart oxygen, which seems an unlikely mechanism when it comes to supplying enough of the gas for a whole world). Rather, *Dune*'s deserts function eloquently as metaphor and topological signifier, empty enough of conventional features (the frontispiece map is a blank page barely sullied by dotted lines showing occasional features) to provide the uncluttered aesthetic and imaginative space. The novel mediates Western perceptions of Arabia and Islam in an imaginatively engaging manner.

In two further respects the novel remains exceptional: the scope and complexity of its representation of history; and its prescient anticipation of the sort of environmentalist concerns (ecology in the idiom of the 1960s) that have subsequently become culturally central. *Dune* was, indeed, the first novel with an ecological theme to have significant cultural impact, Rachel Carson's *Silent Spring* (1962) being non-fiction. Herbert's Fremen live and prosper in the extreme aridity of their environments by being finely attuned to it; they are hoarding water hoping one day to terraform Arrakis into a kinder, moister place—a hope that is fulfilled over the course of the series. The *Dune* novels are a detailed dramatisation of the way environment in the fullest sense shapes both peoples and individuals. Appropriately, Herbert dedicated the novel to 'the people whose labors go beyond ideas into the realm of "real materials"—to the dry land ecologists'.

Herbert's representation of history is also ahead of its time. *Dune* was written in explicit opposition to Asimov's *Foundation* trilogy (1951–3), or more particularly in opposition to the old-fashioned positivism of Asimov's version of history, something he believed amenable to exact scientific prediction. Herbert, on the contrary, sees history on the largest scale as chaotic and finds a number of expressive metaphors for this in the novel (for example, the eddies inside a sandstorm through which Paul must navigate his ornithopter if he wishes to avoid being torn to pieces by the fury of the weather). Though Paul can see the future, the future he sees is full of blind spots and remains in crucial respects undetermined. Prophecy proves radically ambiguous. Herbert also has a good feeling for history as *longue durée*, something the sheer bulk of the complete run of the novels aggregates for the reader. Indeed *Dune* attempts a more fully realised political–historical canvas than had hitherto been attempted in genre, and manages to achieve an impression of complexity that avoids becoming tangled or indigestible. In a sense, Herbert's achievement in *Dune* is finding simple but eloquent tropes for important, complex subjects. Simplifying the landscape of his imagined world entirely to desert enabled him more effectively to stage the difficulties and dangers of environmental niche-survival and change. His future-society is clothed in the simplified feudal lineaments of a medieval fantasy, not because Herbert considers this a likely development in future human history, but because it enables him to sketch more clearly the

large questions of human social and political interaction, authority, mass-movement and social evolution.

This in turn leads to one last point about Herbert, and the global success he enjoyed with *Dune*. To read the remainder of Herbert's *oeuvre* is to be struck that his desire to represent complexity in his writing did not always find such felicitous form. A number of his later novels, lacking the pared-down metaphorical clarity of *Dune*, feel by comparison clogged and arid. *The Dosadi Experiment* (1977), one of a series of Herbert novels set in a future multi-alien federation called the ConSentiency, shares form and plot similarities with *Dune*, but lacks the central imagistic directness and metaphoricity of the earlier novel, and is much less memorable. The 'Void' sequence, beginning with *Destination: Void* (1966) and continuing with several fat novels from Herbert's later career [*The Jesus Incident* (1979), *The Lazarus Effect* (1983) and *The Ascension Factor* (1988), all co-authored with Bill Ransom] has a tedious, scholastic feel in its seemingly endless elaboration of quasi-theological niceties and abstract social questions, all spun from the unengaging premise of a spaceship's artificial intelligence that becomes a god.

Dune, in other words, is oddly uncharacteristic of its author. It is a *spacious* book, a novel of disclosure rather than enclosure, and it possesses, despite its various ormolu plotlines and twists, an almost minimalist feel. The book's transformation into collective megatext indexes the inviting open-endedness of its aesthetic. But this is not what we find if we turn to the rest of Herbert's work. On the contrary, his predominant aesthetic there is one of claustrophobia. His first novel, *The Dragon in the Sea* (1956) relentlessly increases the pressure on its confined, increasingly paranoid submarine crew, just as the humans in *Destination: Void* are trapped in the confines of their spaceship. Herbert returned in several novels to versions of human life modelled on the close-packed hive existence of insects—*The Green Brain* (1966), *Hellestrom's Hive* (1973)—and *The Dosadi Experiment* crams 850 million individuals into 40 square kilometres. In both the *Void* and *Dune* series, characters are repeatedly recycled, dead individuals resurrected as clones or otherwise put through their paces again, an economy of characterisation that lends a rather pinched, closed feel to the thousands of pages of verbiage. It's not that these formal embodiments of claustrophobia are not interesting, but it was not this that won Herbert his many fans. That was due to the compelling open textual space of *Dune* and its successors, the trope of the saviour that opens up rather than closes down existential liberty.

Unlike Herbert's quasi-fascist, metaphysical messiah, and very unlike Heinlein's alien *grokmeister* messiah, the messiah of American novelist and academic John Barth is deliberately goatish. *Giles Goat-Boy, or The Revised New Syllabus of George Giles Our Grand Tutor* (1966) tells the story of a human raised as a goat on a farm who comes to believe that he is the messiah. Barth sets his novel in a future world divided between two great universities, parodically translating cold-war geographies into the idiom of the campus novel (several other SF books from the period imagined the world as a giant campus,

most notably *The Last Starship from Earth* (1968) by John Boyd—also an archly complex story about a messiah saving the world). The West Campus is ruled by a supercomputer known as WESCAC, just as the East Campus is ruled by EASCAC, and the titular goat-boy may or may not be the son of WESCAC, the first programmed man. He aspires to the role of messianic Grand Tutor, preaching a gospel of ‘Pass All Fail All’. This compendious book (350,000 words long) packs in a great deal of contemporary satire and word-play; although the division between soul and body is rather overschematised. Giles translates the slogans of Christ into the campus idiom (‘passéd are the flunked!’) but is all goat, not only in terms of eating straw but in a relentless and rather tedious randiness that sees him copulating with other goats and an array of depressingly uncomplaining women. The novel deals so blithely in so many rape scenes that it goes beyond satire into distress. The sex, and the oblique blasphemy, might have seemed more shocking in the 1960s than they do today, although there is much more to the book than iconoclasm.

The centrepiece of the novel is a lengthy modernised version of *Oedipus Tyrannus* in slangily inventive rhymed couplets. The point is less to parallel Giles and Oedipus, and more to point up the Greek origin of the word tragedy (which is derived from *τράγος*, *tragos*, goat). Giles’ goatish tragedy is in his repeated failure to achieve or even understand what is required of him as saviour; he even fails in his attempt to martyr himself by hanging. The religion that grows around him can’t even distinguish between Giles and his adversary, the diabolic Stoker. The book’s preface declares the messiah to be ‘one Stoker Giles, or Giles Stoker—whereabouts unknown, existence questionable’ [Barth, *Giles*, 7]. But by the end of the book we understand that this confusion is the whole point. Confronting WESCAC Giles short-circuits it (‘I made a short circuit,’ I admitted ... ‘but I don’t think WESCAC’s damaged’, Barth, *Giles*, 780). Barth roots his messianic satire in goatishness not just to shock, but also to invert the premises of mysticism—opposites meet, passing and failing are rendered the same—but in a sub- rather than a super-rational idiom, in the volatile stew of goatish urgings, lusts and confusions that structure the book. Barth’s SF messiah is important precisely because he out-materialises the materialist idiom of SF itself. Giles, locking horns with the World Computer, is the bestial saviour in an intellectual cosmos.

Jerry Cornelius, the invention of prolific British writer Michael Moorcock inflects the Jesus Christ type (whose initials he shares) in a new way again. Cornelius is messiah as pataphysicist, an ostentatiously motley character, if indeed the term character, with its traditional associations of psychological coherence and verisimilitude, can even be applied to him. He passes through the disconnected, multifarious Moorcockverse inventing his own harlequinade as he goes, and casting himself as the protagonist.

Moorcock began writing at an early age, composing in breathtakingly prolific style, extruding a continuous string of generic fantasy adventures from the early 1960s to, more or less, the present day. Jerry Cornelius first appeared in *The Final Programme* (1968), a book written, Moorcock would later claim,

in nine days. It is a patchwork novel, its text littered with sketchy illustrations and diagrams, the narrative crazy-paved and jolting, and it (as the phrase goes) fizzles with energy. Cornelius appears as a kind of surreal James Bond, driving and flying a succession of fancy machines across war-damaged European landscapes, killing without remorse, indulging in drink and sex to excess. The ambiguous villain, Miss Brunner, uses a huge computer called DUEL—Decimal Unit Electronic Linkage—to create a programmed hybrid of herself and Cornelius, a transgender posthuman [‘it was hermaphroditic and beautiful ... [its] skull contained the sum of human knowledge’, Moorcock, *Cornelius Quartet* 138–40]. This being destroys Europe. In *A Cure for Cancer* (1971) Cornelius is a photographic negative of himself: black-skinned; black-teethed; white-haired. He gets tangled in a bewildering series of non-linear adventures across a war-wrecked England, meeting again characters we now realise are archetypal: his doomed sister Catherine; his evil brother Frank; his lover Una Persson; and so on. The third volume in the quartet, *The English Assassin* (1972), starts with Cornelius dead, and follows his slow, uncertain resurrection. The novel’s sub-title ‘A Romance of Entropy’ provides one pointer to the focus of the kaleidoscopic series, the only thing treated more casually than sex in the Cornelius books is death, meted out to millions in a paragraph, or struggled back from by Cornelius. In fact, Cornelius is not just a counterculture Messiah, but a postmodern Shiva, simultaneously demiurge and destroyer. *The Condition of Muzak* (1977) ranges widely across Moorcock’s time-fractured Europe and recapitulates the earlier books in what Moorcock, with uncharacteristic pretentiousness, called ‘something approximating sonata form’ [Moorcock, *Cornelius*, 144]. These last two Cornelius books are somewhat in love with an elegant Edwardian version of their SF world-making, something that anticipates steampunk by a decade and a half. Various other Cornelius short stories and novels followed, too many to list here [they are collected in the omnibus editions *The Cornelius Chronicles Volume II* (1986) and *The Cornelius Chronicles Volume III* (1987)], and a fair proportion of these were written by Moorcock’s friends, including Brian Aldiss, M John Harrison and Norman Spinrad. Cornelius also appeared, with a slightly different emphasis, in other Moorcock books. The whimsical far-future sequence *The Dancers at the End of Time* [*An Alien Heat* (1972), *The Hollow Lands* (1974), *The Ends of All Songs* (1976)] features Jherek Carnelian as a decadent posthuman dandy, whose time-travelling adventures do damage to time itself as he courts the respectable 19th-century housewife Mrs Amelia Underwood through his and other universes.

Indeed, at some point in the 1960s or 1970s Moorcock began conceiving of his works as all taking place in the multiverse, a neologism that describes the infinite network of possible alternate universes which mesh in complex and unpredictable ways. Cornelius, in this way of thinking, became one with Moorcock’s other hero characters—the high fantasy warriors Elric and Hawkmoon for instance—all facets of one archetypal Eternal Champion, fighting to keep chaos and order in balance. But Jerry Cornelius figures as

something much more interesting than this, an attempt to figure the messiah as a being who goes beyond order and chaos, a pataphysical incarnation of satire, pastiche and excess. Read with the proper attention, the Cornelius books represent a nicely shocking experiment in messianic thinking. Rather like Christ, Cornelius comes not to uphold the order/chaos yin/yang, but to overthrow it; even in his anti-entropic selfishness to overthrow the principle of overthrowing (Fig. 12.1).

Moorcock certainly tried harder to shock than most of his contemporaries, and many moments remain shocking, even in our less inhibited age (the 1971 short story 'The Swastika Set-Up' begins with Cornelius committing incest with his mother, she 'lying on the bed with her well-muscled legs wide apart, her skirt up to her stomach, her cunt smiling.' Moorcock *New Nature*, 264). These sorts of *épater les bourgeois* textual tactics—the Cornelius books are full of them—have a clear connection to the disarrangement of conventional narrative linearity and typography of most of the books. Moorcock was later to

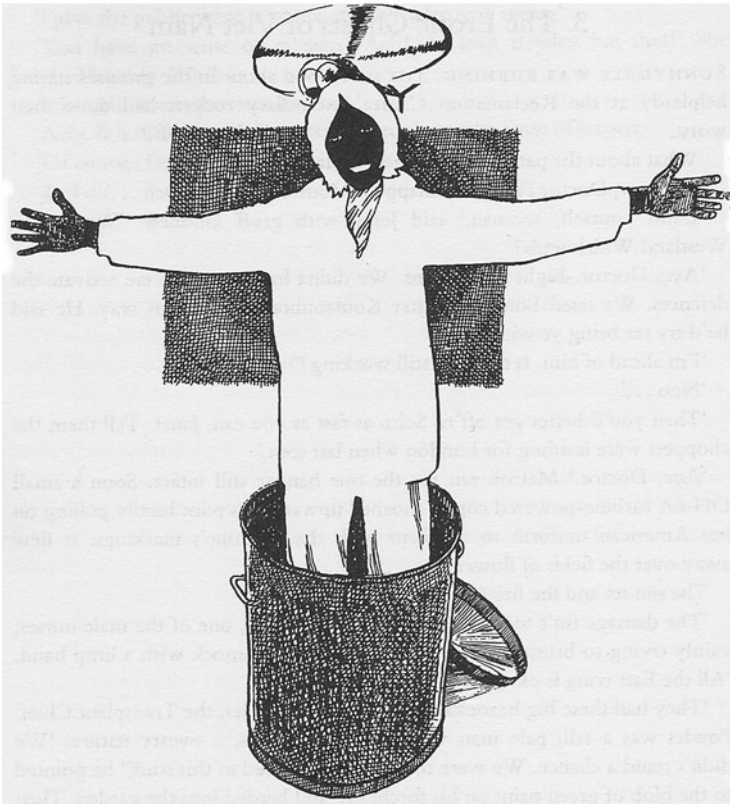


Fig. 12.1 Jerry Cornelius: a pataphysical Christ (Illustration from *A Cure For Cancer*, 1971)

downplay this feature of his writing: 'style and technique was merely a means to an end—frequently a very moral means to some very moral ends' [Moorcock, *New Nature*, viii]; but this doesn't ring very true. After all, even Charles Manson cited the Vietnam war, the armaments industry, and 'the hypocrisies of the liberal bourgeoisie', as Moorcock does here, to excuse his transgressions. The point of Cornelius goes beyond soapbox politicking, even on such wholly creditable positions as opposition to Nixon, war and bourgeois-hypocrisy. The novels' importance as experimental fiction is not limited to, or even especially encapsulated by, their modishly fractured layout. It lies rather in the thoroughness with which Cornelius himself deconstructs notions of saviour by redefining atonement in entropic terms and embedding a brilliantly unsettling arbitrariness into redemption. 'Why,' Cornelius wonders in *A Cure for Cancer*, 'was resurrection so easy for some and so difficult for others?' [Moorcock *Cornelius*, 313]. The novels suggest there may be no answer to this profound question.

PHILIP K DICK

But one key writer from the decade went even further than this in his intervention into the matter of the messiah, American writer Philip K Dick. Dick must be treated at greater length than other authors in a study such as the present one, for he may very well be the most important SF writer of the century. In his own day he was in some ways a typical writer of pulp new wave SF, publishing where he could, writing rapidly, prolifically and in a variety of modes to maximise his precarious income. This led to a consequent roughness of texture in his work—many of his books and stories are a little crudely constructed and read as, let us say, a trifle *under*-revised. He won few awards and garnered little attention when alive. Since his death, however, Dick has proved especially dear to academic critics of SF; indeed, and rather strikingly, much more so than to fandom. Although he remains in print, and although Hollywood continues to excavate his books for movie ideas, Dick has never won a fanbase commensurate with his genius except amongst that specialist group of fans, known as academic critics, who have by and large been egregious in their endorsement. Since I belong to this latter group, I do not say so to be slighting.

Dick is most celebrated for the complexity and thoroughness with which he interrogates the notion that reality might not be what it appears. His best novels take thoroughly quotidian characters, often suburban, usually unexceptional, and rake through their (and our) preconceptions about the world around them. Reality and selfhood depend upon perception, says Dick; and perception is radically unreliable. Drugs, external catastrophe, inner trauma can all unsettle it. The traditions of the visionary writer (Christopher Smart, Blake, Burroughs), in which it is proper to place Dick, has often posited a 'real' or base reality hidden behind the veil of appearances, but Dick takes this insight one step further. No reality has ultimate primacy in his restless imagination, nothing can be trusted. If this leads to a degree of paranoia (an emotion Dick seems to have regarded as fundamentally appropriate, and even healthy, for

modern subjectivity), and indeed of mental instability, then this is also part of the beguiling flavour of Dick's writing.

We can begin by dividing early Dick from late Dick, the two periods in his writing career being separated by a visionary episode he experienced in 1974, discussed below. Dick started his career energetically, writing a great many short stories for the SF magazine market of the 1950s. His shift to writing and publishing mostly novels tracks the new logic in SF publishing associated with the 1960s and 1970s. His shorts were collected in five volumes in 1987, the first four of which include material just from the 1950s. By the 1960s novels—short, rapidly written and consequently often hectic in plot and vibe—were his main output. Always under pressure to produce, Dick fell into the habit of accelerating his production with stimulants during the day, and then winding-down with alcohol in the evening, a regimen that did nothing for his long-term health and may have contributed to his relatively early death. In a lesser writer such hecticness would have produced ill-disciplined and inferior work, but with Dick it enabled more direct access to his unique and powerful imagination. The result was stories, usually plainly written and often conventionally plotted, that nonetheless worked through a kind of brilliant dilapidation of the tropes of the genre, twisted into fantastic new and expressive shapes.

It's for this reason that *The Man in the High Castle* (1962), although today one of Dick's most famous novels, occupies an unusual place in his *oeuvre*. It was the only one of his novels to win a major award in his lifetime (it garnered a Hugo in 1963), and, to be more precise, it occupies an unusual place because of what that fact says about the book. It says it's a book liable to find approbation from regular SF fans. It says it works cannily through an ingenious premise, that it is well-written and tightly plotted; that it construes engaging characters via good and eloquent detail from a properly built-world. Which is a long way round of saying that it is uncharacteristic Dick. His best books are great not despite but because they are more raggedly conceived. *High Castle* is an example of a Hitler-wins alternate history, and is set in a 1960s in which the USA has been divided east and west between Nazi Germany and Imperial Japan. Frank Frink ekes out a living making jewellery and faking antique collectables, an occupation that enables Dick to highlight the slippery problem of 'authenticity', of what Walter Benjamin called the 'aura' (the novel uses the term), inherent in the whole premise of an alternate history. Frink's ex-wife Juliana falls in with an Italian ex-soldier, but like most things in this novel he too is a fake, or more specifically his Italian identity is a disguise. In reality he is a Swiss Nazi assassin. There is a very readable and efficiently handled thriller plot, to do with microdots and the secret sinister 'Operation Dandelion' to start World War III and nuke Japan. But it's hard to shake a sense that we don't need Dick to supply us with competent alt-historical thrillers, the writerly world is full of middling writers who can do that, books like Len Deighton's *SS-GB* (1978) or Robert Harris' *Fatherland* (1992). Dick has precedence on those two authors, of course, although he can't claim to have invented the Hitler wins sub-genre (Clute and Nicholls list ten antecedents, and that's just

with Hitler; there are several dozen more, going back to Geoffroy's *Napoléon Apocryphe*). What Dick can give us is a profound creative *distortion*, and the slightly self-conscious writerly polish of *High Castle* doesn't capture this.

One feature of the novel that escapes these criticisms, I'd say, is the title character, a marginal figure plot wise, but crucial in other ways. The man's name is Hawthorne Abendsen, and his High Castle is a house in Colorado. Guided by the *I-Ching* Abendsen has written a novel called *The Grasshopper Lies Heavy*, an alternate-history science fiction tale set in a world in which the Allies, not the Nazis, won the second World War. Dick, cleverly, makes plain that this alt-history is not the same as our one—in it the British liberated Berlin and put Hitler on trial, for instance—and the existential uncertainty it entails could, perhaps, have troubled the smooth surface of the rest of the novel a little more. At the end of the book Juliana finally meets Abendsen to ask meta-physical questions about the nature of his novel, and through it of fiction as a whole, but his answers are unilluminating, except in one respect. 'To Juliana [Hawthorne] said: "You have an—unnatural mind. Are you aware of that?"' [Dick *Four Novels*, 226]. It's as if all the naïf metafictional pre-postmodernism of the bulk of the novel has been a kind of misdirection, so much so that we can almost miss how important this statement is to Dick's aesthetic; to miss, in other words, how self-contradictory, or monstrous, it would be to say to somebody 'you have a *natural* mind' in Dick's cosmos.

Dick wrote few alt-histories. In the majority of his novels he inflects his contingent and proliferating realities in religious ways. This is true as early as *Eye in the Sky* (1957), a novel whose sketchy premise (a bevatron field) results in eight unconscious characters finding themselves in the private reality of whichever character happens to be returning to consciousness, in which that character is, literally, god, the fearful Eye in the Sky that the other characters must fear. The atmosphere of paranoid angst is distilled essence of Dick. What is striking is not only the freedom but the precision with which Dick's imagination addressed doctrinal questions which would have fascinated 17th-century divines. *The Three Stigmata of Palmer Eldritch* (1965) does more than figure its title character as a messiah to a futuristic solar system; and it does more than gesture vaguely at the notion that psychedelic drugs have religious or transcendental qualities. Christ-type Eldritch claims to have found his drug—Chew-Z, word-play that works with American but not British English—on Proxima Centauri. Intoxication with said drug leads the taker into what seems to be an actual, rather than hallucinatory, world, where Eldritch is the dominant presence. Joe de Bolt and John Pfeiffer get to the heart of the novel's core conceit that 'transubstantiation is actual, not merely symbolic'. They claim the book is a 'weave of the major symbols of Judeo-Christian belief, first in parody, then in a reintegration of them refreshed in meaning' [de Bolt and Pfeiffer, 178].

Palmer Eldritch is as hectic and ragged a book as any Dick wrote, and is consequently much more dream haunting and powerful than *High Castle*. It folds a muddle of different ideas together: a dystopic future-world from which people escape into childish games with dolls, illicitly enhanced by a drug called Can-D;

a programme to fast forward human evolution; an alien messiah. But its loose ends tangle creatively with its core conceits. Why is Leo Bulero, supposedly an *übermensch* 'evolved' human, so simple-minded and deliberate? How exactly has Eldritch managed to travel to and from Proxima Centurai so rapidly? Why do the Can-D users need the Barbie-and-Ken-esque Perky Pat and Walt dolls to orchestrate their fantasy? The ostensible answer provided by the novel is a sort of consensual reality accessed via this Can-D, or else via Eldritch's Chew-Z. There is something sacramental about this, although the symbolism is never heavy-handed. It's possible that the conceit looks ramshackle to modern eyes; we might, for instance, say that we are more likely to be persuaded by an electrocephalic mass-consensual reality, like the Wachowskis' *Matrix*, but even then, we recall, entry was effected via a red pill, and food remains a semiological focus throughout the film. Perhaps this bespeaks the oral, rather than anal, bias of SF's imaginative fantasy. 'It's an oral thing,' Dick's Leo Bulero notes [Dick, *Four Novels*, 392]. In *VALIS* (1981) Dick made it clear he knew what the German word for fat was. In real life Dick was fairly slim. Indeed, there is something lean and hungry about Dick's fiction. Food is rarely described in his novels, family meals or feasts never (drinking is a different matter). It's an intriguing absence, and has to do, I think, with Dick's suspicion about possession, something he viewed as equally desirable and unachievable. When we eat something we make it unambiguously *ours*. You and I may bicker over who owns this chocolate biscuit, but once I wolf it down into my belly the debate is over. This is one reason why the pleasures of eating and drinking retain their childish intensity; that portion of our lives when possessing things, and not letting others get their hands on them, can be so vitally important. But it is at the very heart of Dick's vision that things we assume are ours are rarely, if ever, so; not external goods (the material commodities of *Ubik*), not even the intimate parts of our own bodies, or minds.

Descartes, famously, searching for one thing that he could absolutely and certainly call his own, lighted joyfully on the *cogito ergo sum*. It was something he was sure no malicious demon could take away from him. But Dick is an *anti*-Descartes. He approaches 'I think therefore I am' with the rather brilliant counter-argument: why do you assume that the thoughts in your head are *yours*? It's an index to the centrality of the *cogito* to Western thought as a metaphysical cornerstone, or guarantee, just how unsettling this brilliant, penetrating question can be.

The punch of *Palmer Eldritch* is, in the end, the nightmare of being trapped in somebody else's imaginary world. It reflects upon: the nature of literature; the horror of finding oneself a slave to the artist or writer; the sacrament of art that, by entering the body, locks us in. That existential claustrophobia, something Dick captured as expertly as any 20th-century writer, finds particularly resonant expression in *Do Androids Dream of Electric Sheep*. Rick Deckard, the android hunter, is surrounded by inauthenticity: his animals are fake; his wife's emotions are decanted into her from a machine; he can't be sure if the people around him are actual or artificial; the god of his religion is nothing

more than an elderly actor performing a role. It's conventional to observe how very different the movie adaptation, *Blade Runner* (Ridley Scott 1982), is to the original novel, a position that can perhaps be overstated. But as far as this realisation of existential claustrophobia goes, it holds true. Ridley Scott, trying to find a visual correlative for the novel's sense of claustrophobia, rendered it literally: all choking streets, crowds, dark, narrow spaces. Dick's instincts were cleverer; his hemmed-in characters exist, counter-intuitively but *rightly*, in the echoing, enormous, empty spaces of a mostly abandoned planet. Scott's replicants, with time's winged chariot hurrying up behind them, are *pressured* to act in the desperate and cruel ways they do. Dick's androids, on the other hand, exist in a weirdly flattened, opened-out world, where vacancy and spaciousness are externalisations of a much more horrifying open-ended moral possibility, a universe in which we can do anything, good or bad, without sanction or support. It seems to me that this is why Dick's styling of the androids as essentially children (the scene in which Pris indulges in the peculiarly infantile torture of cutting off a spider's legs has not lost its power to shock) works so well. Children, generally speaking, inhabit worlds where authority is close, personal, intimate—parents or guardians are never far away, God the Father living in their childish heads as versions of the same principle. Dick's androids are like the children in *Lord of the Flies*, only more so, because they do not even have the conventional structures of social morality to lose.

Then again, even Dick's human characters are almost wholly alienated from their own emotions, relying on synthetic emotions generated by mood organs, a premise handled with characteristic Dick wit. Before he leaves for work at the start of the novel Deckard dials up 'a creative and fresh attitude to his job' for himself, and setting 594 for his wife, 'pleased acknowledgment of husband's superior wisdom in all matters' [Dick, *Four Novels*, 438]. Religion is also machine mediated and commodified; the messiah is an elderly man called Wilbur Mercer. Humans connect with his experiences via an empathy box, experiencing what he experiences as he climbs a hill, is stoned to death by mysterious persecutors, descends into the tomb world and is resurrected to climb the hill again. This curious, deliberately ersatz religion balances the kipple, or rubbish, that litters Dick's imagined world. One character puts it in those terms explicitly, the entropic kipple 'reproduces itself ... drives out nonkipple'. 'No one can win against kipple' we are told, 'except of course for the upward climb of Wilbur Mercer' [Dick, *Four Novels*, 480–81]. Mercer is assumed to be an alien messiah, but he turns out to be a fraud. In a complex denouement it transpires that the journalist who exposes Mercerism as a cheat is actually an android, hoping to destabilise human society; but this recognition of Mercer as a sham proves to have no effect on religious belief. Deckard meets Mercer, and even fuses with him in some sense, to hear this ultimate lesson.

'I am a fraud,' Mercer said ... 'I am an elderly retired bit player named Al Jarry. All of it, their disclosure, is true ... they [the androids] will have trouble understanding why nothing has changed. Because you're still here and I'm still here ...

I lifted you from the tomb world just now and I will continue to lift you.' [Dick, *Four Novels*, 587]

It is as if Dick has emptied the notion of messiah of all transcendental, religious or even practical content only to find that it still works (Mercer's real name, Jarry, alludes to the ur-postmodern pataphysical writer Alfred Jarry). Dick's bleakly witty vision of a collapsed postmodern world constructed out of nothing but surface, simulation and detritus nevertheless coalesces a genuine atonement.

Ubik (1966) is based on two premises. One is a future in which those individuals with psi talent, telepaths and precognitives, are routinely employed by corporations for industrial espionage. Glen Runciter makes a living in this world managing a corporation that hires out *anti*-psi personnel to neutralise the psi danger. The second premise (adapted from Dick's 1964 story 'What the Dead Men Say') is that some deceased individuals are maintained in a cold storage half-life, where their brainwaves can be read and the living can communicate with them. This half-life slowly decays towards full death, but so long as it lasts the dead are not wholly dead. But the story moves in a startling direction from these fairly standard SF premises. Runciter is assassinated and his team put him into cold storage, and the survivors soon discover the real world is decaying in strange ways; recently bought coffee is weeks old and mouldy in the cup; technology devolves to 1930s levels (for example, one character's TV devolves into a valve radio); Runciter's face appears on coinage and banknotes. It appears that Runciter is trying to communicate with his employees from beyond the grave by leaving bizarre messages in various places. It slowly becomes clear that although Chip and his fellows assumed that they had survived the bomb blast and Runciter had died, in fact it was the other way around. As Runciter puts it, in situationist style, his words appearing as crayon graffiti in a bathroom mirror:

JUMP IN THE URINAL, AND STAND ON YOUR HEAD

I'M THE ONE THAT'S ALIVE. YOU'RE ALL DEAD. [Dick, *Four Novels*, 715]

The whole group is, it seems, in cold storage in Switzerland, with the living Runciter attempting to communicate with them. The entropy that preys upon individual members can be countered only with a mysterious product named *ubik* that appears in the form of an aerosol spray. Spraying the contents upon oneself produces a new vigour and energy, where a lack of *ubik* leads to exhaustion and death.

In other words *Ubik* is a book about death. Almost all the protagonists are dead for most of the novel, and in their postmortem existence they decay further towards a deader form of death. It is also, in the manner of Dick's

strangely but potently constellated thematic quantities, a novel about commodity culture, as if dying and consuming were somehow naturally linked. Joe Chip, the novel's protagonist, ponders late in the book how life is like consumption.

Metabolism, he reflected, is a burning process, an active furnace. When it ceases to function, life is over. They must be wrong about hell, he said to himself. Hell is cold; everything there is cold. The body means weight and heat; now weight is a force which I am succumbing to, and heat, my heat, is slipping away. And, unless I become reborn, it will never return. This is the destiny of the universe. [Dick, *Four novels*, 726]

Entropy is here figured as a form of *consumerism*, rather than the tendency of patterns to disintegrate or of energy to run down to a low universal constant. If in *Androids* the saviour was an artificial man, in *Ubik* salvation is quite literally commodified, Christ as aerosol spray.

These three novels (*Stigmata*, *Androids* and *Ubik*) come closest to encapsulating Dick's wayward genius. But he was an immensely prolific writer, and whilst almost all his works contain notable strengths, some become tangled up in their own cat's cradles of con-trick realities, Chinese boxes and veiled conspiracies, and can be rather bewildering to read. The situation was complicated in 1974 by Dick's own religious epiphany. Under various stresses, Dick experienced a series of 'visions' or 'communications' from a being he called the Vast Active Living Intelligence System, or VALIS. Here is Jonathan Lethem's pithy summary, couched in the present tense:

In February, after oral surgery for an impacted wisdom tooth, during which he is given sodium pentothal, [PKD] experiences the first of a sequence of overwhelming visions that will last through and intensify during March, then taper intermittently throughout the year. Interpretation of these revelations, which are variously ascribed to benign and malign influences both religious and political (including but not limited to God, Gnostic Christians, the Roman Empire, Bishop Pike [a friend of Dick's who had died in 1969], and the KGB), will preoccupy Dick for much of his remaining life. 'It hasn't spoken a word to me since I wrote *The Divine Invasion*. The voice is identified as Ruah, which is the Old Testament word for the Spirit of God. It speaks in a feminine voice and tends to express statements regarding the messianic expectation. It guided me for a while. It has spoken to me sporadically since I was in high school. I expect that if a crisis arises it will say something again' ... He begins writing speculative commentary on what he comes to call '2-3-74' [Dick *VALIS*, 833-34]

The process of writing this commentary bordered on hypergraphia with the aggregation of over a million words in a journal he called *Exegesis*. It also formed the raw material for several late novels: *VALIS* (written 1978, published 1981); *The Divine Invasion* (1981); *The Transmigration of Timothy Archer* (1982). *VALIS* gives the most detailed account of the experience, skewed only

minimally into fictional form. The book's deuteragonists are Philip Dick and an alter ego named, in a piece of etymological whimsy (via the Greek of PKD's first name, and the *Deutsch* of his surname) Horselover Fat. This schizoid conceit is leavened by some metafictional play, such that the details of Philip Dick's life (unmarried and childless) do not map onto those of the actual Philip K. Dick. In the novel Fat is the one who has the revelation from God, and he, together with Dick and a couple of other friends, try to make sense of it. They find clues buried in a commercial motion picture called *Valis*, made by rock star Eric Lampton and his wife Linda—based upon Bowie's *The Man Who Fell to Earth*. In the novel Fat, Dick and friends visit Lampton and meet a preternaturally eloquent young girl called Sophia (that is, wisdom). It seems that the messiah is actually in the world, and she is it; but then Sophia dies, and Fat goes off around the world to uncover the fifth saviour.

Some critics think very highly of *VALIS*. I am not of the some. It seems to me a dull novel, insisting its reader become as fascinated with the scattershot minutiae of Dick's mania or find herself abandoned in a wilderness of barren assertion and speculation. To be precise, there *is* an interesting novel struggling somewhere under this crush of unpalatable horseflesh—a novel that does for 1970s California religious excess what Dick's *A Scanner Darkly* (1977) does for 1970s West Coast drug culture. But its ankles are broken and its heart gives out trying to transport Dick's deadweight *Exegesis*, undigested chunks of which, some very lengthy, litter the text. What's so indigestible about this material is its beady-eyed seriousness: 'The Sybil of Cumae protected the Roman Republic,' we are told, 'in the first century C.E. she foresaw the murders of the Kennedy brothers, Dr King and Bishop Pike'. To which the likeliest response is, 'no, she didn't'. The worst of it is Von Däniken-lite:

The primordial source of all our religions lies with the ancestors of the Dogon tribe, who got their cosmogony directly from the three eyed invaders who visited long ago. The three eyed invaders are mute and deaf and telepathic, could not breathe our atmosphere, had the elongated misshapen skull of Ikhnaton, and emanated from a planet in the star-system Sirius. [Dick *VALIS*, 396–7]

But a good deal of it is Dick's own mystic mumbo-jumbo cosmic narrative. 'Two realms there are, upper and lower. The upper, derived from hyperuniverse I or Yang, Form I of Parmenides, is sentient and volitional. The lower realm, or Yin, Form II of Parmenides, is mechanical, driven by blind, efficient cause' [Dick *VALIS*, 283]; 'Real time ceased in 70 C.E. with the fall of the temple at Jerusalem. It began again in 1974 C.E. The intervening period was a perfectly spurious interpolation aping the creation of the Mind' [322]. Archaic syntax ('two realms there are') recurs like a nervous tic; as do liberal sprinklings of Latin (pretentiously, Dick sub-titles his *Exegesis*, *Tractates Cryptica Scriptura*), both symptomatic of autodidact unself-confidence, a kind of over-compensation. It backfires—these things don't actually lend gravitas or a sense of timelessness, they just look nervily pretentious. Quite apart from anything

else, timelessness and gravitas are not the currency of Dick's visions. 'He came across a part of the *Book of Daniel* which he believed depicted Nixon. "In the last days of those kingdoms,/When their sin is at its heart,/A king shall appear, harsh and grim, a master of stratagem"' [319]. Little dates so catastrophically as politically specific interpretations of Biblical prophecy.

It is true that *VALIS* considers multiple possible explanations for 2-3-74, including the idea that Dick (or Fat) is simply insane; but the book rejects this on the counter-intuitive grounds that such a diagnosis would be reassuring. 'It didn't matter what the explanation was,' says Dick; 'what had now been established was that Fat's March 1974 experience was real' [318]. He qualifies himself immediately ('Okay; it mattered what the explanation was') but refuses to give up the reality: 'at least one thing had been proved: Fat might be clinically crazy but he was locked into reality—a reality of some kind, although certainly not the normal one'. This is demoralising stuff for any true Dick-head. The sense that what in earlier PKD had been a brilliant, intuitive deconstruction of the conventional model of illusion and reality—that, in a nutshell, it really *is* turtles all the way down—has here been decanted back into old gnostic bottles. Though our reality is false there *is* a true reality just behind the veil.

In sum, *VALIS* is a novel of prodigious, almost heroic tedium. To say so, actually, is not entirely to dismiss it. On the contrary, we might want to argue that this actually grounds the book's distinctiveness. Istvan Csicsery-Ronay puts it very well:

For Dick the connections amongst religious gnosis, ethical double-blinds and mental disturbances were drawn ever tighter as his career progressed. In this he shared one of the cherished beliefs of his beloved German Romantics. But Dick's gods are not remote, magnificent aliens; they work on the most prosaic level conceivable. There is no sublime in Dick's fiction. Nature has all but disappeared. For Dick, banality is as much an aspect of our fallen state as death is. [Csicsery-Ronay 1995, 431]

It's difficult to think of another writer, or theologian, who gives us this insight into precisely the *ordinariness* of religious revelation—a thrilling banality perhaps, but a banality nonetheless. The overwhelming majority of the world's population have religious beliefs of one sort or another, after all. Divine revelation is, in fact, the most ordinary human thing of all. *VALIS*' scrambled narrative, littered with facts from Dick's free-associative reading, formally embodies a kind of *messiness* of revelation, one that tugs sharply against his putative urge towards oppressive pantheist unity ('One Mind there is ... the Immortal One whom we worship without knowing his name'). In the mess, and at the prosaic level, are those portions of the novel it is easier to love: some deft characterisation differentiating Dick/Fat's friends; some natty dialogue, some leavening humour. But they are the parts furthest away from the bindweed of 2-3-74 and its elaboration, and the latter chokes the novel.

But only a small shift in balance of the treatment of exactly the same material, the elevation of contingency to the level of plot and the downplaying of the bullying interpretive instinct, makes Dick's other major fictionalisation of this material, *The Divine Invasions* (1981), a much more effective novel. Conceived by Dick as a sequel to *VALIS*, it recasts the Exegetical material as a more palatably distanced science fictional narrative. Herb Asher, a Dick-figure, lives in an individual dome on the planet CY30 II. In the next dome along is Rybys Ronmey. She, although suffering from cancer and despite being a virgin, is pregnant with the new messiah. The prophet Elija informs the two of them that they must smuggle the child to Earth, but this is no easy task. Earth is governed by a combined Communist party/Christian church organisation, the followers of whom mistakenly worship the wicked demiurge instead of the true god. Global governance is effected via Big Noodle, a sort of sentient Internet. Herb and Rybys fly to Earth and get past customs, but their air-taxi crashes, killing Rybys and putting Herb in a coma, in which he relives his former life on CY30 II. The child, though, is transferred to a synthetic womb. It is born, named Emmanuel, and goes to school. The authorities think it suffered brain damage as a result of the accident, although actually it is God, though a deity who has deliberately forgotten its godhood. This works better than *VALIS* because it is able to dramatise the ordinariness of its messianic premise, a dramatically compelling sense of divine contingency and precariousness. The book's uniquely Dickian associative leaps, more often than not, redeem it from conventionality.

We might want to call the experience of '2-3-74' a nervous breakdown, and Dick himself was aware of the possibilities that his continuing visions were merely hallucinatory. But he preferred a more complicated explanation. 'In my opinion Holy Wisdom herself took over my life and directed me ... I lived a wild, unstable, desperate, Quixotic life, & would soon have died. Hence it is not accident that Holy Wisdom came to me; I needed her very badly' [Sutin, 217]. At other places in the *Exegesis* this saviour is called Christ, the Holy Spirit, the Greek god Apollo, his twin sister Jane (who had died in childhood), technologically advanced beings from the future and by various others names. What is clear is not only the prime importance of these models of salvation to Dick's subconscious, but also—more crucially—the extent to which Dick's Christ is a Christ of Indeterminacy. This is arguably the main insight of Dick's work: that embracing a vision of the world as radically indeterminate was not only radically corrosive of rationality, but also of certainty and even coherence. To go right back to the 17th-century theological controversy about the plurality of inhabited worlds, as William Empson put it, the Church denied this plurality precisely because, if accepted, then 'Christ was crucified on Mars too; indeed, on all inhabited planets' and 'his identity in any one appearance became precarious'. Dick makes the startling step of accepting this at face value. The appearance of his Christ is indeed precarious; but not only does this not negate his messianic potential, in fact it is revealed as the *very ground* of his power to save.

LE GUIN

Ursula Le Guin is a writer of genius whose entire career has been a dialogue between mystic and materialist idioms. Her first novels display the influence, in about equal measures, of Tolkien and hard SF [*Rocannon's World* (1966), *Planet of Exile* (1966), *City of Illusions* (1967)]. By her own account she 'got my pure fantasy vein separated off from my science fiction vein' in 1967–8 'by writing *A Wizard of Earthsea* and then *Left Hand of Darkness*, and the separation marked a very large advance both in skill and content. Since then I have gone on writing, as it were, with both the left and right hands' [Le Guin, *Language*, 23]. Her left-handed fantasy writing has been nonpareil. The Earthsea series [*A Wizard of Earthsea* (1968); *The Tombs of Atuan* (1971); *The Farthest Shore* (1972); *Tehanu* (1990); *The Other Wind* (2001)] may be the single best high fantasy series written, delineating a traditionalist imagined archipelago in which celibate male wizards wield a carefully balanced magic, only in the latter two books to elegantly re-imagine the whole from a powerfully realised female point of view. Her SF is also very highly regarded, and with good cause—indeed, there is a case that she is simply one of the premier anglophone writers of the 20th century.

The Left Hand of Darkness (1969) is perhaps her most notable, and certainly her most famous, science fiction book. On the icy world of Winter the humanoid population have no fixed gender, moving from an asexual state into either male or female depending on circumstance. An offworld ambassador, Genly Ai, lives amongst these people for several years, noting the different ways society is inflected without the pressures of fixed gender. There is something solid and appealing in the society Le Guin portrays, although at the same time it is intensely conservative, the frozen landscape it inhabits an externalisation for its inner stasis. The novel also incorporates a mystical aspect, one the rationalist Genly finds hard to assimilate. Travelling from the quasi-Western Karhide to the quasi-Communist totalitarian country of Orgoreyn, Genly eventually makes his way over the glaciers back to Karhide with his companion Estraven. A similar ideological divide (based on the Cold War era Western and Eastern blocs), and a similarly circular pattern of journey from one to the other that leads to a journey back home is found in *The Dispossessed: An Ambiguous Utopia* (1974); a novel that remains one of the most mature and intelligent analyses of the utopian impulse written. The planet Urras (wealthy, capitalist and unequal) is circled by the arid Moon Anarres, settled by anarchists. One of these latter, the brilliant scientist Shevek, finds the surreptitious but inescapable social pressures of status and competition unbearable (in a society in which everybody is supposedly equal) and flees to Urras. There he realises the authorities wish to exploit him, and he returns, circuitously, home. This circularity is integral to the vision of the novel. Le Guin avoids simplistic binaries, and aims for a subtle balance of approaches influenced by a Taoist perspective on the universe.

The Left Hand of Darkness is often discussed, and indeed taught, as a machine for thinking about gender, and it performs that function admirably.

But there is much more to it than its heuristic function, and indeed there is arguably a rather dangerous gender-essentialism inherent in the assumption that Le Guin, because female, must have subordinated her aesthetic project to feminist proselytising. The truth of it is that Le Guin's writing is always much more balanced than that; and indeed, that balance forms one of her major concerns. Both *Left Hand* and *The Dispossessed* balance form to theme, of symbol to narration, flawlessly.

One way of looking at Le Guin's two hands, her fantasy and her SF impulses, is to configure them as reflexive observations about the creative artist. A parable such as *The Lathe of Heaven* (1971), in which the main character finds that his dreams overwrite reality for everybody else, turning his fantasies into actual reality, can be read as a commentary upon the power and danger of the creative imagination. On the other hand, later Le Guin tends to be much less *esemplastic* (to use Coleridge's term for the creative, shaping imagination), and much more observational. There is an anthropological coolness to *Always Coming Home* (1985), which reveals the matriarchal society of the Kesh, in a post-apocalypse California Napa Valley, through a variety of documents, stories, poems and so on. It is not that Le Guin is interested in metatextual game-playing. Rather, as Warren Rochelle argues, she is interested in the socially embodied principle of communication, the currency of communities, she 'argued for a true human community, one of the heart, in which human life can be lived with worth, honour and value' [Rochelle, 173]. A character from *The Dispossessed*, Odo, puts it tremendously well:

A child free from the guilt of ownership and the burden of economic competition will grow up with the will to do what needs doing and the capacity for joy in doing it. It is useless work that darkens the heart. The delight of the nursing mother, of the scholar, of the successful hunter, of the good cook, of the skilful maker, of anyone doing work and doing it well,—this durable joy is perhaps the deepest source of human affection and sociality as a whole. [Le Guin, *Dispossessed*, 207]

In an interview with the *Paris Review* in 2013 Le Guin, looking back on her work, denied that she was a 'searcher' or a 'quester', and truly there is in a profound sense a circularity to her vision of genre. There may even be an allegory of the shift from golden age to new wave science fictional logics in here somewhere: the former a linearly vertical rocket flight up and away; the latter a more self-aware, self-reflexive process of recirculation. 'I am profoundly interested in both Taoism and Buddhism, and they've given me a lot,' Le Guin says. 'Taoism is just part of the structure of my mind by now ... I'm not a quester or a searcher for the truth. I don't really think there is one answer, so I never went looking for it. My impulse is less questing and more playful.' [Wray] For fans hooked on science fiction that provided more linear pleasures, those who desire (to paraphrase Nietzsche) a straight line to goal, the complex, mellow joys of Le Guin's writing may prove challenging. But there is a great truth here, too. As Shevek realises at the end of his circular journey in *The Dispossessed*:

You shall not go down twice to the same river, nor can you go home again. That he knew; indeed it was the basis of his view of the world. Yet from that acceptance of transience he evolved his vast theory, wherein what is most changeable is shown to be fullest of eternity, and your relationship to the river, and the river's relationship to you and to itself, turns out to be at once more complex and more reassuring than a mere lack of identity. You can go home again, the General Temporal Theory asserts, so long as you understand that home is a place where you have never been. [Le Guin, *Dispossessed*, 254]

There is, in this going beyond Heraclitus, something important about the perennial science fictional address to questions of atonement and redemption. Where many new wave SF writers were, more or less modishly, nihilistic about humanity's prospects, Le Guin remained, and remains, a deeply redemptive writer.

BRIAN ALDISS

British writer Brian Aldiss began publishing in the 1950s and has remained a constant and dependable producer of excellent fiction (in various modes) to the present day. The timing of his birth meant that he served during World War II in Burma and Sumatra, an experience he has fictionalised powerfully in the Horatio Stubbs saga [*The Hand-Reared Boy* (1970), *A Soldier Erect* (1971) and *A Rude Awakening* (1978)]. Afterwards he observed the dismantling of the British Empire and the changes of the 1960s. Older than some of the other new wave writers, Aldiss was in a position to make one of the most significant contributions to the creative evolution of prose SF in the 1960s.

Hothouse (1962) is a novel set far in the future on an Earth that has ceased revolving, and whose daylight side is dominated by a titanic banyan tree, amongst whose branches the diminutive devolved descendents of *homo sapiens* scamper and scurry. Giant spider-creatures float through the sky, travelling as far as the Moon, which is also teeming with life. Summary cannot do justice to the brilliant, mind-gripping, sparkling *oddness* of this book. Although conventionally written and plotted, this is a novel that deconstructs notions of character to remarkable effect. Its main humanoid, Gren, is almost unthinking—indeed consciousness as we understand the term is, in this world, a deadly kind of fungoid parasite. Aldiss deliberately overloads the more coherent conventions of adventure narrative, hurling a seething mass of imagery and novelty at the reader, and using Gren's humble consciousness as a means of emphasising the mental crush of sensation.

Gren sank to his hands and knees among the painful stones at the mouth of the cave. Complete chaos had overtaken his impressions of the external world. Pictures rose like steam, twisting in his inner mind. He saw a wall of tiny cells, sticky like a honeycomb, growing all about him. Though he had a thousand hands, they did not push down the wall; they came away thick with syrup that

bogged his movements ... The mirage fogged over and vanished. Miserably he fell back against the wall, and the cells of the wall began popping open like wombs, oozing poisonous things. The poisonous things became mouths, lustrous brown mouths that excreted syllables. [Aldiss, *Hothouse*, 162]

This sort of hallucinatory writing works because much of the novel is so precise in its delineation of its future environment that it reads as real. This vividness depends, in large part, on the expertly realised childishness of the post-human consciousnesses Aldiss creates. Indeed, though violent, sexual and bizarre, *Hothouse* seems to me one of the great evocations of what it is to be a child. Seized by 'the tribe of the True World' a group of humans is brought before a group of deformed elders held captive in large urns, 'one had no legs. One had no flesh on his lower jaw. One had four gnarled dwarf arms.' The human character's response is a straightforward childish disgust, which is in turn met with a childish logic.

'You are too foul to live!' Haris growled. 'Why are you not killed for your horrible shapes?'

'Because we know all things,' the Chief Captive said ... 'To be a standard shape is not all in life. To know is also important. Because we cannot move well, we can think.' [Aldiss, *Hothouse*, 34]

Later in the novel, an intelligent fungus called the morel attaches itself to Gren's head, enslaving him whilst also enhancing his power of thought. Gren's mate Yattmur catches it in a gourd, freeing him: 'he stared down at the still-living morel. Helpless and motionless now, lying like excrement in the gourd' [Aldiss, *Hothouse*, 179]. In other words, this novel styles intelligence itself—that fetish of SF (as literature of ideas)—as excremental, parasitical, deformed. Aldiss deconstructs thought itself; a startling and brilliant strategy that goes beyond the avant-garde literary tinkering with conventional plot or prose style to subvert the underpinnings of literature. But as the novel dramatises, most of life is unthinking, and there is nothing intrinsic to thought that means it ought to be privileged, it is only one evolutionary strategy amongst many (Stephen Baxter makes the same point in his 2002 novel *Evolution*).

Perhaps the most significant feature of Aldiss as a writer is his very restlessness. Some of his early stories were assembled into a patchwork, future history narrative, but taken as a whole his work refuses to settle or reify into any given form. Throughout the 1960s Aldiss continued to push the boundaries of fiction with a number of experimental or challenging novels. Good though these are, their very showiness means that they are less successfully unsettling as the fecund thoughtlessness of *Hothouse*. *Report on Probability A* (1968) is a paranoid story of multiple voyeurs—perhaps an infinite chain of them—all

spying on one another, written in a deliberately dislocated and estranging style. *Barefoot in the Head* (1969) is an exercise in exuberant drug-influenced surrealism. It begins fairly conventionally with its protagonist Colin Charteris travelling across a future Europe; but the fallout from a recent war in which psychedelic drugs were used as weapons gradually infects not only the character but the narrative itself. Peter Stockwell notes the book's increasing 'typological and graphological fragmentation, with the narrative prose interrupted with poems and song lyrics', as well as 'the technique of lexical blending and deviant syntax, which increases in deviance and complexity as the narrative progresses and Charteris leads a Messianic convoy of acid-heads through a series of massive motorway pile-ups and riots' [Stockwell, 63].

David Pringle and John Clute argue that the presiding theme dominating much of Aldiss' writing is 'the conflict between fecundity and entropy, between the rich variety of life and the silence of death' [Clute and Nicholls, 11]. The fact that fecundity often manifests itself pathologically in Aldiss (cancer and fever are common themes) gives his writing a certain darkness. A novel like the superbly controlled *Greybeard* (1964), set in a future in which humanity is sterile, the population aging and facing death, treats its *memento mori* topic gracefully and movingly. The darker tone, howsoever wittily and inventively treated, is a distinctively Aldissian feature. A vicar in one of his late novels, *Affairs at Hampden Ferrers* (2004), confronts, in the size and hostility of the cosmos, the same spiritual crisis as a thinking religious person from 1600. The universe, he argues, is an entity: 'this entity is non-living. It is a sort of process, a cancer on a tremendous scale', asked 'where does God come into all this morbid cosmology' the vicar replies that God 'prevails only over this planet Earth, and perhaps over the other planets of the solar system, but probably not over planets of distant stars', which, he concedes, makes God 'so insignificant' [Aldiss, *Affairs*, 230–1]. This dark vision is more than mere pessimism; it is a restatement of the root anxieties at the heart of the birth of SF. Indeed, several of Aldiss' best novels rework classics of the genre in ways that would later become characteristic of postmodernism. *Frankenstein Unbound* (1973) mixes inadvertently time-travelling Americans with Mary Shelley and her monster in a story that fractures and tessellates the original *Frankenstein* in enormously creative ways, even as the world itself is broken by timequakes (the fallout from a future war). By the end Frankenstein's monster becomes almost a type of Christ. 'My death,' he tells his killer, 'will weigh more heavily upon you than my life ... though you seek to bury me, yet will you continuously resurrect me'; as he dies he announces that he is off to harrow hell [Aldiss, *Frankenstein*, 156]. Two books in a similar idiom followed, the Wellsian *Moreau's Other Island* (1980) and the Stokerish *Dracula Unbound* (1991). After the energetic reinventions of the new wave these later titles act as tacit acknowledgment that the weight of pre-existing SF was becoming increasingly clogging, something writers of new fiction *had to deal* with in some way.

ANGLOPHONE SF

English writer and composer Anthony Burgess was a prolific fabulist of enormous skill and range who, for reasons largely of cultural and religious snobbery (his lower-middle-class background and his Catholicism), was profoundly underappreciated by his native country. Not so abroad, and perhaps not so with now-unfolding posterity. Certainly *A Clockwork Orange* (1962) is a masterpiece of focus, a deeply Catholic science fictional novel. Burgess establishes his setting, a state-controlled future UK greatly influenced by Soviet Russia, less through description, and more—brilliantly—through an invented future argot, an idiomatic mix of slang, Americanisms and Russianisms in which the first-person narrator Alex tells us his tale. He is a thug, bully and rapist who is apprehended and brainwashed by the state, transformed into ‘a little machine capable only of good’ [Burgess, *Clockwork*, 122]. Alex’s crimes are very bad, but this conditioning is much worse; this is the meaning of the oblique title, the inherent monstrosity of the cyborg collision of organic and mechanical (‘the attempt to impose on man, a creature of growth and capable of sweetness, to ooze juicily at the last round the bearded lips of God, to attempt to impose, I say, laws and conditions appropriate to a mechanical creation’, Burgess, *Clockwork*, 21). The main flaw in the novel is Burgess’ grumpy refusal to believe that pop music could be anything other than pap. Alex, so believably teenage in his thuggishness, nurses an improbable love for Beethoven, whose choral symphony whips him into a state of violent excitement. Thrash metal (or, in 1962, rock and roll) would surely be more like it. But the novel’s excellence is linked to the unswerving way it elaborates its point; that it is wholly better for humanity to possess free will, even when some people will use it to behave badly, than for that freedom to be taken away and humanity conditioned, even if the conditioning results in everybody behaving well. It is because of, and not despite, this explicitly Catholic thesis that *Clockwork Orange* is a great SF novel.

Some other titles from the decade seem less significant today, despite being praised extravagantly in their own day. British author John Brunner’s *Stand on Zanzibar* (1968) is a lengthy disquisition layered over a sort of spy plot, set in a monstrously over-populated world. But its choppy, experimental style of writing, lifted directly from the literary experiments of American Modernist John Dos Passos, seems second-hand and overboiled, and the premise of the novel has a phlogiston lack of contemporary bite. Overpopulation has not brought the world to a standstill by the start of the 21st century, and will not do so by the start of the 22nd either. Of course, Brunner was not alone in thinking his premise sharply relevant; many writers in the 1960s and 1970s adopted positions of Malthusian glumness on the subject of overpopulation—a better treatment of the theme than Brunner’s (better because rooted in a pulp terseness rather than a High Modernist prolixity) is Harry Harrison’s *Make Room! Make Room!* (1966).

A much more enduring perspective on impending catastrophe is found in the perfectly dislocated and obsessive SF novels of British writer J G Ballard.

Ballard placed his near-future apocalypses somewhere between literal precision and symbolic generality. Ballard's four early disaster novels construe air, water, fire and crystalline Earth; but isolating thematic patterns like this does not capture the unique strangeness of the actual texts. In *The Wind from Nowhere* (1962) a gigantic gale blows Britain to destruction. In *The Drowned World* (1962) melting icecaps have submerged much of the northern hemisphere, but the novel's focus is psychological rather than meteorological. In *The Drought* (1965) a polluting film on the ocean's surface prevents evaporation and provokes a global drought. There is a slightly didactic whiff about this book (man tampers with the world to his peril); the lack of such implicit moralising makes *The Crystal World* (1966) a much better novel. The African rainforest, and every thing and body in it, is being transformed into crystalline form by some strange cosmic effect. The novel might be called surreal, if that term didn't suggest an inappropriate correlation of imagery to subconscious affect. Ballard's best writing cannot be reduced to any simple schema. It works in the poetic rather than rationalist idiom. His various stylistic and formal experiments from later in the decade (collected in *The Atrocity Exhibition*, 1970) strain perhaps too hard to exterminate the rational reader response, although some of them—for instance, the bizarre meditation on the violence of 1960s America 'The Assassination of J.F.K. Considered as a Downhill Motor Race'—haunt the mind. In the 1970s Ballard moved away from the more recognisable conventions of SF, and became fascinated with the actuality of urban desolation. If there is nothing realist in his version of London life it is because Ballard does not consider the lives people actually live in major cities to partake of realism; something eloquently if sternly worked out in his car-crash-erotica fusion *Crash* (1973), the Beckettian isolation of his protagonist on a traffic island of *Concrete Island* (1974), and the atavistic tower-block ghetto novel *High Rise* (1975). It can be argued that towards the end of his career Ballard lost something of his initial cool savageness, although he certainly gained a much larger readership and made a deal more money, by turning to a more recognisable world in his autobiographical fictions of the 1980s.

British poet and novelist D M Thomas plundered what he called 'myths suggested by science-fiction stories by Ray Bradbury, Arthur C. Clarke, Damon Knight' for a range of poems that conspicuously cross-bred mainstream Modernist poetry with pulp tropes. 'Missionary' (1968) rewrites T S Eliot's 'Journey of the Magi' ('A harsh entry I had of it, Grasud;/the tiny shuttle strained to its limits') with its alien messiah as both Magus and messiah ('I loved them, and they/killed me', Thomas, 91–3). In 'A Dead Planet' a tentacled alien captain lands his ship on the 'broken-pillared plain' of a dead Earth, and instructs his crew to resuscitate one of the human corpses. This 'Man'/'—Such was the thing called' revives with joy that 'his faith was not in vain':

'Dear Christ! ... how blissfully Thou dost abate
The grave's—' His gaze took in the plain;
The ring of orbs devoid of love or hate,

The ray-guns poised to mow it down again
When they had sorted out its true estate. [Thomas, 110]

Many of Thomas' poems ('Two Sonnets from Drifting Worlds', 'Elegy for an Android') strike this rather mordantly elegiac pose, recording a sadness at the supercession of religious mystery by loveless, hate-free science.

American writer Samuel Delany, who began his career as a very young man in the 1960s, remains one of the most stylish and challenging writers working in SF today. *The Jewels of Aptor* (1962) and the Fall of the Towers trilogy [*Captives of the Flame* (1963); *The Towers of Toron* (1964); *City of a Thousand Suns* (1965)] all written in his early twenties, show some of the gaucherie of youth together with a poetic complex of imagery and theme. *Babel-17* (1966) harnesses its rollicking space opera plot to some serious philosophical inquiry into the extent that language shapes and indeed makes reality. *Nova* (1968) manages a similar blend of colourful, kinetic space opera splashes and profounder intensities. In the best of his many jewel-like short stories, he opens trapdoors in generic conventions that drop the reader into strange new territories. 'Aye, and Gomorrah...' (1967) invents a new sexual perversion, and then treats the 'frelks' who practice it (they are attracted to spacemen who have been neutered by their experiences in space) sympathetically and open-endedly. 'Time Considered as a Helix of Semi-Precious Stones' (1969) is a complex meditation on guilt, time and poetry, set in a stylised but wholly convincing idiom with much in common with the later cyberpunk sub-genre. Many critics see *The Einstein Intersection* (1967) as Delany's most significant early work: 'short, but still a work of extreme complexity and resonance ... tightly patterned' in George Slusser's words [Slusser, 42]. Various seemingly archetypal characters interact on an Earth from which humanity has been removed; the messiah archetype finds vigorous and rhizomatic life as Orpheus, Christ, even Ringo Starr. Delany's big novel *Dhalgren* (1975), set in the multifaceted and time-fractured future city of Bellona, has perhaps been more admired than loved. It sold extremely well, despite its *Finnegans Wake*-inspired experimental form and length (presumably because it was, for its day, extremely sexually explicit), but it perhaps proves too turgid to achieve its considerable ambition. Gwyneth Jones calls it 'wilfully opaque', a book with 'a double-edged reputation: definitely a Modernist Masterpiece, but quite impenetrable to the general reader', noting that the novel's advocates have described it 'uninvitingly' as a puzzle without a solution, a riddle that was never meant to be solved [Jones 2010, ix]. The riddle admits of some degree of solution, perhaps; the strange city externalises the schizophrenic inner life of the main character, Kid, a writer *manqué*, a cipher for Delany himself and the locus of the book's polymorphously promiscuous sex. *Dhalgren* is a repetitive book, working the same or similar episodes over and over and filling much of its great length with rambling reports of rambling, stoned or drunken in-group conversation and coitus. Then again, sex *is* repetitive, the same old over and over, and that fact doesn't seem to put us off. The most explicitly Joycean recirculation is the way the book takes one of the

phrases the Kid has scribbled in his notebook ('I have come to to wound the autumnal city') and wraps it around the narrative as a whole: the last words of the novel are the unpunctuated 'I have come to' and the book opens 'to wound the autumnal city'. The comparison with Le Guin's aesthetic of circularity, discussed above, is a striking one. What in Le Guin is about wholeness becomes in Delany something more driven, more psychopathological, a Lady Macbeth-like compulsion that *Dhalgren*, as novel, ties to sexual encounters characterised largely in terms of aggression, impersonality or predation. The Kid, in the middle of one of the book's various gang-bangs, notes to himself that 'when I come balling somebody I'm not too interested in, or having particularly uninteresting sex with somebody I am, I get a picture (or words)':

An image of myself, holding hands with someone ... and running among leafless trees laced with moonlight while the person behind me kept repeating '... Grendal, Grendal, Grendal ...' [Delany, 678]

The monster from *Beowulf*, a sort of ur-figure of masculine rapine, stalks the novel's manifold promiscuities and intimacies. It is only later that the Kid realises 'I'd stuck the brake in the wrong place. The actual word I'd heard at orgasm and that, for the last few minutes had been repeating in my head was: "... Dhalgren ..." [Delany, 679] There is something machinic in the novel's pulsing, pounding structuring principle; the machine as the agent of intimate apocalypse rather than vehicle for *voyage extraordinaire*.

Some of Delany's later novels have been more outward-looking. *Triton* (1976) relates the build-up and destruction occasioned by a war between a future Solar System's more socially restrictive planets (Earth and Mars) on the one hand, and various smaller satellites with more libertarian politics on the other. This is a book that explores and details the tensions between centre and margins in several senses. The central character, Bron Hellstrom, mediates a series of familiar and (to this critic, at any rate) unfamiliar aspects of human sexuality. Hellstrom has himself surgically altered from male to female, and the novel as a whole works tirelessly to unpick the traditional notions of sex as somehow inherent in biological bodies. The commitment to a thoroughgoing polymorphous perversity, and the unflinching acceptance of the violence this sometimes entails, makes the book a compelling read. But some critics may share Robert Elliot Fox's reservations about this novel: 'in *Triton* Delany castigates "overdetermined systems"—e.g. government bureaucracy—but it strikes me that the compulsive polymorphousness of the sexual relationships he depicts ... is itself overdetermined, like the more extreme varieties of Gay Liberation and Feminism, or the fundamentalism of the so-called Moral Majority' [Fox, 49]. A better novel is *Stars in my Pocket Like Grains of Sand* (1984), as densely compact and challenging as anything Delany has written: a sort of love story between Marq Dyeth and Rat Korga (a freed slave and criminal). Delany's fondness for rough-trade characters like Korga is evident through all his work, a *de gustibus* position that will either tend to engage readers or leave them cold.

There is sometimes a self-consciously critical-theoretical flavour to Delany's later writing, the product of his immersion in the newer critical theory of the 1970s, particularly the work of the French philosopher-historian Michel Foucault and the post-Derridean strategies of Deconstruction. In part these informed a series of fiercely intelligent and demanding critical interventions into SF and other cultural discourses, amongst them *The Jewel-binged Jaw: Notes on the Language of Science Fiction* (1977), *Starboard Wine: More Notes on the Language of Science Fiction* (1984), *Silent Interviews* (1994) and *Longer Views* (1996). The ferocity and omniverousness of Delany's intellect make him ideally positioned to encounter the changing semiotics of SF, both as a creative writer and a critic. He continues to produce the most sheerly interesting work in the genre.

Harry Harrison produced a consistent run of highly entertaining space operas, most in a comic idiom. *The Stainless Steel Rat* (1961) was the first of many adventures for its spacefaring anti-hero. Even his tale of desperate survival on an inimically hostile planet, *Deathworld* (1960) [followed by *Deathworld 2* (1964) and *Deathworld 3* (1968)] is leavened by a witty humanity; and his *A Transatlantic Tunnel Hurrah!* (1972; a much better title than the dreary US title *Tunnel Through the Deeps*) is one of the most charming and amusing alternate Victorian-history stories ever written. At the other extreme was the posy humourlessness of Harlan Ellison, one of the period's *enfants* or rather *hommes terribles*. The perpetual-adolescent angst of the story 'I Have No Mouth and I Must Scream' (1967) is precisely captured by its outré title; the story's protagonist, tormented by a malevolent computer inside a virtual reality, literalises the title's screaming mouthlessness. The likewise egregiously titled "'Repent Harlequin!" Said the Ticktockman' (1965) is a slightly more sophisticated account of an over-regulated society. Much of Ellison's work mediates this ill-tempered Beat-ish aesthetic (think Ginsberg's *Howl!*, 1956) through the teenage structures of the genre. His most important contribution to SF may well prove to be editing the collection *Dangerous Visions* (1967), which brought the cutting edge of the best genre writers of the period to a wide audience.³

James Tiptree Jr (the pseudonym of Alice Sheldon) was a much less histrionic and much better writer. Indeed, it may be that the mellow and subtle complexities of her sometimes simple-seeming stories have less currency amongst 21st-century fans than her lifestory. Adopting the male pseudonym (the surname came from a brand of marmalade) and responding to enquiries with many biographical details—such as her stint working in the Pentagon and her role in setting-up the CIA—except her gender, meant she was assumed by many to be male. The general revelation in the late 1970s embarrassed two notable figures in SF in particular: Robert Silverberg who had written an introduction to Tiptree's collection *Warm Worlds and Otherwise* (1975) rubbishing the suggestion that she could possibly be a woman⁴; and Ursula Le Guin who had prevented Tiptree from adding a signature to a feminist petition on the grounds that she was male. As an icon of female genius in the face of the inherent masculinist bias in culture in general, Tiptree has been enthusiastically

adopted by feminist critics of the genre, and with good reason. Nonetheless, it's possible the whole business has tended to detract attention from how varied and un-doctrinaire Tiptree's writing was. Arguably, topics of the woman as oppressed, man as oppressor type did not really bring out the best in Tiptree as a writer. There is one very notable exception to this statement, the 1973 brilliant short story 'The Women Men Don't See', which famously and unforgettably alienises men. Its two female protagonists are, simply, a marvel of characterisation, achieved by a process of, as it were, colouring-in the area *around* them with such skill that the two character-shaped empty spaces left achieve utter believability. The point, of course, is that this presence by absence is exactly the (gender) theme of the story. 'Women have no rights, Don, except what men allow us', says one of the women. 'What women do is survive. We live by ones and twos in the chinks of your world-machine.' [Tiptree, 142] When the mother and daughter twosome swap a masculine human world for passage on a spaceship it's presented as more of the same-old.

Nonetheless it's probably true that when Tiptree handles the oppression of women as a theme it's rarely as expertly done as this. The moral chiaroscuro of 'Your Faces, O My Sisters! Your Faces Filled Of Light' (1976) is too heavily emphasised; the bright innocence of the female protagonist (who believes, wrongly, that she lives in a gynotopian future-world void of men) too clumsily crashed into the raping and murdering violence of the masculine. And 'Houston, Houston, Do You Read?' (1976), though it won its author a Hugo, reads today as too agit-prop, its male characters nudged by the slightest provocation into caricatures, the thinnest layer of pseudo-civilisation over a core of raping misogyny, or power-mad religious mania. This is not, of course, to deny that there aren't a great many misogynistic and sexually violent men in the world. But Tiptree's achievement as a writer was to give believable life to a less cartoony version of the woe that is in human relations. 'The Screwfly Solution' (1977, originally published under another of Tiptree's pseudonyms, 'Racoona Sheldon'), a very neat and very frightening fable, produces greater profundity of both affect and insight by imagining a world in which it is not just rape-minded misogynists but *all men*, including the kindly and the civilised, who, propelled by a hidden alien plan to purge the cosmos of humanity, dedicate themselves to the murder of their women.

There is, underneath the stylistic panache and lively idea-trading of Tiptree, a genuinely tragic sensibility. Tiptree's stories are unillusioned about suffering and do not avoid the responsibilities that this vision entails; but they are never merely pessimistic or po-faced (are often, indeed, very funny). Take 'The Girl Who Was Plugged In' (1973), another Hugo winner. It's rather a cruel piece, really; but cruel in so brilliant and affecting a way, with so eloquently pitiless a central metaphor, that you can't help but fall in love with it. A lanky gargoyle of a girl called P Burke is given the chance to remote-operate (and in the course of doing so, to *become*) a gorgeous sex-princess called Delphi. She's given this chance so that a commercial corporation can circumvent the anti-advertising laws of future-Earth, by getting this cutie to conspicuously handle

specific consumer items in her holovision soap opera. But P Burke doesn't care about that; she's just glad to be unshackled from her former hideousness. She falls in love with a rich young bimbo-boy called Paul. It all ends badly. The core metaphor of the story speaks to a universal human anxiety, and one amazingly prescient of the 21st-century preferred strategy of mediating social interaction through the online discourse of social media. What if my friend or lover could see the real me, monstrous and pale in my subterranean cabin, Burke's 'gaunt she-golem, flab naked and spouting wires and blood'? Surely then they would cease to love me. Although it is eloquent on gender roles, the punch of the story transcends gender.

Istvan Csicsery-Ronay argues that Tiptree's genius was in deploying what he, following Patricia Yeager, calls a 'female sublime', one which rewires the traditional Burkean or Kantian 'masculine sublime' by replacing the 'overpowering, dominating "vertical" force' that disturbs the ego with 'the "horizontal" impingements of diverse others whose claims must be accommodated, but who ultimately require neither the sublation of self nor the repression of others'. Tiptree's writing, Csicsery-Ronay thinks, is 'unparalleled in its use' of this mode of the sublime. [Csicsery-Ronay 2008, 176–77] It certainly makes sense to trope Tiptree's profound engagement with otherness in a more forceful, sense of wonder way than would be suggested by (say) a Levinisian reading, although it strikes me as distorting to imply that her writing is content simply to 'encounter' the other in its otherness. Csicsery-Ronay quotes Adorno with approval to further an argument that her writing repudiates 'the philosophical imperialism of annexing the alien' in favour of letting the alien 'remain distant and different, beyond the heterogeneous'. It strikes me that Tiptree is rarely so balanced. She is a much less comfortable, comforting writer than this suggests, and part of her brilliance is in the way she appropriates and reconfigures sexist figures. 'A Momentary Taste of Being' (1975) tropes all space travel as a cosmic sex act or, more specifically, tropes all *human* space exploration as a phallic out-thrust:

It floats there visibly engorged ... [Earth] is a planet-testicle pushing a monster penis towards the stars ... the parsecs-long phallus throbs, probes blindly under intolerable pressure from within; its tip is a huge cloudy glans lit by a spark. [Tiptree, 275]

We may read this opening gambit and assume it to be a deliberate and perhaps comically intentioned piece of hyperbole. But, in fact, the whole 85-page story elaborates this metaphor in massive, masculine detail. And in what is perhaps Tiptree's masterpiece, 'And I Awoke and Found Me Here On The Cold Hill's Side' (1972), we are a long way from the balanced respect for otherness of Csicsery-Ronay's female sublime. The story concerns a man aboard an interplanetary space station called Big Junction, who manifests a sexual obsession with an alien life form called the Sellice despite their physical incompatibility and indifference. It's not just this guy. All the men on the station feel the same way:

We've hit a supernormal stimulus. Man is exogamous—all our history is one long drive to find and impregnate the stranger. Or get impregnated by him; it works for women too. Anything different-coloured, different nose, ass, anything, man has to fuck it or die trying. That's a drive, y'know, it's built in. Because it works fine as long as the stranger is human. For millions of years that kept the genes circulating. But now we've met aliens we can't screw, and we're about to die trying [Tiptree 40]

This is a story that *almost* convinces us its fantastic extrapolation is actually an insight into human sexual nature. If we were to encounter aliens, Tiptree is saying, then we couldn't help ourselves.

One fine-looking woman, she was servant to a Cu'ush-bar kid. A defective—his own people would have let him die. That wretch was swabbing up its vomit as if it was holy water. Man, it's deep—some cargo-cult of the soul. We're built to dream outwards. They laugh at us. They don't have it. [Tiptree, 40–41]

The sexual frankness of this kind of writing ('man has to fuck it or die trying') is characteristically new wave, as is the sharpness of existential critique. The James Tiptree Award was founded after Sheldon's death to reward speculative fiction that interrogates notions of gender. Her own writing achieved that, and much more besides.

Robert Silverberg is perhaps the most prolific writer in a field not underprovided with prolific writers. He began work in the worthy tradition of a hack SF writer, producing a great many SF novels, and other forms of fiction, for money in the 1950s, and indeed announced his retirement from SF in 1959. Frederick Pohl, then editor of *Galaxy*, is supposed to have lured him back into the genre by convincing him that the market was ready for a more literary form of SF. Silverberg (who had stopped genre writing but not writing altogether) re-emerged as a major figure, perhaps the most technically gifted and omnivorous of his generation. Despite another hiatus (he declared another retirement from SF in 1976, seemingly disillusioned with the insularity of the SF culture, although he was publishing genre again by 1980) he has maintained an impressive rate of production. His 'semi-official' website [www.majipoor.com] lists 1200 titles in its bibliography, a number almost certainly incomplete. Much of Silverberg's early work, particularly his erotica, was published pseudonymously, and not all the pseudonyms have been recovered. The striking thing about Silverberg's best period, in contrast to most writers nurtured upon hack overproduction where *good enough* is the main aesthetic criterion, is how well written and expertly handled his books are. Perhaps it is not surprising, given how completely he has immersed himself in writing over his life, is the frequency with which his best novels become meditations on the protocols of storytelling itself. Perhaps his most fully rendered novel, *Dying Inside* (1972), concerns a receive-only telepath called David Selig who is scamming a living in 1970s New York. The arc of the story traces Selig's gradually waning abilities, but the marvel of the book is the vividness with which Silverberg renders his promiscuous hopping from mind to

mind, some rendered in stream of consciousness, some more imagistically; even, in passing, slipping into the mind of a bee ('there are no verbal outputs from the bee, nor any conceptual ones ... [but] how *dry* the universe of a bee is: bloodless, dessicated, arid. He soars. He swoops' Silverberg, *Edge*, 655). In other words, Selig is a type of author, practising telepathically that empathetic entry into the minds of all manner of consciousness that a good writer must. Similarly *A Time of Changes* (1971), a poised anatomy of a society on an alien world in which the use of I, me and mine is an obscenity (the favoured locution is one, as in 'one would wish for warmer encouragement from one's bondbrother'; although the narrator travels to an even more puritanical society where the only decent locutions are in the passive voice). The book is an excavation of the premise of the first-person narrative, as well as being a compelling story of the repression of subjectivity (perhaps more resonant for an English middle-class sensibility, where such repression is also *de rigueur*).

Any perspective on Silverberg's varied output must acknowledge the extent to which he modified and reproduced the new wave fascination with the messiah. *Thorns* (1967) constellates varieties of physical and emotional pain by way of interrogating not only whether such suffering has a purpose, but whether pain beyond a certain level is compatible with love. *Downward to the Earth* (1970) transposes a Conradian fiction about the exploitation inherent in imperialism (Silverberg is frequently Conradian) onto a jungle planet, following a former colonial governor Gunderson's pilgrimage in search of atonement for his formerly oppressive ways. The book ends with a mystical union between Gunderson and the alien aboriginals which, we realise belatedly, transforms him quite literally into the messiah (the book ends with his understanding that 'I am the resurrection and the life. I am the light of the world ... A new commandment I give unto you, that ye love one another'; Silverberg, *Edge*, 392). *Lord Valentine's Castle* (1980) is a readable piece of swaggering adventure-fiction set on a Vance-style Big Planet called Majipoor, which involves amongst many other things juggling, dreaming, tourism, political intrigue and monster-battling. By the third in the Majipoor cycle, *Valentine Pontifex* (1983), the human inhabitants must make atonement for their crimes against the indigenous life of the world (the monsters of the first book). This involves a rather deadening literalisation of the notion of atonement; in the latter book Majipoor's crops won't grow until Valentine atones for the human slaughter of the whale-like sea dragons, as if contemporary guilt at environmental abuse could wholly encompass the concept of sin. But in his most notable work Silverberg is better at striking the buried chord of SF than almost anybody. *Son of Man* (1971), perhaps his best novel, resuscitates a 20th-century man in a future so far distant that the Moon has disappeared, and the natives have never heard of *homo sapiens*. Through a series of incarnations as different forms of (in some sense) human life, the protagonist embodies the messianic identity indicated by the novel's title, something reinforced by repeated quotation from the New Testament, making plain a fascination with the problematics of incarnation present throughout Silverberg's work.

British writer Christopher Priest is, like Silverberg, a major novelist who has been under-celebrated by the literary establishment. In part this may be because the particular excellence of Priest's writing is hard to isolate. There is (although I don't wish to be essentialist) an Englishness about Priest's work: a control of tone; a Burne-Jones colour-scheme; a sense of loss that hovers on the edge of inexpressibility; a particular *timbre*. The piquant, downbeat paranoia of his first novel *Indoctrinaire* (1970) was called by contemporary reviewers 'kafkaesque', although his unsettling book creates a tone quite unlike Kafka's. The mysteriously oppressive bureaucracy of *Der Proceß*, through sprawling, is at least Germanically (or Czech-ly) efficient. The oppressive atmosphere of *Indoctrinaire* is more ramshackle, enacted habitually rather than consciously, something on the borders of comprehensibility. The closest thing to it in mood is Ballard, but there is an elegiac and attenuated aspect to Priest's prose that is missing from the more aggressive writing of his compatriot. Priest's second novel, *Fugue for a Darkening Island* (1972) is redolent of a peculiarly British 1970s sense of social decay. Set in a near-future England falling into anarchy, it places its rather unpleasant protagonist at the centre of an efficiently grim little narrative, related in a deliberately fractured way. Priest specifically juxtaposes before and after narrative viewpoints, braiding each into each, so that the tale proceeds stereoscopically. Reading through a dialogue of past and future, which creates a deeper, more powerfully bleak, artistic whole. *Inverted World* (1974) takes inversion as its key conceit; the planet on which we live is a finite world existing within an infinite universe. What would it be like to live on an *infinite* world that existed within a *finite* universe? Priest unpacks his premise ingeniously, building towards one of the great surprise endings in SF. But the greatest achievement of *Inverted World* is its holistic aesthetic, the way premise is intimately woven into every aspect of the novel. The coming of age of the Helward Mann, his forward journey through life, functions as a ratio inferior of the way his whole world (the city in which he lives) must continually move through its strange world, aiming always for an optimum location that itself is constantly moving. The physical reality of the life that this challenge entails—moving an entire city forward on rails through a constantly changing environment, picking up the massive rails from the rear and transporting them round to the front, scouting the land ahead and so on—is sparsely but vividly rendered. The first sentence of *Inverted World* strikes the keynote: 'I had reached the age of six hundred and fifty miles'. In other words, this novel is much more than simply a metaphor for life (although it works well as a symbolic fable along those lines). It is about the *spatialisation* of time, the way we so often think of the nonspatial quality 'time' as if it had extension, breadth, depth, as if it were a river, or a road. Heidegger has some interesting, if indigestibly written, things to say about this. Priest's writing is never indigestible. His novel simply, eloquently, takes us into a literalisation of this belief, such that when he provides his *coup de theatre* ending we are shaken up in a deeper way than a simple, narrative, twist in the tale has any right to manage.

The Space Machine (1976) is a recursive confection of H G Wells' *Time Machine* and *War of the Worlds* that reconfigures the 1890s into a tale in which Wells himself makes an appearance, taking us from Southern England to Mars and back. It is a book that interrogates the nature of fiction, the dialectical integration of created worlds of the imagination and real worlds of experience with great agility. This theme found powerful expression in his next novel, *A Dream of Wessex* (1977), an intensely English, intensely science fictive, beautifully parsed and formed novel. This is something wholly new in fiction, SF mediated through Thomas Hardy. The Hardy connection is flagged up by Priest's evocation of a future Wessex, but it runs much deeper than that. It has to do more with an awareness of the ways in which character and destiny shape one another. The plot concerns 39 human minds connected together in a consensual virtual reality in which Wessex has been separated from mainland UK. This imaginary world is a possible future (a century and a half in the future in fact), and its inhabitants are not aware that their consciousnesses are determining this world. Some critics have talked of the novel's conceit as representing an early manifestation of cyberspace (published seven years before Gibson's *Neuromancer*), but this isn't quite right. The exploration of reality and simulation is much more complex in *A Dream of Wessex* than in the matrices of cyberpunk fiction and film. Priest explores the way reality is shaped as much by our unconsciousness as our conscious minds. Priest himself has described *A Dream of Wessex* as

a kind of valediction to traditional SF, because it explicitly describes the process of futuristic imagining, then subverts the whole business. It has been described as the novel that predicted virtual reality, but that's because whoever said it hadn't spotted the subversion.

This is not to say that Priest is nothing more than a subverter, a narrative game-player who enjoys leading his readers up the garden path, a dealer in trick endings and nothing more. His novels actually access a deeper truth. It is not fiction that plays games with our consciousness; it is the nature of mind itself. This is Freud's insight of course; the positing of an unconscious mind to which the conscious mind does not have access, and which indeed thinks *against* the conscious mind in many ways. Something like this is the root ambiguity of Priest's work.

A bridge to consideration of non-anglophone SF of the 1960s and 1970s can be provided by brief notice of the multifarious career of Ian Watson, an English writer who has spent much of his later life domiciled on the Continent, collaborating with European authors and actualising a more cosmopolitan vision of the possibilities of genre. To discuss his whole career would take more space than is available here, and carry us well beyond the 1970s, so it may be enough to note his most significant writing from that decade. *The Embedding*, Watson's first published novel, appeared in 1973 to great acclaim. His follow-up *The Jonah Kit* (1975) won him awards and consolidated his position as a leading British SF writer of his generation. *Orgasmachine* has a more complicated history; written

even earlier than *The Embedding*, a series of unlucky publishing reverses overseen by a hostile (perhaps prudish) providence delayed it until it was finally released in 2001, in Japanese, and 2009, in English. Watson took the opportunity to revise the text; but he nonetheless regards *Orgasmachine* as his first novel.

These three novels ring a series of thought-provoking changes on the theme of communication, broadly conceived. In *The Embedding*, Chris Sole, a UK scientist, is running a rather heartless experiment. Three groups of Third World orphans have been isolated in three basement environments, each group being raised on a different artificial language, with a view to investigating the extent to which different logics of linguistic communication and self-realisation map the capacity of human thought. Chris's wife's ex-boyfriend, a French anthropologist called Pierre, is living with a remote Amazonian tribe. This close-knit, incestuous society has a fantastically complicated language, unlike any other, and Pierre slowly learns it. The third strand to the story involves an alien spaceship on a mission to trade for human brains. The USA recruits Chris (on account of his linguistic expertise) in an advisory capacity. The novel is artfully dispersed between these three storylines. Embedding is a linguistic term, referring to a nesting of clauses within clauses like a Matrioshka doll. But the notion of embedding has a larger relevance, the relationship between the different story elements here is an artfully embedded one, rather than a more banal cause and effect linearity. Sexual, linguistic and national identity fold together in complex, border-dissolving ways. Watson is fascinated by the way communication simultaneously connects and disconnects people, by the way language is both lucid and baffling.

The Jonah Kit features an international cast of characters, from Europe to the Soviet Union (as it was then), from Japan to South America. A young Russian boy appears to have had his mind imprinted with the soul of a dead cosmonaut. A whale (kit, in Russian) struggles with a newly uploaded human consciousness. A deranged scientist, Paul Hammond, believes that he has decoded God's voice in the cosmological remnants of the Big Bang, and that His message is our ontological irrelevance. As with Watson's first novel, this one hides a mind-twisting set of ideas, Polonius-like, behind a well-made narrative tapestry. *Orgasmachine* might seem, on the surface, to be a rather different sort of novel to the other two. *Embedding* and *Jonah Kit* plait multiple narratives in unconventional ways to bring out fundamentally philosophical ideas about language, understanding and our place in the universe. *Orgasmachine* posits a world in which women are grown for sex, rather as artificial pearls are grown to be used in jewellery. The fantastical grotesquerie of Watson's (impressively) inventive itinerary of modified, objectified sex-slave women gives the novel a superficial richness; but, unlike the first two novels included here, its underlying story is really quite straightforward. It is male domination of women, the abyss of cruelty and abuse that women endure. It is a satire, of course, and for all its sexual explicitness as far from erotic as can be imagined. *Orgasmachine* takes one of the most intimate and universal modes of communication between two people—sex—and extrapolates a dystopia from it. Sex ought to be, and indeed *can* be, an infinitely supple shared language in which an infinite number of mutual

expressions can be joyfully spoken and joyfully comprehended. There is a great deal more to say of Watson's subsequent dozens of novels, more than can be accommodated here; but in all of them his sense of the grotesque beauty of human possibility is parsed through a sometimes remorseless innovatory power.

EUROPEAN SF OF THE 1960S AND 1970S

Europe continued to produce a torrent of superb SF through this period, although the observation must be made that, as SF became increasingly commercialised, and especially as it became implicated in the mostly American idioms of mass-cultural TV and film, the relative impact made by non-anglophone writers diminished. As US culture assumed an unprecedented global infiltration, a great deal of good SF became swamped in the anglophone chauvinism in which the English-speaker felt less and less pressure to learn another language, and deemed to notice literature only if translated into English.

After dominating the genre for much of the 19th century, French literary SF was entering a silver age—although French visual SF and, in particular, the *bandes dessinées* (comics both serialised and in album form) were coming into glorious flowering with the creation of adult, often controversial, texts such as Jean-Claude Forest's erotic 'Alice in Wonderland' variant *Barbarella* (1962), the publication of the vastly influential anthology title *Métal Hurlant* (from 1975), and the rise of creators such as Jean Giraud (pen-name Moebius) and Phillippe Druillet, who used comic book art as a launch pad for archetypal explorations of the collective unconscious, introspective mysticism and existentialist, often surreally and psychedelically inclined, philosophising. The reasons for this shift of emphasis—I hesitate to call it a decline—are not clear. Jacques Goimard, a French journalist, wrote in 1970 that '*la science-fiction française ne manque donc pas d'inspiration. Sa véritable maladie est d'origine économique* [French SF doesn't lack inspiration; her real problem is economic in origin]' [Gattégno, 32]. For whatever reasons, clearly related to the radical social and cultural changes that took place in postwar France, written SF became less noteworthy. Although René Barjavel (discussed above) continued writing until his death in 1985, his later fiction is much less focussed and powerful than his earlier works. But even a book like Belgian Jacques Sternberg's *Toi, ma nuit* (*You, my night* 1956), which wittily treats the coming of a new age of sexual indulgence, could find no audience outside France. Some French books did make a larger impact. Perhaps the most famous work of postwar French SF is *La planète des singes* (*The Planet of Monkeys*, 1963) by Pierre Boulle, although that fame is more due to the successful 1968 Hollywood film, rather than the mordantly witty *conte philosophique* form of the original novella. Algerian novelist Robert Merle is better known for his mainstream fiction, but he produced in *Un animal doué de raison* (*An animal gifted with intelligence* 1967) and *Malevil* (1972) two powerful and influential books; the first dealing with a group of dolphins taught to speak with humans, the second with the aftermath of nuclear war and the precarious process of rebuilding. Once again,

extracontinental fame for these books owed more to film versions than the novels themselves—the films were, respectively, *The Day of the Dolphin* (Mike Nichols 1973) and *Malevil* (Christian de Chalonge 1981).

In Germany, on the other hand, the 1960s saw a renaissance in popular SF. In large part this was due to the enormous, worldwide success of the Perry Rhodan series. The brainchild of Walter Ernsting and Karl-Herbert Scheer, the first Perry Rhodan novel appeared in 1961; subsequent novels in the sequence have appeared regularly (on occasion as regularly as once a week, produced by a fast-working team of authors). Rhodan is an American astronaut who discovers a crashed alien spacecraft on the Moon, and becomes involved in a fantastically burgeoning series of adventures that lead to him assuming the role of Peace Lord of the Galaxy. American Forrest J Ackerman edited a series of English-language translations of the first 118 novels from 1969 to 1977, and a sizeable anglophone fan community grew up, to join the much larger German fanbase, with the usual trappings of fan culture: conventions, fan fiction, blueprints of the spacecraft, art, comic books, several spin-off series of books (*Atlan*) and magazines (*Dragon* and *The Planet Series*), and a low-budget Euro movie, *Perry Rhodan: SOS aus dem Weltall* (*SOS from Outer Space*; Primo Zeglio 1974). The American and British markets dried up in the late 1970s. Nevertheless, the series has run continuously in its native Germany since the first title appeared in 1961. More than 2200 novels have now appeared, some 80 million words, giving Perry Rhodan an unprecedented longevity as an SF presence.

Taking the whole series as a sort of megatext, an extraordinary extension of the concept of the *roman fleuve* to the idiom of pulp SF, presents us with an especially fascinating problematic of critical interpretation. Clearly, Perry Rhodan takes to unique extremes one of the most culturally persistent forms of SF, the pulp serial adventure, megatexts such as *Flash Gordon*, the *Star Trek* franchise, or the multi-part *Star Wars*. But none of these composite works has the sheer scale and complexity of Perry Rhodan. A similar, though much smaller, success has been enjoyed by the 150 novels in the *Orion* sequence (many by Hans Kneifel 1936–2012), which spin-off from a successful *Star-Trek*-like German TV series *Raumpatrouille: Die phantastischen Abenteuer des Raumschiffes Orion* (*Space patrol, the fantastic adventures of the spaceship Orion*, 1965).

Other European SF authors worked in a more self-consciously literary idiom. Austrian Herbert Franke published a series of very highly regarded novels, beginning with *Das Gedankennetz* (*The Thought-Net* 1961) and *Der Orchideenkäfig* (*The Orchid Cage* 1961), in which astronauts explore a mysterious planet. His earlier fiction tends to portray humans overborne by hostile or indifferent superior forces, but his later writing has been more interested in the possibilities of human supermen, often individuals whose super-potential is not immediately obvious; two notable examples are to be found in the short story collection *Zarathustra kehrt Zurück* (*Zarathustra returns* 1977) and the novel *Schule für Übermenschen* (*School for Supermen* 1980). Italian writer Italo Calvino is famous for his witty and carefully braided metatexts, stories that

reflect the process of storymaking and embody themselves. Many of these are fantastical, and a few are unmistakably SF; for instance the interlinked short stories of *Ti con zero* (*T at zero* 1967) and *Le cosmicomiche* (*The cosmicomics* 1968), in which an unimaginably old narrator called Qfwfq retells the story of the cosmos from a series of ingenious, comedic perspectives.

The greatest Continental writer of postwar SF is probably Polish writer Stanisław Lem, an uncompromisingly European writer who has nevertheless garnered an enormous international reputation. It has helped that he has been widely translated, and that two very highly regarded SF films (*Solaris*, Andrei Tarkovski 1971; *Solaris* Steven Soderbergh 2003) have been made out of his novel *Solaris* (1961). That novel, Lem's most famous, takes as its premise an oceanic planet that is not only conscious but moved to create simulacral humans that interact and unsettle the human occupants of an observing space station. As a meditation on the tendency of human consciousness to reduce alienness to variations of human sameness the book has rarely been bettered. But the true flavour of Lem's witty, intensely thoughtful, ingenious writing is very poorly captured by cinema. Peter Swirski comments that 'there can be no doubt about the centrality of philosophical and scientific thought in Lem's writings' and adds that 'it would take a polymath equal to Lem himself to engage critically his hypotheses and scenarios', which range over a staggering array of the human sciences and arts. Swirski thinks that this '*embarras de richesses* may partly explain why so few literary scholars to date have penetrated [his] conceptual frameworks in a systematic way' [Swirski, xi–xvi]. The linked short stories of *Opowieści o pilocie Pirxie* (*Tales of Pirx the Pilot* 1968) are fantastically imaginative and wide-ranging, whilst always connecting to a deeply considered meditation on the human condition. Similarly, the tales collected in *Cyberiada* (*The Cyberiad* 1965) constitute a robot-centred mock-epic, darkly funny and thought-provoking. Almost as if flaunting his heroically fertile imagination, Lem published a large number of reviews of imaginary books, a notion he took from Borges: *Doskonała próżnia* (*Perfect Vacuum* 1971) and *Wielkość urojona* (*Imaginary Magnitude* 1973) contain more ideas and perception than is found in the entire careers of most midranking Western SF authors. *Katar* (*Catarrh*, also known in English as *The Chain of Chance* 1977) reads like the synthesis and terminus point of all detective novels, tracing a baffling mystery through its myriad essential and accidental circumstances, back to a satisfying explanation that reinforces the contingency of human existence.

The Russian brothers Arkady Strugatski and Boris Strugatski, collaborated on a number of very interesting SF books. Their first major success was *Trudno być bogom* (*Hard to be God* 1964), in which human agents from a Communist Earth are working undercover on an alien world helping it develop past its medieval-level technology without falling into the ways of fascism. But being regarded as gods by the indigenous people corrupts them, although not in the obvious ways a lesser writer might have been drawn to. The novella *Piknik na obochodzie* (*Picnic by the roadside* 1977) is a brilliantly handled mood-piece, dealing with a mysterious Zone in Canada where aliens, it seems, have discarded

various artefacts. It was filmed by Russian director Andrei Tarkovski as *Stalker* (1979), which is either the most magisterially beautiful and profound, or else the most constipated and boring, film ever made. It is really hard to be sure either way.

JAPANESE SF

SF as European and American cultural production first spread to the rest of the world by the exportation of translated works. It was later, and in many parts of the world not until the 1960s and 1970s, that an authentically native version of the mode began to develop. Japan makes an interesting case study in this regard. It is a nation with a long and rich tradition of magical-fantastic fabulation that was, after 1945, occupied by the USA and which underwent a process of extremely rapid industrialisation that in turn inserted a 'Western' strain into the country's broader cultural aesthetic. This manifested, in part, in a burgeoning SF culture.

Hoshi Shin'ichi, perhaps Japan's most famous modern SF writer, has described the 1960s as 'the golden age of Japanese SF' [Matthew, 41]. The profound changes that reshaped Japanese society after the war, turning an old-fashioned feudal society into an industrial and consumer powerhouse, unleashed a potent complex of forces; and SF grew rapidly, as that genre best able to mediate and analyse the impact of rapid technological change. By the 1990s SF represented a major portion of Japanese popular culture. Shibano Takumi estimates that by the 1990s '400 Japanese original and 150 translated SF books are published each year' [Shibano, 640]. It was 1960 that saw the first appearance of *S.F. Magajin* (*SF Magazine*), publishing original Japanese SF; it is still published today. Hoshi Shin'ichi eventually published 1,000 stories, most of them SF. His story 'Bokko-chan' (1958) is a sharp and ingenious yarn in which a robot girl, programmed with only a basic level of response, becomes the unwitting agent of destruction for the various lonely men who come to the bar in which she works. It can be read as a satire upon the limited social roles permitted women in traditional Japan. Abé Kobo's *Daiyon Kanpyo-ki* (*Inter Ice-Age 4*, 1959) is a complex novel in which a supercomputer, programmed accurately to predict the future, exercises a baleful effect upon its programmer's life, dominating and then wrecking it. The computer is called MOSCOW II; Abé, a Communist, was expelled from the Japanese Communist Party in 1962. Komatsu Sakyo enjoyed considerable success with *Nippon Chinbotsu* (*Japan Sinks* 1971), a disaster novel in which the Japanese archipelago begins to slide into the ocean, and the entire population must be evacuated; over four million copies of this novel were sold. Komatsu's *Nippon Apatchi-zoku* (*The Japanese Apaches*, 1964) concerns a tribe of disenfranchised Japanese living on a fenced-in waste land who, by eating steel, become indomitable cyborgs, repelling assault and eventually being the only Japanese to survive a nuclear war.

CONCLUSION

New Wave proves, in the end, a rather unsatisfactory shorthand for what 'happened' to science fiction through the 1960s and 1970s. Certainly there was a self-conscious effort by many writers to make the mode of the novum new again, to re-novum the novum. There was a concerted attempt to write SF with more literary sophistication and more formal ambition, to give inner space as much attention as outer, and to integrate more thoroughly the marginalised—women, ethnic minorities, alternate modes of life and sexuality—as expressive of the central SF fascination with otherness. It is either an irony, or perhaps a simple index to the variety and diversity of the evolving genre, that a chapter such as the present drains into a delta of myriad specificities. What is the larger focus? Golden age authors continued publishing older-style SF throughout this period: Asimov's old-school *The Gods Themselves* (1972) won all sorts of awards; Pohl's *Man Plus* (1976) presents a cyborgised man in a detailed but wholly exteriorised fashion, and his very readable space thriller *Gateway* (1977) could have been published in exactly that form in the 1950s and won the 1978 Hugo, only partly on a wave of nostalgia for the good old days. By no means all SF fans were delighted with the experimental meddlings of new wave in 'their' genre.

As Helen Merrick points out, all this making new of the new had the counter-intuitive effect of leaving the genre staler than before, as many have argued:

The 1970s get short shrift in many critical accounts, its SF dismissed as 'confused, self-involved and stale' [Bruce Sterling] and depicted as a period of increasing insularity despite, or perhaps because of, the diversification of the genre into other forms. Some mourned the 'petering out' of the New Wave as it was 'absorbed into the system,' accompanied by noisy (if premature) announcements of departure from the genre by Ellison, Silverberg and Barry Malzberg. [Merrick, 107]

Merrick makes the telling point that what such critical narratives often occlude are 'the links between New Wave and the impact of the women's movement on SF' [Merrick, 108]. This she styles 'the "feminine" invasion', with a new and vigorously contested debate between 'hard SF', styled as masculine, and 'soft SF', styled as the mode's feminised form. The relative rigidity or pliability of SF implied by these (often used) descriptors seems to me a distraction. It may make more sense to see in the new wave a Le Guinian circularity, the genre revolving back upon itself to reconsider its original logic. One of the most discussed novels of the 1970s is *The Female Man* (1975) by Joanna Russ, a feminist utopia and polemical critique of men and masculinity given real spark by the directness and honesty of its anger. It is certainly not a soft novel. Not nominated for the Hugo, it makes an interesting comparison with the novel that won that year's Best Novel prize, Joe Haldeman's *The Forever War* (1975). Haldeman's is a fine novel, and highly regarded in genre circles, but it is hard in the sense of telling an unflinching war-story, and is an insistent

masculine work. The time dilation of interstellar space travel in Haldeman's universe means that war with the alien Taurans takes many centuries, and the protagonists' military training (hard), combat experience (very hard) and individual life elongated by the hard equations of Einsteinian physics, trope the alienation of the ordinary grunt. Haldeman drew on his personal experience of serving in Vietnam to render this, and it is compellingly done. The novel uses time dilation to complexify the simplicities of linear narration to emphasise the psychodynamic of alienation. Russ achieves similar effects, with a much wider emotional scope, by the simpler strategy of *formally* restructuring linearity. *The Female Man* braids together four main alternate realities: Joanna's World, similar to the 1970s North America in which Joanna Russ actually lived; Jeannine's World, an alt-historical Earth in which World War II never happened and the Great Depression never ended; the dystopian Jael's World, in which the battle of the sexes is literalised as actual gender war; and, most memorably, Whileaway, a far-future utopia in which all men had died from a gender-specific plague some 800 years previously, women carrying on the species via parthenogenesis, and everybody living a high-tech but low-impact, mostly rural, existence. Characters slip from world to world, and Russ is extraordinarily expressive of the way different social circumstances can take the same individual and remake her in radical ways. It is a masterpiece of science fiction and its circularity is evident in the way it wires its narrative in parallel rather than in sequence. In that simple, brilliant move Russ lays bare the crucial force of her newer wave.

The exhaustion some critics have detected in 1970s SF was no such thing. Hindsight, though, is hard to shake. Something was about to happen in the genre that would mark the reconfiguration of SF as a genuinely popular, and indeed globally dominant, form of art, and that something was not literary, experimental or pseudo-Modernist. It was linear, simplistic, colourful, old-school and above all visual. I'm talking about *Star Wars* (1977).

NOTES

1. This is the explanation offered by James Blish for the outpouring of religiously inflected SF in the late 1950s and 1960s (an outpouring to which, as we have seen, he contributed some of the most powerful and eloquent texts). Such writing was, he argued, 'a chiliastic crisis, of a magnitude we have not seen since the chiliastic panic of 999 AD' [quoted in Clute and Nicholls, 1001].
2. Thomas Disch, who has a low opinion of the book, comments mordantly: 'it was this element of communes featuring dorm-style promiscuity under the auspices of a bullying alpha male that especially endeared the book to the counterculture of the '60s, including Charlie Manson, who made *Stranger* required reading for his followers' [Disch, 234]. It can't be denied that the pitchy touch of Manson's endorsement has defiled Heinlein's novel (although the same cannot really be said of Manson's other enthusiasms—the Beatles' *White Album*, say). Then again, it may be more to the point to see Manson's own homicidal messianism as one more symptom—an unusually baleful one—of a broader cultural logic.

3. Abraham Kawa disagrees with my judgment here, and locates Ellison's greatest achievements in other modes of SF: 'He is greatly influenced by superhero comics, particularly their hyperbolic mode of writing as exemplified by Stan Lee ("Repent" is, in many ways, a superhero story), and even made occasional plot contributions to the genre, like the Hulk story "The Brute that Shouted Love at the Heart of the Atom!" (*Incredible Hulk* #140, 1971) in which the shrunken green behemoth becomes the king of a subatomic realm, and the grim Batman tale "Night of the Reaper" (*Batman* #237, 1972). This willingness to "play" with other creators' characters also served him in good stead in the screenplay for "The City At the Edge of Forever" (1967), one of the most highly regarded episodes of the original *Star Trek* series' [Kawa, private correspondence]. It is worth adding that Ellison's work is very highly esteemed by a great many people in the world of SF, and my animadversion is a minority position.
4. Critic Sarah Lefanu quotes Silverberg's dotty certainty: 'it has been suggested that Tiptree is female, a theory that I find absurd, for there is to me something ineluctably masculine about Tiptree's writing ... lean, muscular, supple, Hemmingwayesque', and then quotes his more elegant retraction ('she fooled me beautifully, along with everyone else, and called into question the entire notion of what is "masculine" or "feminine" in fiction'). But as Lefanu herself points out 'there is something dangerous about seeing masculinity and femininity in such essentialist terms' [Lefanu, pp. 122–23].

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SF Screen Media, 1960–2000: Hollywood Cinema and TV

Two major things happen to SF in the last decades of the 20th century. The more important of the two is that it undergoes a transformation, becoming increasingly a genre dominated by visual media and especially by what we might call *visual spectacularism*, a special sub-genre of cinema that is predicated upon scale and grandeur, special effects, the creation of visually impressive alternate worlds, the realisation of events and beings liable to amaze. The second thing, linked to this, is that SF becomes less markedly a literature of ideas and becomes increasingly dominated by an imagistic aesthetic. This involves both more conventional poetic or literary images and more strikingly potent *visual* imagery that penetrates culture more generally (a bone, thrown into the sky by a prehistoric ape, cuts to a spaceship in orbit ...) It is in the nature of images that they cannot be parsed, explicated and rationalised in the way ideas can—for example, as excerpted from a notional literature of ideas. Accordingly there is something oblique about the workings of the best SF of the later century, something allusive and affective that can be difficult to pin down exactly.

Linking, as I do here, the rise to prominence of visual SF and the subtle effectiveness of the poetic image may strike some as an odd move in this context. It is more usual to note the rise of SF cinema and TV with regret, as a dilution of the effectiveness and sophistication of the genre. But this, I think, is a mistake. It is true that a new chief mode of SF comes into being, especially after 1977, a form of text known colloquially as the Hollywood blockbuster. Hollywood has now taken on the negative connotations of popular cinematic art, and the shorthand is used in that style here. For many Hollywood denotes lowest-denominator commercialism, but whilst there have been many low-quality, exploitative or reactionary films produced under this cultural logic, there have also been many masterpieces. Moreover, the inherent populism of this idiom has meant that such works achieve a much deeper cultural penetration than was the case with novels or poems.

I am here working from an assumption that human culture is deeply invested in two modes of art in particular: story (which is to say, narrative plus characters); and lyric (which is to say, moments of aesthetic intensity that stir and move us, art that captures ‘epiphanies’ that make the hairs on the backs on our necks stand up, and so on). What I mean by this is that almost all human beings crave stories, and most crave intensities: finding the former in gossip, newspapers, novels, biographies, histories, ideologies and many other forms; and finding the latter not only in what Wordsworth calls ‘spots of time’ evoked by art or literature, but also and more pervasively in religious experience, in sex and sexual art, and in various other ways.

For much of the last 300 years the dominant mode of story in Western culture has been the novel, and the dominant mode of lyric has been poetry. This is, I think, no longer the case. Although there are millions of people around the world today who read novels with great pleasure, the fact is that most of the global population (even most novel readers) access the stories they need primarily through visual media, particularly cinema and TV. I think something similar has happened to the lyric. The audience for poetry has dwindled startlingly in the last hundred years, but billions of people now find their epiphanic moments of intensity in pop music, and perhaps in gaming.¹ This is a rather crude and deliberately overstated generalisation, but I think it stands as a general cultural backdrop to the rise to prominence of visual media in the history of SF.

The visual has a long pedigree, of course. In previous chapters we have looked at works such as Robida’s picture plus text confections, and the pulp magazine owed much of its effectiveness to the strong visual component. Professional SF artists, many of them highly talented, became increasingly prevalent as the century progressed. Technology of colour reproduction enabled mass advertising, full-colour magazines and newspapers, which, with the eventual ubiquity of TV and cinema, has resulted in a supersaturation of the visual in culture as a whole. This is most true in the developed world, but is true to a degree across most of the planet. Indeed, it is the case today that there are many texts in which quite extraordinary visual sophistication, and indeed beauty, are married to startlingly primitive characterisation, narrative and dialogue—let George Lucas’ *Star Wars: The Phantom Menace* (1999) stand as an emblematic representation of what I am talking about here. In such a culture, the critic who spends his or her energies merely denigrating the text for its insufficiencies (something often very easy to do) is articulating, I think, the less interesting response. The critic’s job is rather to explain the extent to which the greatness of the key texts can be explained with reference to its visual potencies. To put this another way, the requirement is for an account of the development of SF cinema that, rather than seeing special effects as mere ignorable decoration, sees them as core to the text; a sense of SF cinema as self-reflexively aware of its own visual and technological idiom, and all the more powerful for that.

EARLY 1960s SF CINEMA

Here is an example of what I am talking about. One of the main successes of George Pal's *The Time Machine* (1960) lies in the use of stop-motion photography to convey the rapid passage of time from the point of view of the time traveller. Indeed, the effectiveness of these scenes render this colourful film somewhat lopsided, formally speaking. The initial scenes, set as the century turns from 1899 to 1900, see the time traveller (Rod Taylor) telling his friends about his invention of a time machine amongst a nicely realised late Victorian clutter. The film then moves into a brilliant series of vignettes in which time travel is rendered variously with the sun shooting across the sky, with a witty sequence in which the hems of dresses in the shop across the road rise and fall with the annual fashions, and with stop-offs at significant points of future history—including the nuclear bombardment of London in the 1960s. Indeed, so powerfully rendered are these special effects scenes that they become much more than a mere transition to the far-future of Wells' novella, instead they dominate the whole. When he arrives amongst the Morlocks and Eloi there is no time for the complex development and class-satire of Wells' original. Taylor's character quickly surmises the nature of the future world, leads the Eloi to freedom against the monstrous Morlock oppressors, and returns to London only to collect books for the continuing job of re-civilisation. Wells' hyperevolutionary pessimism is wholly missing, but in a way this doesn't matter, for the sequence amongst the Eloi is the least important in the film. The images that stay with the viewer are of the eons-long accelerated perspective—both the sense of power this grants the viewer (swallowed by lava, Taylor's time traveller merely fast-forwards his device until the rock is picked away by natural erosion and he emerges into a sunshiny pastoral world) and also the horror (Taylor accelerates into the future after killing a Morlock, and the camera revoltingly but strikingly compresses the decomposition of the corpse into a few seconds). In other words *The Time Machine* stands at the threshold of a new kind of cinema; a cinema predicated upon the special effects of the camera that reflect upon the medium itself.

It is not that special effects were unknown in earlier cinema, of course. Quite the reverse. *Metropolis* (1927), for instance, incorporates some very impressive special effects, but most of these—the large purpose-built sets, big cast, scaling of models to interact with live action performance—are essentially the special effects of the Grand Theatre of the 19th century. They create a sense of spectacle, as did D W Griffith's transhistorical epic *Intolerance* (1916), also via the creation of huge theatrical sets, but they do not create a sense of specifically *cinematic* spectacle. SF, always enamoured of technology, finds in those new technologies of the cinema developed in the last half of the 20th century not only a means of realising its vision, but also of embodying its very aesthetic.

Special effects (less sophisticated but still used to striking effect) are also the saving grace of *X: The Man with the X-Ray Eyes* (1963), a low-budget feature by Roger Corman. After a conventional start, in which a scientist experimenting on himself develops X-Ray vision, *X* goes on to develop a weird and rather

compelling quality of existential angst, as its protagonist sees through to the essential hollowness of the universe and goes mad. A similar pessimism, powerful though a little adolescent, also inflects Joseph Losey's B-movie *The Damned* (1961), about a secret British government programme to irradiate children to render them invulnerable to atomic fallout. But, speaking generally, the cultural mood of the early 1960s in the USA and UK did not affect SF cinema in the same liberating way it affected written new wave SF. Presumably this is because the much higher costs of producing a film-text mean that cultural production is more implicated in corporate and investment interests, and there is less space for the explicitly counter-cultural. Both Corman and Losey were working outside the system of the big studios. The more mainstream SF films of the period tended to reflect the political concerns of the Cold War, the Cuban Missile Crisis (1963), and the on-going fear of nuclear war. Films such as the sombre, low-key *On the Beach* (1959, Stanley Kramer)—based on Nevil Shute's 1957 novel and set in Australia, the last place left undestroyed by a nuclear war, although the cloud of radioactive dust is bringing an inevitable annihilation with it—and *Fail Safe* (Sidney Lumet 1964) presented the destruction of the world not in terms of spectacular explosions but rather as a miserabilist, talky postmortem of humanity's failings. Non-US films set in post-nuclear environments were often less preachy. In the ambitious Japanese *Dai-sanji Sekai Taisen: Yonju-ichi Jikan No Kyofu* (*Third World War: forty-one hours of horror*, Shigeaki Hidaka, 1960) the USA accidentally drops an atom bomb on Korea, leading to a war in which most of the world is destroyed. That the atomic apocalypse many in the 1960s expected did not materialise (or has not yet materialised) does not give us the right to look condescendingly upon the very real fear it generated.

Nevertheless it is Stanley Kubrick's black comedy *Dr Strangelove or: How I Learned to Stop Worrying and Love the Bomb* (1964) that is the only example of this sub-genre not to have faded into a period piece with the passage of time. This still-hilarious film tells the story of a lunatic American general, obsessed with his own cleanliness and 'precious bodily fluids', who launches an unauthorised nuclear strike against Russia. The frantic attempts of the Western authorities to countermand this order are related partly through a near documentary visual style of urgent cutting and handheld camera work, and partly through a more hypertrophic and caricatured representation of the US War Room. At one point rival army officers fall to blows, prompting the President (played by Peter Sellers) to reprimand them: 'gentlemen! You can't fight in here—this is the War Room!' The title character, also played by Sellers, is an ex-Nazi rocket scientist, confined to a wheelchair and with a false arm, presumably intended as a broad-brush satire on the high public profile of Wernher von Braun, then director of NASA's Marshall Space Flight Centre and overseeing the actual Apollo programme. But Sellers' Strangelove is a long way from any actual human nuance. His insane delight at the prospect of the coming disaster, his ridiculous cod-German accent (Sellers manages more comic business with the single mispronunciation 'compiüder' for 'computer' than can easily be believed) and the fact that his

prosthetic arm seems to have a life of its own, flipping up into a Heil Hitler salute beyond the control of its master, all contribute to a hilariously burlesque mood, which is all the more powerful for being offset by those sections in the film shot in quasi-documentary manner. The film was very successful.

Another marginally SF film from the same period, which also relies on caricature, hypertrophic sets and props, and a certain black humour, was the first James Bond movie, *Dr No* (1962, Terence Young). This film loses out to *Strangelove* in positioning its supervillain—who also has mechanical hands and a maniacal desire to see the world descend into apocalypse—*outside* the Western establishment rather than, as with, Kubrick's masterwork, working on the inside. But it proved the first of a desperately popular series charting the repetitive adventures of super-spy Bond, an action hero in the finest SF tradition who uses advanced and occasionally space-travelling technology as a means of augmenting his own super-competent physical strength and will.

Nonetheless, the films from the 1960s that went on to have the biggest impact on SF cinema, and cinema more generally, used the SF mode as a means of working formally through the possibilities of the new grammar and idiom of cinema itself. One example is the half-hour, black and white French film *La Jetée* (, 1962, Chris Marker), regarded by many, the present author included, as one of the best SF films made. Set after a nuclear holocaust in a Paris in which the law of cause and effect is breaking down, this subtle and suggestive time-travel drama in fact externalises the very logic of cinematic montage. Almost all the visual text is made up of a succession of photographic images, held on the screen for varying lengths of time. In an attempt to undo the damage of the nuclear war, scientists are attempting to send subjects backwards and forwards through time. The main subject is chosen because of his peculiar attachment to a particular photograph, of the face of a woman. The effect is to concentrate the viewer on the power of the image and on the eloquence that can be achieved by the straightforward juxtaposing of images. As it ends, tragically, motion blossoms into the static succession of still photos to very moving effect. The pared-down-ness of *La Jetée* is part of its extraordinary effect, but the way it compels the viewer to reflect not only on the story being told but also on the medium used to convey it, makes it distinctly and brilliantly SF. Jean-Luc Godard's oblique SF-policier *Alphaville* (1965) is preferred by some, although it seems obfuscatory compared to the luminously still complexities of *La Jetée*. When American director Terry Gilliam (a very different kind of genius) remade Marker's film in 1996 as *Twelve Monkeys* the replacement of the original's cool stillness with Gilliam's trademark burly energy and hyperactivity eroded the emotional affect, although it did produce an interestingly dislocated SF text. In retrospect, the significance of *La Jetée* lies in the ways it anticipates the aesthetic and, to some extent, mood of the first undeniable masterpiece of SF cinema, Kubrick's *2001: A Space Odyssey* (1968).

Mid-1960s SF produced fewer great films. On the one hand there were a number of 'pulp' SF films. For instance, in the Japanese *Matango* (1963 Inishiro Honda; released in the USA as *Fungus of Terror*) shipwrecked survivors are obliged

to subsist on a strange mushroom. One by one they turn *into* mushrooms. The only survivor appears to get back to civilisation intact only to discover mushroom growths sprouting on his face. It's a film that rescues a silly concept with its sheer brio. On the other hand were the more art-house films. *Fahrenheit 451* (1966) is, alas, one of François Truffaut's least interesting films. Truffaut, a *nouvelle vague* director with a spectacular gift for capturing the rhythms and textures of ordinary life, stumbled a little over Ray Bradbury's classic novel of a bibliophobic future world. Bradbury's almost evanescent subtlety of effect is transferred into a too-obvious anti-authoritarian satire. Then again there were films that straddled the art-house/pulp divide. *Barbarella* (Roger Vadim 1967) was an Italian production, although it starred American actress Jane Fonda in the title role. A campily erotic, far-future romp this film has retained a certain cult appeal (in the 1980s the high-profile pop group Duran Duran took their name from one of its characters), but in most respects it has dated very poorly. The sex seems fussily peek-a-boo and the SF plotline risible. An erotic SF movie ought, one might think, to have more of the courage of its sexual convictions than this.

2001: A SPACE ODYSSEY

Kubrick's monumental film was several years in the making, finally released in 1968. Kubrick had worked closely with Arthur C Clarke, expanding his short story 'The Sentinel' into something more transcendent and mystical. The film is divided into four unequal sections. The first, set in Africa at 'the dawn of time', wordlessly relates the adventures of a group of pre-human hominids. A strange black monolith, something like a colossal black tombstone, appears amongst them as they sleep, apparently upgrading their intellects, such that after its appearance they become tool users. The transition from this prelude to the main body of the film is effected via the most famous jump cut in the whole of cinema. A hominid, delighted at having killed a rival by using an animal's jaw-bone as a weapon, hurls it into the blue African sky. Kubrick's camera follows the bone up to its apogee, and as it starts to fall cuts to a 21st century spaceship tumbling through outer space in orbit around the world. The implication (that the spaceship, though considerably more complex, is simply another tool, like the bone) is gracefully alluded to rather than preachily insisted upon; and, indeed, the effect of the transition is less ratiocinative, and more poetic—strangely affective, uplifting and obscurely beautiful. Indeed, by far the most important thing to note about *2001* is simply how beautiful a visual artefact it is.

The second sequence, set in the movie's titular year, sees one Dr Floyd travelling to a lunar base and out onto the lunar surface, where another example of the monolith has been discovered. But the conceptual mystery of the monolith is less compelling than the slow, fluid beauty of Kubrick's *mise en scène*, the drawn-out sequence of space travel harmonised by a Strauss waltz soundtrack. The monolith sends a signal in the direction of Jupiter, and the third (longest) section of the film concerns the events of the spaceship *Discovery* travelling out to Jupiter to investigate. *Discovery*'s crew are all in hibernation, with the

exception of Bowman and Poole, and the sinisterly soft-spoken computer HAL. The main event of the movie is HAL's encroaching insanity; the computer murders Poole, and nearly succeeds in killing Bowman, although the latter is able to enter the machine's central core and shut it down. Once again, and exciting though these actions are, it is the slow, graceful stillness of Kubrick's direction that is the most effective element. *Discovery* is a fully-realised environment and Kubrick the first director to convey that actual space-travel is (relative to the enormous distances that must be covered) achingly slow, that it simply takes a very long time. As Hollywood in the 1960s and 1970s became more and more fascinated with speed for its own sake (showcased in the exhilarating acceleration of movies like *Grand-Prix*, John Frankenheimer 1966; *Bullitt*, Peter Yates 1968; and *The French Connection*, William Friedkin, 1971) this strikes a gloriously contemplative, melancholic note. Mind you, not all critics have been enamoured of this aspect of the movie. According to Vivian Sobchack, films such as *Destination Moon* (1950), *When Worlds Collide* (1951) and *Forbidden Planet* (1956) portray their spaceships as 'breathhtakingly beautiful' and 'palatial'. *2001*, on the other hand, 'gives us in "Discovery" a mechanism which barely tolerates and finally rejects human existence', and a sense of 'entrapment and confinement' also present in *Marooned* (John Sturges 1969) and *Silent Running* (1972) [Sobchack, 5–6]. This may strike many as a strange judgement, not least because Kubrick's emphasis throughout is very much on the 'breathhtakingly beautiful'. But more importantly, it is surely the case that the limitations of the *Discovery* are the limitations of a hermitage. A meditative quality dominates *2001* as a film, a potent realisation of almost monk-like qualities of solitude.

The film's final section, though brief and functionally a coda to the whole, tends to dominate analysis, as if it provides some sort of key for comprehending the 'mystery' of *2001*. Bowman, now alone, finds a massive version of the alien monolith in orbit around Jupiter. This opens as a sort of gateway or portal and Bowman is taken down an interstellar corridor composed purely of trippy, multicoloured images. At the end of this psychedelic transcendence he finds himself in a oddly neon-lit Louis Quinze suite of rooms, where—in, once again, a beautifully elongated and poised set of shots—he grows old, before being reborn as a 'star child', a luminous and apparently enormous fetus in orbit around the Earth. But although many at the time, and since, have attempted to excavate a significantly meaningful if oblique message from the film by way of this conclusion, in fact it is a perfectly straightforward version of a longstanding SF theme—the transcendence of humanity, our uplift with the help of aliens into a higher form of being. Indeed, this is one of the core themes of Golden Age SF, and as such the reductive moral of the film is rather backward looking. The genuinely new thing that *2001* brought to SF was not in its content, but in its *form*; and in particular in the way it forges a specifically space-age visual lexicon, deployed by Kubrick as a powerfully allusive visual poetry. Some people find *2001* a rather chilly, unlikeable film and some students (with whom I have had the pleasure, over the years, of discussing it) consider it overlong, slow and—devastating word—boring. These sorts of reactions are understandable.

The characters in the film are all rather distant, passionless, almost machinic; the ‘moral’ of the film—should you wish to read the film in that reductive manner—is one of ultimate human passivity with the whole of human history revealed as nothing but a sort of mental computer virus inserted by off-stage aliens via the monoliths. We can take credit for none of it. But to read the film not as a disquisition on the nature of humanity, and certainly not as manifesto, but rather as a poem unlocks its giant elegance. It approaches what Wallace Stevens famously called ‘the Supreme Fiction’—Stevens, as poet, is also sometimes accused of being chilly, a little inhuman, in his work. The three commandments embodied in the poem ‘Notes Toward a Supreme Fiction’ (1947) (‘it must be abstract’, ‘it must change’, ‘it must give pleasure’) are behind the ‘vivid transparency’ and ‘celestial ennui’ of Kubrick’s masterwork [Stevens, 329–30].

Posterity, so far as one can judge these things, has endorsed the sense that existed at the time that Kubrick’s movie brought new seriousness and aesthetic respectability to the mode of visual SF. *2001* may be his greatest work, and he was no slouch when it came to directing great films. Istvan Csicsery-Ronay reads it in terms of the Kantian sublime, but only to point up the ‘conventionality, symmetry, geometry, solitude and emptiness’ of the work’s vision. ‘2001,’ he suggests, ‘is the visually sublime expression of a spiritually exhausted sensibility for which all evolutionary progress is technical. It is deeply ironic about the absence of the supersensible connection between the universe and the human mind’ [Csicsery-Ronay, 167]. This strikes me as a misprision. Evolutionary progress is, after all, a dubiously tendentious concept, and the film’s irony—which I agree, is crucial to the way the text works—itself approaches a kind of sublimity, in part because it is the manifestation of that metaphorical passage from the known into the unknown that defines science fiction itself. As with the Homeric epic from which it takes its title, *2001: A Space Odyssey* is a poem of nostos, as circular in structure as the endless looping run Bowman makes inside the Discovery’s main cabin. The space baby with which the film ends has returned home, and with Strauss’ upstepping Zarathustran theme reinforcing the point musically, we are invited to take ‘it’ as an *übermensch*. Bowman’s journey has manifested the recirculation characteristic of new wave SF. Has ‘it’ returned as a saviour? Have the human crew, all of whom (Bowman included) die in the course of their *via sacra*, atoned, and therefore returned to life in this new form? By not spelling out the specifics, Kubrick is only more expressive of transcendental possibility.

TV SF: *STAR TREK* AND *DOCTOR WHO*

The origins of televisual SF can be traced back to the late 1940s and early 1950s with shows such as *Captain Video and His Video Rangers* (1949–1955) and *Tom Corbett, Space Cadet* (1950–5). If, as critic Mark Bould perceptively notes, ‘the production values of these shows now look extraordinarily amateurish, it is indicative of the extent to which the very fact of TV no longer seems miraculous’ to us today [Bould, 88]. Often broadcast live, these shows frequently transferred the dramatic conventions of Western or crime genre shows into a

notional outer space with a heroic male protagonist fighting evil. Throughout the 1950s and into the 1960s umbrella formats such as *Science Fiction Theatre* (1955–57), or episodic unlinked serials such as the low-key, contemplative *The Twilight Zone* (1959–64) and the more outré and surreal *The Outer Limits* (1963–5) raised production values and narrative expectations.

Many of these early TV serials have vanished from the collective radar of SF fandom (for instance, *The Man and the Challenge*, 1959–60 and *Men into Space*, 1959–60), sometimes because tapes of episodes have been wiped. But many of the shows retain dedicated, if specialist, followings even today. On American screens the animated series *The Jetsons* (1962–3) played the strangeness of a spacefaring family against the conventions of American suburban family life to comic effect, sometimes fairly amusingly. *Voyage to the Bottom of the Sea* (1964–8), an all-American underwater adventure series set aboard a futuristic submarine, though energetic, did not live up to the Vernean pretensions of its title. The concept behind *Lost in Space* (1965–8) was a futuristic space-marooned *Swiss Family Robinson*, and accordingly the minutiae of family interaction overwhelmed the rather campy SF elements. *The Time Tunnel* (1966–7) tossed its hapless protagonists from one memorable historical event to another via the titular device's ongoing malfunction. Wherever they ended up, from the Ancient World to World War II, the travellers were sure to encounter English-speaking historical celebrities.

British TV SF has been a lesser phenomenon, UK TV being a proportionately smaller business than US TV. Nigel Kneale, the writer-creator of the quintessentially English scientist Quatermass, put him in peril from alien invasion and buried monstrosities in three successful multi-part dramas, *The Quatermass Experiment* (1953), *Quatermass II* (1955) and *Quatermass and the Pit* (1958–9); the character was resurrected, although with less success, in *Quatermass* (1979). In all cases the show connected with the taproot of SF itself, its various storylines all riffing (to quote Peter Nicholls) on 'Kneale's obsessive 30-year repetition of the science-meets-superstition theme' [Clute and Nicholls, 983]. Kneale was also the writer of the one-off drama *The Year of the Sex Olympics* (1968), a slightly over-boiled but still intriguing dramatisation of a future world in which the bulk of humanity lives only through TV, even down to their sex lives. Gerry Anderson and Sylvia Anderson were behind a number of very successful puppet-based shows aimed predominantly at children, amongst them the spaceship-centred *Fireball XL-5* (1962–3), the underwater *Stingray* (1964–5) and the galumphing *Thunderbirds* (1965–6), which concerned a global rescue and emergency service run, apparently not-for-profit, by an eccentric billionaire. *Thunderbirds*, with its boy-friendly rock-ets, spacestation, giant cargo-planes and submarines, was the most successful of Anderson's shows but, arguably, two later Anderson shows surpassed it in many ways. *Joe 90* (1968–9) was based on the intriguing premise of a youngster into whom could be downloaded the knowledge and skills of a variety of adults. *Captain Scarlet* (1967–8) pitted the colour-coordinated cadre of Earth-protection agents against the threat of a malevolent, disembodied

Martian threat known only as ‘the Mysterons’. The slightly arbitrary premise of the show concerned the title character, ‘a man whom fate has made indestructible’ (the theme song still reverberates inside my head, thirty years later: ‘*In-de-struc-tible!* Captain Scarlet!’), which perhaps gives Earth a rather unfair advantage in their interplanetary conflict. No matter how many times the Mysterons killed off Scarlet he always resurrected. But the vivid, beyond-Bond adventures of these stringless puppets captured something of the kaleidoscopic energy of the 1960s, and still plays well today.

But the most important feature of 1960s TV SF was the development of the two most influential TV serials in science fiction, shows that would demonstrate powers of endurance far greater than their original framers could have conceived: the American show *Star Trek* (whose original incarnation ran from 1966 to 1969); and the British serial *Doctor Who* (1963–1989, 2005–present). The extraordinary and continuing success of these two franchises says important things not only about the increasing dominance of TV as a cultural medium but also about the broader development of SF itself. As the century moved towards its conclusion, TV increasingly became the world’s major narrative mode, enjoyed by billions of human beings nightly, something that cannot be said of any other mode of art. As for the broader development I mean two things: first, to reiterate what I have already argued, this is symptomatic of an increasingly visual bias of the genre; second, I am also making an argument about the changes in the textual focus of SF. To some extent it is the TV serial—a collocation of individual texts subordinated to a premise or particular imaginative identity—that becomes the template for all SF textual production. Instead of producing singular, stand-alone texts, SF writers and creators increasingly produce megatexts, interlinked sequences of texts, often spanning several media. As was noted earlier, a single concept and single novel, like Frank Herbert’s *Dune* (1965) can become, by the century’s end, a dozen novels, a cinema film, two TV serials, video games, comics, artwork by a dozen artists and so on. The same is true of most of the significant SF works of the last four decades of the century, and continues to be the case today—the only difference is that, instead of accreting these multiple textual additions, SF works are planned in advance as megatexts. So, for instance, *Star Wars* (1977) is now six interlinked movies, with three more in production, but it is also scores of tie-in novels set in the Star Wars universe, many comic books, half a dozen video games, magazines, websites, fan fiction, action figurines and many other forms of cultural production. The *Matrix* (1999) franchise was configured as a trilogy of cinema live-action films, into which (to make the story-arc comprehensible) the true fan needed to add a compilation of six shorter animated films, *The Animatrix* and a video game *Enter the Matrix*, all set in the imaginary universe of the text. I discuss this development in the genre in greater detail below. The issue is relevant at this point insofar as it elucidates the ways these two TV serials grew into popular consciousness throughout the 1960s and into the 1970s.

Doctor Who is chronologically antecedent. The Doctor (he has, it seems, no other name) first appeared as a crotchety elderly man, played by William Hartnell, travelling through space and time with certain companions in a spacecraft shaped like a Police Telephone Box. This machine, called the TARDIS, is much larger on the inside than the outside; whilst most TARDISEs can metamorphose their exterior to blend-in with whatever environment it finds itself in, the Doctor's craft has lost this facility. We learn that the Doctor is a humanoid alien, one of a race called the Time Lords who, in some nebulously unspecified way, are supposed to 'police' the time-ways. Time Lords enjoy extended lifespans by virtue of regenerating their bodies, a device which allowed Hartnell to be replaced in the role by the physically dissimilar Patrick Troughton in 1966. Troughton's more impish doctor was followed by the silver-haired and foppish Jon Pertwee in 1970 (for much of Pertwee's time in the role, the Doctor was confined to Earth as a punishment). Tom Baker took over the role from 1974 to 1981, and remains for many the definitive Doctor, playing the role with an endearing eccentricity always edged with an indefinable sense of danger. The fact that Baker was the youngest and—to use a rather outmoded term—most virile of the actors to take the role also added an effective if buried sexual subtext to his relationships with his, often female and nubile, assistants. Whilst less relevant to the extensive audience of children watching, for the adult audience this added spice to a show that, in terms of plot, was becoming rather repetitive. After Baker's day the show ran into diminishing returns, with Peter Davison, Colin Baker and Sylvester McCoy and (after a hiatus) Paul McGann playing the rôle. The BBC lost faith in the show and cancelled it, but its large, international fanbase kept the franchise alive through tie-in novelisations and radio dramas, until the show was relaunched, to prodigious success. In its second incarnation two Englishmen (Christopher Ecclestone and Matt Smith) and two Scotsmen (David Tennant and Peter Capaldi) have embodied the role. Tennant played the Doctor with an English accent, connecting with a sense that he in some sense embodied a gentlemanly ethos, culturally anglo-specific. Capaldi's rich Scots voice handily unpicks the class and cultural assumptions of such a belief.

Practically speaking, the show's premise has allowed for an indefinitely extended series of adventures. Typically the Doctor and his companion(s) arrive in some location (a historically interesting period of Earth's history, an alien world, on board a spaceship), have a number of adventures, face down an adversary, and wrap everything up before departing. The Doctor's anti-heroics (he never wields a gun, preferring to outwit opponents; and the character is played in most of his incarnations with an almost caricature Englishness—polite, good-humoured, a little odd) are well balanced by a series of vivid villains. The first of these, the six-foot tall bollard-shaped Daleks, first appeared early in the show's career. These conscienceless, quasi-Nazi cyborgs, with their grating cries of 'exterminate! exterminate' are genuinely memorable, and have reappeared many times over the years, monopolising the role of the villain in the Doctor's two cinematic outings, *Doctor Who and the Daleks* (1965) and *Daleks: Invasion Earth 2150 AD* (1966).

Dr Who ran more or less continuously on British TV until the late 1980s, and was sold widely around the world. The quality of individual storylines was variable, and often dipped alarmingly low (budgets rarely matched the writer's vision; even when the writer's vision was not especially exciting), but the show gathered a very large and dedicated fanbase. John Tulloch in particular has written perceptively of the *Dr Who* fandom [see Tulloch and Jenkins]. What is interesting is the way the constraints of the show, its central character and its distinctive English mood, mix with the radical freedoms of the central premise (after all, adventure can be located anywhere in time and space) to enable a seemingly inexhaustible series of new texts to be generated. Nearly 200 spin-off or tie-in novels of *Dr Who* adventures have been published, together with a great quantity of unpublished fan-fiction (circulated amongst friends and at *Dr Who* conventions and now online); there are magazines, numerous websites, and other forms of cultural production. Apprehending this very significant SF megatext would, for the uninitiated, be the work of many years.

Star Trek was conceived with a similarly accommodating premise, and has resulted in an even more impressively large body of textual production, much of it by fans. The original show followed the travels of the *USS Enterprise*, a capacious starship from the Federation (a human dominated, interstellar commonwealth), captained by the charismatic if strenuous and sometimes over-earnest James T Kirk (William Shatner). The *Enterprise* was on what the title sequence voice-over called 'a five year mission, to seek out new life and new civilisations, to boldly go where no man has been before'. That notorious split-infinitive seems somehow to capture precisely the naïve energy and slightly clumsy charm of the original series. The ensemble cast was built around a triad of characters, Shatner's alpha-male Kirk and his two friends: the emotionless alien science officer Spock (Leonard Nimoy); and the over-emotional medical officer 'Bones' McCoy (DeForest Kelley). It was the developing interactions of these three characters, as much as the various SF premises and alien worlds, that won the series so devoted a following, particularly amongst female viewers. Indeed, some critics suggest that *Star Trek* is more responsible than any other SF text for the increase of female interest in the genre.

Star Trek ran for a meagre three series before being cancelled but, in an unprecedented move, concerted action by disgruntled fans put enough pressure on the TV studios to have the franchise resurrected. Initially this took the form of a rather cursory animated cartoon version, also called *Star Trek* (1973–4); but plans for a movie eventually bore fruit in *Star Trek: the Motion Picture* (Robert Wise, 1979)—a spectacularly dull and plodding work whose subtitle was perhaps a necessary reminder to audiences that they had not stumbled by mistake into an aggressively snailpaced piece of avant-garde anti-narrative. Nevertheless the film, though bad, made a great deal of money—a testament to the fierce loyalty of Trekkies, or Trekkers (as the fans were known). Much truer to the spirit of the original series was the lively space-melodrama of *Star Trek II: the Wrath of Khan* (Nicholas Meyer, 1982). Though rather daft in premise and plot, this film did give its viewers a series of exciting space battles, a ripsnorting villain in the

genetic superman Khan (played without restraint by Ricardo Montalbán), and an effective surprise ending in which Spock dies saving the *Enterprise*. The follow-up *Star Trek III: the Search for Spock* (Leonard Nimoy, 1984) resurrected Spock via an experimental ‘Genesis device’, and in doing so made manifest a latent resurrection theme that runs through much of the original series—in many original episodes many characters are killed only to be reborn. That there is a danger of critical pomposity in reading this as a secularisation of the Christian mythos should not deter us from recognising it as another manifestation of the buried logic of the genre as a whole. Subsequent movies were less interesting works, although they were sometimes entertaining—as in the played for laughs *Star Trek IV: the Voyage Home* (Leonard Nimoy 1986), and the played straight but inadvertently laughable *Star Trek V: the Final Frontier* (William Shatner, 1989). After two decades of desuetude, the Star Trek movie franchise was relaunched with *Star Trek* (2009) and *Star Trek: Into Darkness* (2013), both directed by J J Abrams, which together earned nearly \$1 billion box office, a testament to the continuing popular appeal of the franchise.

The campaign to reinstate the show on TV was one of the first to show the sort of leverage mass audience action can bring to bear. A sequel TV show, *Star Trek: the Next Generation* (1987–1994) began with a stilted first series, although its likeable cast meant that it was always watchable. Shakespearian actor Patrick Stewart brought gravitas to the role of Captain Picard, and the emotional triad of the original series was transferred onto his Shatnerian first office Riker (Jonathan Frakes), the emotionless android Data (Brent Spiner) and the passionate Klingon tactical officer Worf (Michael Dorn), complicated by various female characters, including an emotionally telepathic, ship’s counsellor Troi (Marina Sirtis), who in the later series works through a soap-operaish love triangle with Riker and Worf. Picard’s super-ego supercompetency floated serenely above all these interactions. Not until the third series, when the nicely sinister alien threat posed by the Borg turned Picard into the enemy, did the quality of episodes pick up. By the late 1980s *Star Trek: the Next Generation* was the world’s most-watched TV SF show. Paramount invested in several spin-off series, one set on a Federation spacestation, *Star Trek: Deep Space Nine* (1993–99), one on a female-captained spaceship lost far from home, *Star Trek: Voyager* (1995–2001), and another a prequel to the original series called simply *Enterprise* (2001–2005). Indeed, one of the show’s great successes has been its iconic spaceship, designed not following the pattern of a conventional rocketship shape, but instead as an ungainly white structure—a wide saucer from which several long cylinders spreadeagle backwards, as if Marcel Duchamp had, as a work of experimental sculpture, combined an anglepoise lamp with a discus. Not only was one of NASA’s prototype spaceshuttles named *Enterprise* in honour of the series’ popularity, but plans for commercial space flights have recently been announced in the near future above a craft also called *Enterprise*.

Perhaps more important than the burgeoning body of TV and cinema texts is the role *Star Trek* has played as the focal point for a vigorous, worldwide fanbase. Hundreds of novels have been published, some adapted from scripts

but most of them original fictions set in the Star Trek universe. Despite the fact that critics often dismiss (or simply ignore) the phenomenon of TV/Film tie-in novelisations, some of the *Star Trek* books are very considerable works of fiction. Writers as highly regarded as James Blish, Greg Bear and Joe Haldeman have written original fiction set in the Star Trek universe; and with the excellent *Spock's World* (1988), Diane Duane wrote perhaps the best SF novel of that year. Magazines, comics and graphic novels, several video games, a wealth of privately published or unpublished fan fiction and critical studies have created an enormous cultural resource. If it would take a newcomer years fully to apprehend the paratextual material associated with *Dr Who*, it would take the same individual a decade or more to apprehend the material associated with *Star Trek*. Even in the widespread 1980s and 1990s culture of the SF megatext, the detail into which fans of Trek have gone is unusual. One of the most popular alien peoples, the warrior Klingons, have featured prominently, especially in the later series. Fans have picked up on this, not only by dressing as Klingons at fan-conventions,² but also by developing an actual and, I am told, working Klingon language. Dictionaries and grammars of this invented tongue have been published, and books of the Bible and plays by Shakespeare translated into it. The amount of ingenuity and effort expended on this (some might say) pointless activity might be seen as an index of the creative possibilities *Star Trek* has opened up to a wide body of non-professional creative writers and artists.

FILM FROM *2001* TO *STAR WARS*

The financial success of certain SF films (particularly *2001*) and the continued audience appetite for TV SF persuaded producers that there was money to be made out of the genre. Although it resulted in many weak films and many flops, sometimes this faith proved justifiable. One hit, for instance, was *Planet of the Apes* (Franklin J Schaffner 1968), loosely adapted from French writer Pierre Boulle's *La planète des singes* (*The Planet of the Monkeys*, 1963). Astronaut Charlton Heston is stranded on what appears to be a distant planet where eloquent monkeys are the dominant life form and human beings are dumb beasts. Unluckily shot through the throat, Heston's character cannot communicate with his ape captors until late in the film when, to simian astonishment, he exhorts his captors to 'take your stinking paws off me you damn dirty ape!' The simplicity of this satiric inversion is well-played, although there is perhaps a certain incoherence in the conception (is this up-ending, in which intelligent monkeys maltreat mindless humans, an animal-rights satire on mankind's cruelty to the world's fauna? Is it more obliquely a satire on racial prejudice? Is it a satire on the callousness of the industrial-military complex from the point of view of inarticulate hippies?). The famous twist ending, in which Heston's character discovers the half-buried Statue of Liberty on a desolate coastline and realises that he is not on a distant planet but a far-future Earth, has had its impact diluted by its over-familiarity, although it retains its power as a visual icon. What is especially interesting about the film is the way it gener-

ated not only a whole series of successful sequels, but also a TV series (1974), nearly a dozen novels and some original fiction set in a Planet of the Apes universe. In *Beneath the Planet of the Apes* (Ted Post 1969) a new astronaut (James Franciscus) chances upon an atom-bomb worshipping cult underneath the ruins of New York, and finally detonates the device destroying the entire world—a twist ending that managed to match the original film’s in unexpectedness. The uncompromising pessimism and sheer oddness of this film are, if anything, even more powerful than the original movie. Undeterred by the fact that this film unambiguously destroyed the imaginary universe in which the franchise was based, further films followed. *Escape from the Planet of the Apes* (Don Taylor 1971) has three talking apes return to the 20th century via time travel, and manages some neat satirical points. *Conquest of the Planet of the Apes* (J Lee Thompson 1972) and *Battle for the Planet of the Apes* (J. Lee Thompson 1973) fill in the story between the third and first movies. By now the appeal of the films was broadly understood as an allegory of race relations—a hot topic in the USA in the late 1960s and early 1970s, and one hardly cooler today. Eric Greene argues that the films contain a ‘double allegory’, one which ‘codes white humans as white humans’ and ‘codes black humans as apes’; and another which ‘codes white gentile humans as orangutans, white Jews as chimpanzees, and African-Americans as gorillas’ [Greene, 55]. The series’ various meditations on racism and the undesirability of conflict as a means of resolving difference are therefore rather undercut. The premise in fact displaces one SF fantasy (a world in which black humans are the dominant power, along the lines of Heinlein’s *Farnham’s Freehold*) into another (a world in which simians are the dominant power), muddling both. It is hard to deny that, to quote Greene again, ‘the issues of racial conflict and racial oppression’ are ‘the central issues’ of the five *Ape* films; and that their success was in part a result of the way they ‘connect[ed] with the individual or collective experience of large numbers of the consuming public’ [Greene, 1, 8]. The relative failure of the 2001 remake *The Planet of the Apes* (Tim Burton), though partly due to its narrative and aesthetic incoherence, may also be explicable as a function of the lower register of cultural concern about racism thirty years on. But the franchise had enough momentum to find itself relaunched a second time, to greater critical respect and financial result. *Rise of the Planet of the Apes* (Rupert Wyatt 2011) used motion capture rather than prosthetics to render its simians, and despite its titular superfluity of ‘ofs’ it earned its backers half a billion dollars. Its sequel, *Dawn of the Planet of the Apes* (Matt Reeves 2014) did even better with a stirring tale of the possibility of human/ape friendship framed by human/ape war, set in a post-apocalyptic California in which almost all humans have been killed by a superbug. Its box-office approached three quarters of a billion dollars. The third movie in this rebooted sequence, *War of the Planet of the Apes* (Matt Reeves) is slated for a 2017 release. One thing clear from these new movies is that the valence of the franchise has shifted; no longer ‘about’ race, these texts are now ‘about’ environmental disaster and man’s responsibilities to the natural world.

It is hardly an insight to say of the SF cinema of the early 1970s that the broader cultural concerns of the decade fed through into the films; something true of course of all films, and which (given the wide range of cultural concerns) doesn't take us very far. By and large these were films infused with a very grim sensibility. Robert Wise's efficient thriller *The Andromeda Strain* (1971) imagines a rather hit and miss, but eventually successful, governmental-scientific response to a deadly plague from outer space. Douglas Trumbull's good-looking but pompous eco-drama, *Silent Running* (1972), is set aboard a spaceship containing the Earth's last greenery, plants not wanted by a flora-free post-nuclear-war planet (it is not explained how the homeworld oxygenates its atmosphere). The vaguely hippy protagonist (Bruce Dern) is a junior crewman-gardener on the spaceship. He disobeys his orders to destroy this cargo, and instead sends it into deep space as a sort of message in a bottle. Even though Dern can only achieve this by murdering his crewmates, this is an ending that does not avoid tweeness. Stanley Kubrick's follow-up to *2001* was the ultra-violent *A Clockwork Orange* (1971), stylised in a manner both stylish and enduring, the bestower upon popular culture of several enduring icons, from Alex's bowler-hatted, white jumpsuit and codpiece look, to the genuinely ghastly sequence in which Alex is re-educated via the Ludovico technique. By putting visuals to Anthony Burgess' vivid prose however, Kubrick apparently went too far. Alex's on-screen murders and rapes allegedly provoked copycat crimes in the real world, and Kubrick withdrew the film from British (although not Continental) cinemas during his own lifetime. It is true that, by jettisoning the book's moralising final chapter, and presenting Alex's violence as, more or less consequence-less, the movie achieves a dislocated and disturbing intensity; but it is hard to believe that so brilliantly weird a future vision in fact acted as a blueprint for Britain's own juvenile delinquents.

Andrei Tarkovski's version of Lem's *Solaris* (1972) was called in its day 'the Russian *2001*', a reflection less of substantive similarities between the two movies and more the fact that it struck Western audiences as so very slow and contemplative and oblique. In fact, by comparison with some other films by the glacial Tarkovski, it is full of incident, but several extended sequences suggest a deep sense of receptivity to alienness itself. Like the same director's *Stalker* (1979), this is a film nearly impenetrable for the casual viewer, but persistence rewards with sensibilities, insights and visual poetic compositions of quite extraordinary beauty. Though much peppier, and poppier, Michael Crichton's *Westworld* (1973) can do little with its interesting premise of a quasi-Disney-world staffed by robots who interact with the human holidaymakers to provide a hyper-real 'Western' (or 'Roman Empire') environment, except (when the robots inevitably malfunction) provide a couple of effective shock-moments. The ultra-white bleached out dystopia of *THX-1138* (1971) was George Lucas' first feature. Lucas was to become more famous for another SF film made a few years later, but in *THX-1138*, constrained by a small budget, he produced a very interesting visual artefact. The sight of white-suited bald actors moving through white corridors and white rooms, all slightly over-exposed, makes a much more sophisticated visual statement than the film does in terms of its derivative and ultimately sloppy humanist story.

Two films from this period managed what very few SF films have managed, a workable blend of genre and comedy. Woody Allen's *Sleeper* (1973) demonstrated, amongst other things, that the conventions of SF cinema were now so familiar that it was possible to score comic points off them with ease. John Carpenter's *Dark Star* (1974) is, despite its ultra-low budget, a more rounded piece of film-making, a satirical swipe at human, and more specifically American, insularity in the face of cosmic splendours. It is, often, very funny indeed, but its satire is more often eerie (as in the scenes where the crew hold conversations with the frozen remnants of their dead captain's consciousness) or even exhilarating (the sentient bomb that decides it is God and explodes becomes almost the nihilist hero of the piece) than pointed.

Other films seemed to be saying slightly incoherent things about Western fascination with sport and/or violence (as in the visceral rendering of the bone-crunching game of *Rollerball* in Norman Jewison's 1975 film) or the cult of youth. *Logan's Run* (Michael Anderson 1976), in which beautiful young people live idyllic sensual lives only to be exterminated before they get old and ugly, is a simplistic and even banal piece of filmmaking. Nevertheless its blend of beautiful actors and actresses in revealing costumes, and the continual threat of violence, touched some sort of chord—a spin-off TV series and several tie-in novels followed. Nicholas Roeg's *The Man Who Fell to Earth* (1976) flirts with pretentiousness but manages, just, to stay the right side of the line. It is helped in this regard by the casting of pop-star David Bowie as the alien protagonist. In 1976 Bowie was going through the weirdest phase of his often deeply weird life and he captures exactly the combination of oddity and charisma needed to keep the film on course. Bowie's mannered, slightly distant, Anglicised alien-ness colours the whole film. Roeg, another mannered, slightly distant Englishman, finds visual correlatives throughout for this mood.

Although there are aspects of *Tron* (Steven Lisberger, 1982) that seem quaintly dated nowadays, it has been, and in part remains, an enormously influential movie. The plot concerns a computer hacker who is transported inside a computer, where he is forced to battle against a tyrannical Master Control Program. It is not the story, though, but rather the 'clean', minimalist look of the movie (designed by the comic book artist Moebius), the gleaming red or blue neon lines against a black background, with human faces in pared-down torsos riding various simplified motorcycles, tanks and ships over an apparently endless grid, that is this film's greatest achievement. It established a visual grammar for the representation of cyberspace that informed much cyberpunk fiction. A remake, *Tron Legacy* (Joseph Kosinski, 2010), threw hundreds of millions of dollars at its effects, making them thereby much glossier and sophisticated, and by almost exactly the same proportion much less effective and memorable.

Looking back, though, it is hard to avoid the sense of a decade treading water, SF-cinematically speaking. A movie came along in 1977 that completely redefined not only what visual SF, but also SF more generally, was perceived as being about, and which remains today one of the most culturally prominent iterations of the genre.

STAR WARS

George Lucas' feisty, juvenile space opera *Star Wars* (1977) marked a radical change not only in SF cinema, but also in cinema *tout court*. Despite his Oscar-nominated pedigree as a director, few believed that there was any profit or merit in Lucas' pet idea for a high adventure yarn in the SF idiom. In the event however *Star Wars* became, in its day, the highest grossing film in cinema history. It cost \$11 million to make, with an additional \$4 million spent on prints, distribution and advertising. To date it has grossed \$926 million globally, a figure which is not adjusted for inflation (if that adjustment is made the film has earned nearly \$2.5 billion worldwide; and each of the six subsequent *Star Wars* films has grossed \$1 billion each, give or take, see the appendix at the end of this chapter for details). This was wealth generation on a scale unprecedented in cinema.

Star Wars changed everything. In the wake of its success film-makers flocked to replicate the winning formula, and a very large number of often high-budget (and sometimes highly successful) SF films and TV series were made throughout the 1980s and 1990s. Some of this success spilled back into the more traditional fields of written SF, with readerships increasing and spreading across a number of previously resistant demographics; but the fact of the matter today is that, speaking globally, very few people read SF, whereas very many people watch SF. This is the major change in the genre over the century.

For many the juggernaut of *Star Wars*' success is a wholly deplorable thing. Lucas' film is seen as responsible, sometimes single-handedly, for the dumbing-down of SF, or even of world, culture. It is indeed a puerile film in the sense that its primary audience was children, and accordingly it does not deal with a number of adult concerns—sexuality for instance is almost absent from the first film, and is treated very clumsily in the sequels. Those who deprecate *Star Wars* see it as reactionary escapism infected throughout by a juvenile sentimentality. It is often indicted by critics as the murderer of 'proper' SF, implicitly taken to be 'a literature of ideas'.³ It may be true that cinema is poor at communicating ideas; characters verbalising complex intellectual ideas makes for a turgid movie-going experience. What cinema is good at is image, action, narration and (to a certain extent) character. But cinema speaks to people on a scale and with a penetration no other art form can manage.

It doubtless overstates matters to say that the success of *Star Wars* rewired SF literally single-handedly, but it certainly cemented what was already a tidal change in the genre. From the late 1970s to the present day SF has metamorphosed from a primarily written literature of ideas, into a primarily visual idiom of poetic imagery and spectacle. For many critics of the genre (whose personal taste runs to the former) this is a consummation devoutly to be wished, but it is surely pointless to deprecate such cultural sea changes. SF is now the most popular form of art on the planet *because* it has colonised visual media; as of 2016, of the twenty top-grossing films of all time only three are not SF or fantasy. Graphic novels and comics, although published in most genres, are

overwhelmingly SF, fantasy and horror texts. Video games are released in a wider variety of genres (sports simulations, spy adventures and historically-based titles are all popular) but SF is nevertheless the biggest single idiom.

Can all this really be traced back to *Star Wars*? What was it about this particular text that meant it had such a huge impact on the development of the genre? To talk about the film in terms of its manifest content does little to answer this question, for the storyline, though engaging, is derivative and banal. Luke Skywalker (Mark Hamill) is a young man on a parochial desert planet on the edges of an oppressive quasi-fascist Galactic Empire. He meets the wise old magician Obi Wan Kenobi (Alec Guinness), one of the last of a Galactic order of knights with supernatural powers called the Jedi, who harness a ubiquitous and mystical Force. Through him, Luke becomes embroiled in a plot to free the beautiful Princess Leia (Carrie Fisher) from imprisonment on one of the Empire's Death Stars—a Moon-sized spaceship with enough firepower to destroy whole planets. The Princess is indeed freed, although in the process Kenobi dies fighting the sinister black-clad and black-masked Darth Vader, sidekick of the wicked Emperor and an embodiment of evil himself (this part was played by David Prowse, though voiced by James Earl Jones). Skywalker and his new friends—Han Solo (Harrison Ford), a wiseguy space pilot, his hairy alien copilot Chewbacca, and two comic-relief robots—join the rebellion against the evil empire. An attack on the Death Star, aided by Skywalker's increasing awareness that he too is gifted with the Force, results in its spectacular destruction, although Darth Vader escapes to fight another day.

Lucas was open that his screenplay dealt not in characters in any meaningful sense, but rather in types, specifically story archetypes which he drew from the structuralist sub-Jungian lucubrations of Joseph Campbell's *The Hero with a Thousand Faces* (1949). Lucas himself partly credited the film's universal appeal to this fact, although in practical terms it schematises the characters, something Lucas' stiffly unidiomatic written dialogue only makes more pronounced. But as a *visual* artefact the film was unprecedented, and remains stunning. It was not the *content* of the film that is so praiseworthy, certainly not the ideological content, which is conservative and borders on the racist militarism of US militia groups, but rather the genuine sense of wonder *form* of the piece: the brilliant design; the wondrous special effects; the visual *mise en scène*. One particular element of the film's content that enjoyed success apart from the film was the religious-mystical doctrine of the Force.

In the sequel, *The Empire Strikes Back* (Irvin Kershner 1980), the rebels come under sustained Imperial attack, Luke trains as a Jedi under the diminutive green-skinned muppet Jedi Master Yoda (voiced by Frank Oz), and finally fights Vader, thereby discovering—in what was a genuine surprise to original audiences—that Vader is actually his father. The third film *Return of the Jedi* (Richard Marquand 1983) is mostly concerned with the ultimate rebel assault on a second Death Star, in the process of being built by the Empire. Luke, now a fully-fledged Jedi, confronts Vader a second time. After much light-sabre

swashbuckling, Vader rediscovers his love for his son, assassinates his emperor and dies. Princess Leia (revealed to be Luke's sister) finds love with Han Solo.

Many fans consider the second film the best, because the darkest, of the three, and because it takes the narrative risk of ending with the plot still *en l'air*, a fact which, combined with the horrific revelation of Luke's parentage, added a temporary gravitas to the on-going trilogy. But the potential was largely wasted. There is indeed something over-cosy about the revelation in *Jedi* that the whole cosmos-spanning battle between Good and Evil has actually been a sort of hypertrophic family drama, a cosiness too lamentably epitomised by the teddy-bear-like Ewoks who inhabit the forest Moon below the under-construction Death Star—certainly the most throat-clenchingly annoying aliens ever rendered on film. The fact that the explosion of the Death Star into the atmosphere of their Forest Moon will almost certainly wipe out all life on that world is some consolation for the outraged sensibilities of the film's viewers.

It is an obvious point to make about the trilogy that it is derivative. Some critics have suggested that this fact alone is enough to explain its enormous success. The problem with such an argument is that there have been very many SF films that are equally derivative, or more so, that have not managed to replicate *Star Wars*' popularity. Certainly the whole *Star Wars* series is confected out of Lucas' own reading: the planet Tatooine is a version of Herbert's Dune; the Death Star derives from E E 'Doc' Smith's interplanetary megaweapons; Coruscant is lifted from Asimov's *Foundation*; the teddy bear-like Ewoks are close to the creatures in H Beam Piper's *Little Fuzzy* (1962); Darth Vader is an amalgam of two of Jack Kirby's comic book characters, Dr Doom and Darkseid; and the Force has many things in common with the Source, from Kirby's *New Gods* series; and so on. But this is not particularly important. More germane are those moments in the films of sheer visual beauty, many of which have attained an iconic status in Western culture: the enormous wedge-shaped Imperial Star Destroyer rumbling into view over the top of the cinema screen at the very beginning of *A New Hope* (an iconic externalisation of the idea of political tyranny); Luke watching twin suns set on his uncle's farm; Darth Vader's black death's head mask; several of the intricately choreographed space battles; father and son fighting one another with light-sabres; and many others. The level on which *Star Wars* works most effectively is precisely as *visual* myth.

AFTER *STAR WARS*: *ALIEN*, *BLADE RUNNER*, *THE MATRIX*

The very large number of SF films released after *Star Wars* would, if I attempted to name them all, turn the remainder of this chapter into a tediously extended list of titles and dates. That said, it is quite hard to select those titles which have proved most significant to the continuing development of the genre from the morass (or, if you prefer a different metaphor, from the bountiful harvest) of 1980s and 1990s SF cinema. This is because of the close association between visual SF and fandom, which means that most SF films, even relatively minor

ones, ones that lose money or lack critical plaudits, have created around them a cultural microclimate in which they are discussed by dedicated fans, and from which they become the seed ground of small-scale SF megatexts. The ubiquity of the internet facilitates this cultural production.

But four titles stand out as unusually successful, generating not only other film sequels and prequels, but a wide variety of paratextual material and remaining culturally alive and significant today. Three of them were noted by Will Brooker, writing in the late 1990s:

Star Wars: a New Hope, *Alien* and *Blade Runner* were all released between 1977 and 1982; yet almost two full decades later, the narratives of Luke Skywalker, Ellen Ripley and Rick Deckard maintain their grip on popular culture. While texts of the same period like *Jaws*, *Close Encounters of the Third Kind* and *Saturday Night Fever* are now regarded as nostalgic exhibits in film ‘history’, these three science-fiction sagas endure vividly in the ‘present’ of the late 1990s. [Brooker, 51]

To Brooker’s three we may wish to add *The Matrix*, a film which, although released much later (1999), generated the combination of mass-cultural reach and extensive fan interest needed to establish it as a megatext of contemporary significance. Also relevant are the many Marvel Comics Universe films of the 21st century, which are discussed in a later chapter.

Alien (Ridley Scott 1979) has been treated with a greater respect by critics and academics, by and large, than *Star Wars*. Its violence excluded an audience of children, and its monstrous alien is seen as polysemously symbolic of a number of concerns that have chimed well with the interests of research-publishing academics in the last three decades—particularly in the fields of feminist and racial studies. Moreover, it marked a change of emphasis in the representation of the alien in SF film. After the Cold War invasion films of the 1950s, and prior to *Alien*, most Hollywood SF films followed *2001*’s lead in treating aliens as benign, if sometimes mysterious, creatures. Two movies by Steven Spielberg marked the apogee of this sort of film. *Close Encounters of the Third Kind* (1977) begins with potential alien encounter as an ominous business, but moves gear easily two-thirds of the way through into its saccharine, fluting, musical climax in which childlike aliens mix and mingle with humanity. Even more successful was *E.T. the Extra-Terrestrial* (1982) whose ugly-cute central alien, like a benignly superintelligent deshelled tortoise, generates a very powerful emotional effect. The sentimental *Starman* (John Carpenter 1984), and the even more sentimental *Cocoon* (Ron Howard 1985), stand as pendants to this tradition—in all respects lesser works than Spielberg’s two movies they were also out of time. By the mid 1980s almost all the aliens in successful movies were very nasty indeed—a trope that can be traced back to the impact made by *Alien*.

Alien is set aboard a cavernous interstellar cargo ship with the Conradian name *Nostromo*. Woken from hibernation by a broadcast distress signal, the crew find a crashed alien spacecraft in which numerous leathery eggs have been laid. A swift-moving handshaped alien creature leaps from one of these and

affixes itself to a crewmember's face, although this being later drops away and dies. The crewman (Kane, played by John Hurt) seems unharmed, but in fact the alien has laid a maggot in his torso. This creature later bursts out of his chest, bloodily, whilst the crew are having lunch—a moment of gut-wrenching visual poetry, and one of the most celebrated and genuinely shocking moments in modern cinema. The creature rapidly grows into a seven-foot towering alien carnivore, jet-black, with acid instead of blood and with a second set of teeth on a retractable tongue inside his already sharply betoothed mouth. One by one all the crew members are killed, until finally Ripley (Sigourney Weaver) destroys the monster.

Part of the film's appeal lies in its design and visuals, a twofold triumph. On the one hand there was Scott's expert directorial eye which ensured that his spaceship looks lived-in, worn-down, battered, distressed, dark—a radical move in a cinematic tradition where spaceships had hitherto tended to be gleaming white examples of polished technology. On the other hand, there was the contribution made by the Swiss artist who designed the alien itself and many of the sets, Hans Rudolf Giger. Giger had exhibited and published several books of his distinctive artwork (most notably *H. R. Giger's Necronomicon*, 1977), work which drew him to the attention of the producers of *Alien*. His designs for that film further developed his style: sinister, twisted, black images of weird organic shapes; machines that looked grown rather than constructed, generally rendered in dark inks, acrylic paints, with a high level of surface gloss that highlights the themes of convoluted quasi-biological form; and shapes reminiscent of sexual organs, images which convey an almost palpable quality of death and violence. In the words of Peter Nicholls, Giger 'revolutionized the look of SF cinema to a degree it would be difficult to overstate' [Clute and Nicholls, 495]. Arguably it is his work that raises *Alien* from being a well-executed but otherwise conventional 'bug eyed monster attacks humans' B-movie into (a frequently abused but unavoidable phrase) a work of art. Certainly it is primarily as a beautiful if unsettling visual artefact that *Alien* succeeds. The film's expertly orchestrated string of shock moments work very well on a first encounter with the text, but inevitably decay in effectiveness in subsequent viewings. On the other hand, as with all good visual art, Giger's designs repay close attention, and make the film worth returning to.

What it all signifies has been widely debated. Some feminist critics read the film as being in some ambiguous sense 'about' woman-ness. Ripley was unusual in late 1970s film in being an active action-hero rather than a passive wilting adjunct to a man. Barbara Creed points out that in the film 'virtually all aspects of the mise-en-scène are designed to signify the female: womb-like interiors, fallopian tube corridors, small claustrophobic spaces'. Creed's argument is that in late 20th-century culture 'the body, particularly the woman's body, has come to signify the unknown, the terrifying, the monstrous' [Kuhn, 215–16]. The success of *Alien* may be explicable in these terms; as a text that tapped into a broad cultural mixed fascination-repulsion with 'the body' as such, and with 'the female body' in particular.

The sequel *Aliens* (James Cameron, 1986) swaps Scott's fascinated lingering on the visual magnificence of Giger's designs for a much snappier, fast-paced action-adventure; but even here the sheer rightness of Giger's art gives the film resonance beyond its whiz-bang storyline. Weaver reprised her role as Ripley, this time travelling to a colony world with a band of space-marines to confront a large infestation of the alien creatures. Only one of the colonists has survived, a young girl called Newt (Carrie Henn), and the aliens make short work of the nervous and inexperienced marines. Once again Ripley saves the day, battling the enormous egg-laying alien queen. Cameron's film builds relentlessly in pace and excitement, and manages a genuinely climactic set of final scenes. The third *Alien* film, *Alien³* (David Fincher 1992), crash-lands Ripley on a forbidding prison world populated entirely by sociopaths, murderers and rapists. Whilst a stowaway alien wreaks havoc amongst this unlikeable crowd, it transpires that Ripley has herself been infected by the beast. The film ends with Ripley plunging into molten metal, immolating herself and her fetus-like alien (which bursts from her chest during the plunge) together. The sheer bleakness of this film, its unremitting pessimism and its consistently realised aesthetic of dour anti-beauty (the usually handsome Weaver appears in this film skeletally skinny, with shaven head) renders it surely one of the least 'Hollywood' films ever to come out of Hollywood. Only the size and receptiveness of the *Alien* fanbase could have persuaded Fox studios to invest the money in making it. *Alien Resurrection* (Jean-Pierre Jeunet, 1997) contrives a way to bring Ripley back to life, and is in its way an even weirder film than *Alien³*, fascinated with monstrous hybridity and revolting mutation. Although it lacks the coherence and focus of the earlier films, since it meshes what could have been a fairly standard Hollywood screen story with a more European directorial approach, replete with joyfully over-stylised visual moments and narrative *non-sequiturs*. The fifth in the series is the feeble and largely incoherent prequel *Alien versus Predator* (Paul Anderson, 2004). Ridley Scott decided to return to the *Alien* cosmos to direct the awkward, unengaging prequel *Prometheus* (2012).

There have been spin-off novels, but fewer of these than for *Star Wars* or *Blade Runner*. This is presumably because the *Alien* franchise has fewer narrative and conceptual possibilities. And indeed, examined too closely, it reveals certain difficulties. The *Alien* in the first film was primarily interested in eating the humans it encountered, despite the fact that such humans are integral to alien fertility and can only incubate *Alien* maggots if alive. It is counter-evolutionary for a creature to develop that devours its own means of reproduction. But the look of the film has inspired a range of spinoff visual art, including graphic novels (indeed, the *Alien vs. Predator* concept first originated in comic books), computer games, artworks and statuettes of the alien creature. It is as a triumph of design, and an embodiment of a certain style of dark neo-Gothic visual art (art that correlates to threat and violence as well as elegance) that *Alien* lives on.

Blade Runner (Ridley Scott 1982) is a film in a rather different category. Where the *Star Wars* films have grossed many billions of dollars, each *Alien* film has proved very lucrative (even Scott's *Prometheus* earned half a billion at the

box-office) and the *Matrix* films nearly \$2 billion worldwide, *Blade Runner* was not a runaway box-office success (it cost \$28 million to make and grossed \$35 million on its first release) and no sequel or prequel films have yet been made.⁴ Yet it is considered a classic of SF cinema not only by critics but also by a large fanbase. In part this is because it is seen by many fans as the best adaptation of Philip K Dick's work to the big screen (and Dick remains a talismanic figure for many SF fans). In part it is because the *look* of the film has proved so enduring.

This is more than simply a question of good design, although the design, special effects and cinematography on the film are all world class. It is a reflection of the consonance of style and substance. As in Dick's *Do Androids Dream*, on which the film is based, Rick Deckard (Harrison Ford) is a hunter of androids known as replicants. A group of these beings have escaped from their servitude and come to Earth, hoping to find a way to extend their built-in four-year lifespan. One by one Deckard kills these artificial humans, chasing them through the intricately realised multi-ethnic and postmodern city space. On the way he loses his certainty about what distinguishes real from artificial, discovering that the beautiful Rachel (Sean Young), with whom he has a relationship, is a replicant with implanted memories (she does not realise herself that she is not human). There is the possibility that Deckard is also artificial, although the film never resolves its ambiguity on this issue.

The film is sometimes criticised for failing to capture the subtleties of Dick's original novel, and it is true that there are many differences between the two works. *Blade Runner* lacks the fascination with the notion of an artificial messiah, and its interrogation of the difference between simulated and real, between surface and depth, takes place under a newer cultural logic, one called postmodernism (*Blade Runner* is perhaps the text most often instanced by critics as a paradigm for that slippery term). More importantly, *Blade Runner* reconfigures Dick's imagination in visual terms. The transfer from one prose masterpiece to another visual masterpiece enacts the broader shifts of SF.

Blade Runner is just exquisite-looking. The film revels in a density of visual effect (Scott himself talked about his approach to directing as the 'kaleidoscopic accumulation of detail ... in every corner of the frame ... [making] a 700-layer cake'); but more than that it is in many ways about 'looking', about the visual. In Scott Bukatman's words '*Blade Runner* is all about vision. Vision somehow both makes and unmakes the self in the film, creating a dynamic between a centered and autonomous subjectivity (eye/I) and the self as a manufactured, commodified object (Eye Works)' [Bukatman, 7]. Eye Works is the name of a commercial emporium that sells artificial eyes. The chief replicant Roy Batty (played with a brilliant mix of campness and Aryan menace by Rutger Hauer) visits, and the technician recognises him as a replicant. 'You Nexus, heh?' he says. 'I designed your eyes!' Batty replies with chilly profundity: 'if only you could see what I've seen with *your eyes*'.

The temptation is to read the film as a gloss upon cinema itself, the artificial eye through which we see wonders. At the end of the film, as he dies, Batty tells Deckard: 'I've *seen* things you people wouldn't believe: attack ships on fire off the shoulder of Orion'. But SF cinema offers the visual artist possibilities that

are not available to other film-makers. As the screenwriter Hampton Fancher worked through multiple drafts of the script Scott advised him, to help imagine the look of this future world, to read copies of the French comic *Métal Hurlant*. Elements of *Metropolis* and *The Shape of Things to Come* were appropriated, New York and LA were jumbled, punk fashions and 1930s gumshoe-chic, everything was mixed into a rough-edged visual melange. Where both *Star Wars* and the *Alien* films elaborated one recognisable visual style, *Blade Runner* succeeded in melding an encyclopaedic visual aesthetic.

The *Matrix* franchise also achieves its greatest effects in the visual idiom. The premise of the original film [*The Matrix* (Wachowski siblings, 1999)] is not original; engineered out of Dick, Gibson's *Neuromancer* and several other sources, it concerns an ordinary hero Thomas Anderson (Keanu Reeves) working in a dead-end office job in what appears to be the present day and it cracks his world open to show him dizzying new depths. Anderson meets with hacker and digital terrorist Morpheus and is told that what he takes to be reality is in fact an elaborate computer simulation called the Matrix, programmed by malign machine intelligences who have enslaved humanity. Unplugged from this consensual simulation, Anderson becomes Neo and joins Morpheus' rebellion of humanity against the machines in the grimy 'real' world. Morpheus believes Neo to be the One, a predicted saviour who will deliver mankind out of the machinic bondage. Neo doubts this, but the course of the film sees him return to the Matrix (with *Joe 90*-style upgrades that give him almost superhuman strength and agility) to be killed and then to return to life. He saves the day, and accepts his destiny as messiah.

But what struck many viewers when they first saw it was less this narrative and more the extremely stylish, visually gorgeous and arresting manner in which it was realised on screen. The special effects, the cinematography, the design, the whole *cool* of the thing captured fannish hearts. One particularly celebrated cinematographic trick was a shot-sequence invented for this project and called by the film-makers *bullet-time*. At several key moments, the frame appears to freeze in time, and the camera angle swoops through a hundred and eighty (or more) degrees around the static actors. The first bullet-time image is one of the most famous of the film. Inside the matrix, the police attempt to arrest the beautiful Trinity; she kung-fus her way free. At one point in the fight she leaps in the air, her arms curved away from her body, her legs in mid-kick. The image freezes when she is in mid-air and the point-of-view circular-pans all the way around her, before the image unfreezes; Trinity kicks a cop in the chest and drops back to the floor. Other key bullet-time moments pick out, or visually highlight, similar moments in action sequences. In one, Neo falls backwards to avoid a barrage of bullets fired by an agent; as he tips backwards the camera spins around his flailing body and the bullets make themselves apparent with lines of aerial ripples. In another, Neo and Mr Smith, mid-fight, launch themselves at one another, the camera circling their bodies in mid-air. Bullet-time, in other words, seems to be a form of visual italics, a method of underlining moments of particular excitement. Excitement here connotes the conventional climactic moments of the action-thriller genre: guns, fist-fights

and so on. But there is something very beautiful about them too; the term action choreography has never been more appropriate. In fact these moments concretise the fans' urge to get inside the world of the Matrix, to have a proper look around rather than simply and passively accept the 2D image.

The huge success of the first film led to two sequels [*The Matrix: Reloaded* (Wachowski siblings, 2003); *The Matrix: Revolutions* (Wachowski siblings, 2003)] and a number of other spin-offs, most notably the nine animated shorts set in the Matrix universe collected in *The Animatrix* (Peter Chung, Andy Jones, Yoshiaki Kawajiri, Takeshi Koike, Mahiro Maeda, Kôji Morimoto, Shinichirô Watanabe, 2003). In plot terms the sequels saw the story become more diffuse and incoherent, and the films are less liked by fans, although they made a great deal of money for the film-makers (to adapt Arthur Miller's phrase: they're *liked*; they're just not *well*-liked.). But in visual terms they added a number of potentially iconic images to the whole: Neo fighting an army of replicated versions of his arch enemy Smith; an extraordinary chase sequence driving the wrong way up a crowded Freeway; the white-bearded architect of the matrix itself sitting in a strange room, every wall of which is covered with television screens; millions of giant spermatozoon-shaped killer robots pouring into the forward hall of humanity's last city in the real world; and so on.

In all these cases, these films, or more accurately these *franchises*, have endured not only because they provide the usual satisfactions to audiences sitting in cinemas watching them, but because they offer something more: a fictive SF environment realised well enough to permit fans imaginative entry. In each case it is the imagined world of the film that has fully endeared the films to its fanbase. The bulk of paratextual material allows viewers, in effect, to go behind the stage sets and special effects; to wander from planet to planet in the *Star Wars* universe; to fantasise about worlds in which women as beautiful as Sean Young can be purchased from an android store; worlds in which the grind of a menial office job can be thrown off in a whirl of kung-fu; in which, in fact, a detailed knowledge of computers becomes an index not of nerdiness but of supercool, kick-butt, handsome as Keanu Reeves, saviour of mankind potential.

But there's more to it than a merely hospitably escapist concept. The reason why these four franchises struck their chords, as opposed to the hundreds of other films (many of them better conceived and better thought through) has to do with their specifically *visual* power. All four are breathtaking and beautiful works of visual art. It is on that criterion, rather than on the level of character, plot, or even premise, that their greatness must be judged. Each has a distinctive look, a recognisable and potent visual styling; and like the greatest paintings they are artworks in which the viewer can lose herself for long hours.

SF BLOCKBUSTERS OF THE 1980s

A number of other SF films have enjoyed considerable success and have also generated a great deal of paratextual material and fan activity, without reaching the levels of cultural saturation of these four titles. Chief amongst these

titles is Steven Spielberg's *E.T. the Extra-Terrestrial* (1982), a film of significant emotional power that manages to be very moving without being too overly sentimental, a trick which earned it three quarters of a billion dollars. In part this is because Spielberg is so expert a director of children, the main players in this drama. The plot concerns a runty but appealing little space-alien who gets separated from his spaceship and holes up amongst the toys of a sympathetic human friend, the 10-year-old Elliot (Henry Thomas). Elliot lives with his brother, sister and single-mother in an LA suburb, and he forms a supernatural bond with the E.T., who possesses psionic powers. The adult world, searching for the alien, rudely intrudes, sealing the house and performing tests on the sickening E.T., who dies. Everything seems lost, but the E.T. resurrects himself, and with the aid of the children escapes the adult scientists, rejoining its spaceship and leaving the planet. The film achieves a genuinely numinous mood by mediating that uplift via the open-heartedness of childhood. It does not distort matters to see it as elaborating the New Testament script about becoming again as a little child as a prerequisite for entering heaven. In several dozen specific points, too numerous to list in detail here, the story echoes the life of Christ, of which his resurrection is only the most obvious. There are good reasons for explaining the film's success in terms of its emotionally potent numinous qualities, an example of the way an apparently simple content (the plot summary above will give no sense of the power of the film to those who have not seen it) can achieve a luminous almost spiritual effect as a secularised quasi-religious myth. In this respect *E.T.* is a film in touch with the deep roots of SF as a genre.

Another film that managed a significant impact was *The Terminator* (James Cameron 1984), which has generated four sequels [*Terminator 2: Judgment Day* (James Cameron 1991); *Terminator 3: Rise of the Machines* (Jonathan Mostow 2003); *Terminator: Salvation* (directed by the laconically named 'McG', 2009); and *Terminator Genisys* (Alan Taylor 2015)] and which franchise also includes graphic novels, crossover works, video games, tie-in novelisations (at least one of these—S M Stirling's *T2: the Future War* (2004)—is really rather good). The titular terminator is a man-shaped cyborg designed to kill humans in a future world in which mankind is engaged in a world-wrecking total war with machines. On the verge of losing this war, the ruling misanthropic computer system Skynet sends a Terminator (played with an appropriately lumpish muscle-bound brutishness by Arnold Schwarzenegger) back in time to the 1980s to kill the mother of the man, John Connor, who has led humanity to the brink of victory. With Sarah Connor dead, John will never be born, and the machines will win. With an arbitrariness born of the need to maximise narrative excitement, the future Connor is able to send only one lone human soldier back to protect his mother. The film then plays out a lengthy, and very effective, chase and fight action adventure set in 1980s LA, with the relentless Terminator being eventually stripped of his fleshy human covering revealing a gleaming metal skeleton, a modern refashioning of the old *memento mori*. This theme becomes plainer in the sequel, in which, once again, a potential assassin and a protector are sent back to Sarah Connor (now with her young son John at her side), the

twist being that Schwarzenegger, still a Terminator, is now the protector; the other Terminator (the slender but terrifying Robert Patrick) is a newer model made of 'liquid metal' that can morph into almost any shape. *Terminator 2* is a purer film than the first; jettisoning almost everything except for the chase, a strategy which highlights the absolute unstoppable relentlessness of the killer Terminator all the more. This machine is, we realise, a trope for death itself, that from which we try to flee but which we can never outrun. Sarah Connor's attempts to change the future and avert the nuclear war that will lead to the rise of the machines appear successful at the end of the second film, but *Terminator 3* (in which Schwarzenegger plays yet another 'good' Terminator, and the role of the liquid-metal opponent is taken by a woman) restores destiny to its world-destructive path. Despite the gravitational pull towards Hollywood 'happy endings' the *Terminator* franchise has enough inertia in its vision of the inherent violence and destructiveness of mankind to avoid being upbeat. Indeed, fans are less interested in the resolution of the ethical tensions of the premise in favour of good (non-violent, caring, sharing) solutions, and are drawn more to the figure of the Terminator itself, an effective externalisation of what Freud, in a rather different context, called the Death Drive. In *Terminator 2*, the boy John Connor, whom the good Terminator has been programmed to obey, orders him 'not to kill anybody, OK?' But this apparently peace-endorsing motto is resolutely and exhilaratingly deconstructed by the action of the movie. The Terminator does not kill but does cripple and terrorise the humans who stand in his way in large numbers. Future nuclear war can, it seems, only be averted by massive destruction in the here and now; buildings explode, cars and helicopters crash, billions of dollars of damage is done, and, as we learn in *Terminator 3*, all for nothing. This film is in love with destruction, partly as an end in itself (as thrilling cinematic spectacle) but also as a means to another end: the machinic blankness and regularity of death itself. The later films are, though eye-wateringly expensively made, dilute and disappointing, with *Terminator: Salvation* a particularly low point in SF cinema.

As with *E.T.* many contemporary commentators noted religious overtones in the movie, from the fact that John Connor (the future saviour of mankind in the war against the machines) shares his initials with Jesus Christ, to the apocalyptic subtitle of the second film. But although there is some marginal mystical discourse—apparently only living tissue can travel through time, on account of some ill-defined field it generates; hence the Terminators' need to clothe their machine skeletons in cloned flesh—in fact these films are wholeheartedly in love with the machinery they notionally demonise. These films valorise technology as precise, impermeable, efficient, cool-looking and utterly desirable; fans evidently agree.

These visions of monstrous and violent otherness made much more of a cultural impact than Cameron's other big-budget SF film from the 1980s, *The Abyss* (1989). Here mysterious aliens at the bottom of the sea contact the human crew of an underwater research establishment. They prove, after some tension, to be benign, but friendly aliens were out of step with what the movie-watching public wanted in the 1980s and 1990s, and the movie was

a box-office disappointment. More successful was Australian director George Miller's quartet of near-future anarchy and social collapse, *Mad Max* (1979), *Mad Max 2* (1981), *Mad Max: Beyond Thunderdome* (1985) and the absolutely superb *Mad Max: Fury Road* (2015). In the first film a traffic policeman Max Rockatansky (Mel Gibson) becomes brutalised by the murder of his family and pursues an ingeniously violent revenge on the motorcycle gang responsible. The modest success of this low-budget movie enabled the much weirder, post-apocalyptic sequel, in which rival gangs fight over petrol in the anarchic Australian outback. The third film is odder still, with an imaginative and creative oddity, spending less time with the crunching road-battles that had made the reputation of the first two films, and more with an intriguing society of children in an oasis into which the now middle-aged Max stumbles. He is treated by these kids as a literal messiah, who will lead them to paradise. In the, much later made, fourth movie, Tom Hardy replaces Gibson, and the film triumphs via a gorgeously deranged and consistently dream-haunting visual spectacularism of what amounts to one long extended chase-sequence across the sort of desert that would have delighted the heart of Salvador Dalí.

Another successfully iconic nasty alien was the titular *Predator* (John McTiernan 1987), who comes to Earth (in the first film of the franchise, to the jungles of Central America) to hunt humans (in this case a team of US Commandos led by Arnold Schwarzenegger), using various high tech weapons and disguises. The Predator kills all the commandos except for Schwarzenegger, who kills it. In the sequel *Predator 2* (Stephen Hopkins 1990) the alien goes hunting in crime-torn LA, killing many bad guys and some good ones before being dispatched by policeman Danny Glover. Since this franchise is patently derivative of the *Alien* films, it is fitting that a successful series of comics and then a less successful 2004 film pitted the two varieties of extraterrestrials against each other. One of the most interesting things about the *Alien versus Predator* movie is the fact that the human characters, caught in the middle of this battle, choose to ally themselves with the latter creatures. Technology connects us, which in turn suggests that the Predator is in some sense an outward projection of human self-image. An even less pleasant alien appeared in John Carpenter's superb remake of *The Thing* (1982). A *tour de force* of revolting and startling special effects. The titular alien (when not impersonating humans) changes shape into a nightmare torrent of monstrous forms.

Dutch director Paul Verhoeven has made a number of notable SF blockbusters. *RoboCop* (1987) is a darkly witty and ultraviolent satire upon zero-tolerance policing. A murdered policeman is brought back to life as a clunking cyborg, with chrome prostheses and a robotic voice. He takes inevitable revenge upon his own murderers, but the sparkle of the film is found in its interstices; pastiche adverts and TV-spots, moments of deft extrapolation. The film's sequels (none of which were directed by Verhoeven) have been, without exception, lamentable. Verhoeven's broad-brush adaptation of Philip K Dick's 'We Can Remember it for you Wholesale', *Total Recall* (1990) worked less well (Dick's first name was, ominously, misspelt as Phillip in the opening credits).

Arnold Schwarzenegger was cast as a regular working Joe who is swept up in spy-mystery adventures on Mars, or else only thinks that he has been. There are varieties of disbelief it is impossible to suspend, and the notion of monstrously-muscle Schwarzenegger as an ordinary guy working a desk-job is one such. Verhoeven's invisible man film, *Hollow Man* (2000), similarly flagged, despite impressive special effects, losing plot coherence and tension in a welter of increasingly improbable final-act violence. But Verhoeven's version of Heinlein's *Starship Troopers* (1997) comes within a bicep's width of being a masterpiece. Heinlein's original novel is a lively but horribly earnest endorsement of militarism and the army as the fount of all virtue. Verhoeven reads his source text brilliantly against the grain, casting a series of beautiful-looking, plasticky soap-opera starlets as the army grunts, and then delighting in the battle scenes where many of them are sliced into little pieces. The whole film cries out to be read as funhouse satire on American TV mores. The bones of a conventional military movie are still visible, just (tough sergeant whips unpromising group into tight fighting unit), but they are overlaid with such visual panache, and so many witty touches, that the viewer ceases to pay attention to the reactionary froth and is caught up in the visceral, deconstructive fun.

The late 1980s and 1990s saw a flurry of superhero movies. Superman was transferred from comic book to big screen [*Superman* (Richard Donner 1978); *Superman II* (Richard Lester 1980); *Superman III* (Richard Lester 1983); *Supergirl* (Jeannot Szwarc 1984); *Superman IV: the Quest for Peace* (Sidney J Furie 1987). Batman followed [*Batman* (Tim Burton 1989); *Batman Returns* (Tim Burton 1992); *Batman Forever* (Joel Schumacher 1995); *Batman and Robin* (Joel Schumacher 1997)] and then, even more successfully, Spider-Man [*Spider-Man* (Sam Raimi 2002); *Spider-Man 2* (Sam Raimi 2004)]. The Incredible Hulk lost his superlative (in more than one sense) for *Hulk* (Ang Lee 2003); whilst the ensemble X-Men [*X-Men*, (Brian Singer 2000); *X2* (Brian Singer 2003)] enjoyed both popular and critical success. These comics franchises were all re-relaunched cinematically in the 2000s and 2010s, to sometimes staggering commercial success, and more detailed discussion of what is going on in these simplified fables of action, atonement and salvation is reserved to a later chapter. For now it is enough to note that the shift away from Superman (an alien saviour gifted with supernatural powers) towards Batman and Spider-Man (more ordinary humans, with human foibles) tracks a similar shift of cultural fascination, from messiah as god to messiah as man.

A number of Japanese *animé*, or animated SF films, also achieved global cultural penetration in the 1980s and 1990s. The most famous is still *Akira* (Katsuhiro Ôtomo, 1988), based on an enormous manga (comic book) series (1982–1990) This tells a rapid and, to the casual viewer, incoherent story about New Tokyo, a gang of kids on enormously souped-up motorcycles, and the coming of a metahuman mutant with massively destructive powers. But, as with all the key SF films of this period, it is the visual look of the whole that is where its greatness lies. Similarly, if one attempts to understand *Kôkaku kidôtai* (*Mobile Armoured Riot Police* Mamoru Oshii 1995; the film is known in

Anglophone countries as *Ghost in the Shell*) as a meditation on the mind-body split based on its textual story and dialogue alone, it would appear clogged and jejune. But the film elevates itself thanks to its beautiful, multilayered visual text, each image of which speaks volumes about the film's theme. Like many anime films, it becomes understandable, even poetic, on an intuitive, nonlinear, associative level. The sequel *Innocence: Kōkaku kidōtai* (Mamoru Oshii 2004) is more pretentious (one character declares 'life and death come and go like marionettes dancing on a table, once their strings are cut they crumble easily') although it similarly achieves a sometimes numinous beauty.

1990s

Spielberg's 1990s also saw a number of significant SF films. *Jurassic Park* (1993) adapted a Michael Crichton novel about genetically recombined dinosaurs overrunning a near-future safari park and eating people. It was extremely, perhaps extraordinarily, successful. Its sequel, *The Lost World: Jurassic Park* (1997, also directed by Spielberg) reworks *King Kong*, with dinosaurs instead of a giant ape terrifying westerners on a distant island before being transported to San Diego and running amok. As a deliberate homage to Kong the film has a degree of postmodern charm. Sadly *Jurassic Park III* (Joe Johnston 2001) proved a thin retread of the first movie, and seemed to have killed the franchise off. The brand, though, was strong and a fourth instalment, *Jurassic World* (Colin Trevorrow 2015), became, in breathlessly short order, the fifth highest grossing film of all time. The public appetite for dinosaurs seems bottomless.

A.I.: Artificial Intelligence (Spielberg 2001) was based on a Brian Aldiss story 'Supertoys Last All Summer Long', about a robotic boy-child designed to have feelings and intelligence who becomes the surrogate child of a couple whose real child is in cryogenic suspension with an incurable disease. Stanley Kubrick had been developing the film for a dozen years before his death, passing the project on to Spielberg. The earlier part of this film achieves a genuine power, as the real son recovers and the family has no further use for the robot son, whose programmed love for his 'mother' can nevertheless not be unwritten. There is a chilly, beautiful mournfulness to some sections of this picture which build towards a significant emotional power, although this build is ruined by a tacked-on and wholly unbelievable ending that quite spoils the whole. Kubrick delayed making the picture because he hoped that technology would develop a real robot which he could then cast as the boy, and to work properly the project needed to be bleached of almost all human emotion. Spielberg, often expert at modulating sentiment precisely, was less deft in this case. Mind you, given that the title was changed from *A.I.* to *A.I.: Artificial Intelligence* because US test audiences assumed the two initials referred to A1, a popular brand of American steak sauce, the world into which the film was being released might not have been ready for a fully Tarkovskian moviegoing experience. Better was *Minority Report* (Spielberg 2002), based on Philip Dick's story of the same title: a pre-crime division, which telepathically intuit future data

to stop crimes being committed in the first place, has made mid-21st-century Washington DC virtually crime free. But the leading pre-crime policeman, John Anderton (Tom Cruise), is accused of the future-murder of somebody he has never even heard of. The future world is brilliantly realised, not least because Spielberg gathered a team of sixteen futurological experts in Santa Monica to brainstorm the year 2054; the gadgetry is very convincing and the action-adventure element well handled. But the film as a whole is actually about free will, and as such it connects directly with the theological taproot of SF as a whole. Anderton (in the original screenplay the character's name was the more obviously son-of-mannish Anderson) struggles with the theological dilemma of whether future-omniscience is compatible with freedom of will. Spielberg, rather unconvincingly in this picture, wants to suggest that it is.

Many SF blockbusters from the 1980s and 1990s worked, as did *A.I.*, with these sorts of theological constructs. Where the religious element was taken literally it often backfired badly. An example is *Event Horizon* (Paul Anderson 1997) in which experiments with a faster-than-light drive system accidentally opens a gateway to an unreconstructed medieval Hell, condemning the entire crew to Bosch-like torments. The spaceship *Event Horizon* was deliberately modelled on the Parisian cathedral of Notre Dame and is full of crucifixes, but the overall effect is simply silly. The idea of Hell as a literal location no longer has mainstream cultural purchase. Instead, the important questions of atonement, of the status and problematic of the messiah, has been translated into metaphoric and visual-materialist terms: as the Christological Neo in the *Matrix* films; as the superhero (as Superman and Spider-Man); and even in comic terms as the mechanical alien *The Iron Giant* (Brad Bird 1999), or the wittily profound and hilarious pastiche of the Fantastic Four, *The Incredibles* (Brad Bird 2004). The shaping forces at the heart of SF are still evident, although they have grown in SF cinema into a rich and strange visual iconography.

TIME TRAVEL

The list of highest grossing films—appended at the end of this chapter—makes plain that SF and fantasy, broadly conceived, have become the dominant cultural form of cinematic art in the world today. Of the top twenty earners, only three are not fantastika: James Cameron's *Titanic* (1997); the action-thriller *Furious 7* (James Wan 2015); and the James Bond spy thriller *Skyfall* (Sam Mendes, 2012). Yet even these three trade in a mode of visual spectacularism with close affinities to SF. Otherwise every film on this list succeeded by offering its audience a visual correlative to the sense of wonder—scale, magnificence, sublimity and grandeur—from the highest grossing film ever, *Avatar* (James Cameron, 2009), on down. If this visual sublime is one component to the affinity SF has with movies, another is to do with time itself, and explains why time travel is so often a theme or premise of this kind of film. Movies embody time, materially and formally; they show the unfolding of events in motion across time, such that it's not possible to discuss them without acknowledging the extent to which time is the key axis of their visualities.

One question that seems relevant is, does time travel in SF have to do with permanence, or impermanence? We might say the answer is the former, because the very fact of being able to travel in time speaks to some mode of a subsisting architecture of temporality, permanent in the way that the house through which we walk is permanent. The permanence of the house is what enables the transience of the walk. Or else, perhaps we might say, time travel *shores up* all the stuff that might otherwise be impermanent. If an object, an action, a person is doomed to transience, the existence of time travel would enable us to return to a given moment as many times as we like, avert death, resurrect the fallen and so on. But the counter argument would suggest that since time, the necessary medium of any time travel, is the idiom of impermanence, movies, which stage their narratives in motion *through* time, embody this impermanent logic. The static figures on the side of Keats' 'Grecian Urn' are in a different state; indeed, the whole point of the poem is to contrast this perfect but unconsummable stasis with the fleeting joys of sorrowful life. It's this cusp, I think, that is the really important one; I mean the cusp between images in motion and images in stasis. The first give us the kinetic dynamism of the movies, a dynamism unrestrained by the actual arrow of time, which can run its footage backwards or forwards, can slow down or speed up the passage of time and so on. The second, though, have an aura that film lacks, precisely because they stand outside of the entropic logic of movies.

I think this is why the time travel film so often uses the still photograph as a crucial visual rebus. In *Back to the Future*, for instance, a still photograph represents the authentic 'baseline' reality that is threatened by messing with the timelines, with individuals literally fading out of the photographic artefact before our very eyes. In the original *Terminator* movie, it is a photograph of Sarah Connor that future-warrior Kyle has somehow obtained, that motivates his actions and so the narrative loop of the whole film—he falls in love with the image in the still, goes back in time to find her and impregnates her with the future world saviour. And as discussed above, Chris Marker's *La Jetée* is composed almost entirely out of still photograph images, many critics have treated this text as one of the most significant of all time travel movies, and not just because it has been so often imitated and remade.

This time-loop structure takes its cue from written science fiction, of course. By the 1950s and 1960s hundreds of time travel stories had been written, effectively codifying the parameters of the conceit. These cluster around two main varieties of temporal paradox that time travel, were it actually possible, might generate—what we might call the positive and negative, or perhaps the *productive* and *destructive*, archetypes:

1: the time loop paradox, whereby it might be possible for me to go back and become my own ancestor, or even my own parent.

2: the, so-called, grandparent paradox in which if I went back in time and killed my grandparents, my parents would never be born, so I would never be born; but then I wouldn't exist to be able to go back in time and kill my grandparents, in which case they would exist and I would have been born able to go back in time and kill, and so on.

The key texts as far as the first paradox is concerned are two Robert Heinlein short stories: 'By His Bootstraps' (1941); and '—All You Zombies—' (1958). In the latter the contortions of a temporally dislocated plot result in the main character impregnating a sex-change earlier version of himself who thus gives birth to himself. This is, we could say, a kind of limit case of control; the ultimate male fantasy of perfect self-reliance and self-containment, bare existence itself created out of the self unsullied by interaction with others. That there is something claustrophobic and even psychopathological about this fantasy hasn't stopped it becoming a staple of the genre. Cinema has been particularly taken with the structural neatness of this loopy trope: *Groundhog Day* (Harold Ramis 1993), *Donnie Darko* (Richard Kelly 2001), *Déjà Vu* (Tony Scott 2006), *Source Code* (Duncan Jones 2011), *Edge of Tomorrow* (Doug Liman 2014) and *Looper* (Rian Johnson 2012) all rehearse this structure.

A paradox naturally invites attempts at a solution, and this one has most commonly been 'solved' in fiction with the possibility that travelling back in time results in an alternate reality, or time line, branching off from the moment of one's arrival. An influential and much-parodied version of this is Ray Bradbury's 'A Sound of Thunder' (1952); a time travelling big game hunter on a licensed Tyrannosaurus Rex hunt accidentally steps on a butterfly, such that when he returns to his own time he finds everything is different. This is a premise that has informed thousands of SF stories and films in various ways; but we can say, a little more precisely, that the trope almost always posits the alternate timeline, only to fit in bridges, doorways, paths, connections—in a word, loops—between the 'baseline' reality and our own. The point is rarely simply to present a version of history in which things are variously different; it is much more often to reflect upon our own course of history by gifting a hero the chance to 'change' the future in a practical sense.

There is, in other words, a kind of existential conservatism to the cinematic time-travel story, something that links back to its own form. The analogues between the formal qualities of cinematic representation and time travel are manifold and patent. Films can easily speed up or slow down the apparent passage of time; running film backwards gives a sense of how the exterior world might look to somebody travelling against the vector of the arrow of time. Cutting between shots effortlessly disposes of intervening time (the jump-cut between the prehistoric monkey-man's bone tossed into the air and the complex spaceship falling through its Earth orbital path in *2001* is a nicely extreme illustration of this). Whilst watching a film we do not, of course, literally travel forward in time hundreds of thousands of years, but the illusion of such time travel is more compelling for the viewer because it has been visually rendered. The loop that defines these movies turns out to be a short-circuit pathway leading only to death. This seems to be because the loop is a backward-looking topography, linking the present (whenever that is, for the movie) with the past. The loop is always a tangle, and the nature of the motion of these moving pictures always draws that tangle into a tight knot. Time travel to the future is different, but rather less popular. I suppose this is because it tropes prophecy (itself notoriously unreliable), prediction, planning and so on; variously

arid and intellectual exercises, in most cases. But time travel to the past tropes memory, and memory, in its tyranny as well as its pliability and intermittency, always haunts the now. Is constitutive of the now. All stories are the story of the man, or woman, marked by the frozen moment of his/her childhood; and the revelation in Marker's *La Jetée* is the secret truth of all time travel, that this static visualisation of the deep past is actually our own death.

NOTES

1. I don't want to draw this thumbnail discussion out unnecessarily; but it might be objected that 'music' rather than poetry has always been the dominant form of 'lyric' or 'epiphanic' art. I disagree, although the case can be argued. It seems to me that the form of Romantic music that trades particularly in intensities (the choral movement of Beethoven's Ninth, say; or the Nimrod moment in Elgar's *Enigma Variations*) are fairly recent developments in art and relatively rare. Most music over the last thousand years—beautiful and endlessly supple as that artform is—has been subordinated to other needs: church, court, dance and so on. Much pop music is similarly subordinated, particularly to the needs of dance (and of commerce). But a large portion of pop now functions culturally in the way poetry once did. Which is to say, very few people ever listened to music in the past the way that a rapt teenager will listen today to his favourite album, over and over, milking the evanescent thrill, finding tremendous and even mystical significance in it, becoming extraordinarily intimate with it.
2. In the original series the Klingons are brutish creatures, dark-skinned and dressed with a samurai Japanese styling. In the movies and *The Next Generation* Klingons are more sympathetically rendered, and are given certain physical differences with humans, being larger of stature and having a prominent cranial bone structure that looks like a giant Mars bar melted into their foreheads.
3. Brian Aldiss is only one amongst many to lament the turning of SF into 'commercial coin' by the visual media. 'Much of the vitality of written SF lay in its conflict of ideas' he writes; accordingly 'we are wise to have reservations about this sweeping success of [visual] SF. As Pamela Sargent pointed out in *Science-Fiction Studies* (July 1997), "Visual science fiction is almost a virtual museum of the forms and ideas found in written SF, dumbed down to varying degrees"' [Aldiss, 2] It is worth adding that not all critics agree with the notion of SF as a literature of ideas. Mark Bould, for instance, makes two good points: 'first, the majority of SF stories have no more ideas than your average Mickey Spillane novel; second, what often passes for ideas in SF are more accurately described as conceits' [private correspondence].
4. *Solider* (Paul W S Anderson 1998), a very bad SF film and supposedly set in the same universe as *Blade Runner*, has almost no points of continuity with the earlier film. Talk of an actual sequel to *Blade Runner*, to be called *Metropolis*, has been circulating for more than a decade, but nothing has yet come of the project. American writer K W Jeter published three quite good sequels in novel form: *Blade Runner 2: the Edge of Human* (1988); *Blade Runner 3: Replicant Night* (1996); *Blade Runner 4: Eye and Talon* (2000).

APPENDIX: ALL-TIME TOP 20 MOVIES BY GLOBAL BOX OFFICE (GROSS IN DOLLARS) AS OF END OF 2015

1. <i>Avatar</i> (2009)	2,787,965,087
2. <i>Titanic</i> (1997)	2,186,772,302
3. <i>The Avengers</i> (2012)	1,518,594,910
4. <i>Furious 7</i> (2015)	1,518,594,910
5. <i>Jurassic World</i> (2015)	1,384,037,000
6. <i>Avengers: Age of Ultron</i> (2015)	1,383,499,000
7. <i>Harry Potter and the Deathly Hallows—Part 2</i> (2011)	1,341,511,219
8. <i>Frozen</i> (2013)	1,279,852,693
9. <i>Iron Man 3</i> (2013)	1,215,439,994
10. <i>Transformers: Dark of the Moon</i> (2011)	1,123,794,079
11. <i>Lord of the Rings: Return of the King</i> (2003)	1,119,929,521
12. <i>Skyfall</i> (2012)	1,108,561,013
13. <i>Transformers: Age of Extinction</i> (2014)	1,119,929,521
14. <i>The Dark Knight Rises</i> (2012)	1,084,439,099
15. <i>Pirates of the Caribbean: Dead Man's Chest</i> (2006)	1,066,179,725

For reference, this was the list at the time of the publication of the first edition of this book (2006):

1. <i>Titanic</i> (1997)	1,835,400,000
2. <i>Lord of the Rings: Return of the King</i> (2003)	1,117,202,779
3. <i>Harry Potter and the Philosopher's Stone</i> (2001)	975,800,000
4. <i>Star Wars: The Phantom Menace</i> (1999)	925,800,000
5. <i>Lord of the Rings: The Two Towers</i> (2002)	922,986,073
6. <i>Jurassic Park</i> (1993)	920,100,000
7. <i>Harry Potter and the Chamber of Secrets</i> (2002)	869,400,000
8. <i>Lord of the Rings: Fellowship of the Ring</i> (2001)	867,683,093
9. <i>Finding Nemo</i> (2003)	844,400,000
10. <i>Shrek 2</i> (2004)	840,581,107
11. <i>Spider-Man</i> (2002)	821,700,000
12. <i>Independence Day</i> (1996)	813,200,000
13. <i>Star Wars</i> (1977)	797,900,000
14. <i>Harry Potter and Prisoner of Azkaban</i> (2004)	781,767,207
15. <i>E.T. the Extra-Terrestrial</i> (1982)	775,913,554

These figures are not adjusted for inflation. When this adjustment is made (across the last century), the top 5 titles are:

World gross

1. <i>Gone with the Wind</i> (1939)	3.44 billion
2. <i>Avatar</i> (2009)	3.02 billion
3. <i>Star Wars</i> (1977)	2.83 billion
4. <i>E.T. the Extra-Terrestrial</i> (1982)	2.37 billion
5. <i>The Sound of Music</i> (1965)	2.06 billion

Source: www.the-numbers.com/movies/records/#world. Consulted Dec 2015

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Prose SF of the 1980s and 1990s

Two seemingly contradictory observations suggest that something peculiar happened to written SF in the last decades of the 20th century. The first is that, over this period, more and more SF novels and stories appeared annually, amongst them many significant achievements and some undeniable masterpieces, such that SF grew into one of the most successful branches of publishing. But a second observation is that during this period the novel stopped being the prime mode of SF. As visual SF (particularly cinema and TV) increasingly came to dominate the mainstream, prose SF became increasingly sidelined—an energetic sideline with many passionate adherents, but a sideline nonetheless. Scores of SF novels in the 1980s and 1990s became bestsellers and were acclaimed as classics in their day, but a very small number of those titles are still alive today in any meaningful sense. By alive I mean a book still in print, still the subject of discussion and recommendation amongst readers (outside small-scale dedicated fanbases), still influencing new writers, still making a cultural impact.

In other words, SF publishing from 1980 to 2000 embodies an odd paradox, a vivid flourishing that is also a kind of waning away. Some may disagree with this assessment: they may insist that there has been no waning; that they personally read dozens of SF novels each year that are nothing short of genius; that they continue to derive enormous pleasure and meaning from prose SF; and that, far from dying, the SF novel is stronger and more alive now than it has ever been. That's fair enough. If people derive pleasure and significance from reading the—I would not deny—often brilliant prose SF being written today, good luck to them. But a more than fannish perspective is needed. I am going to suggest that the SF novel, though lively, is nowadays only a minor cultural phenomenon.

The first thing to say is that this creeping obsolescence of the SF novel (for which I am going to argue) may well be simply a function of the larger obsolescence of the novel as a whole. Critics have been confidently announcing that the novel is a moribund form of art for much of the last century. As early as the 1920s and 1930s the distinguished critic Ortega y Gasset declared:

It is erroneous to think of the novel—and I refer to the modern novel in particular—as of an endless field capable of rendering ever new forms. Rather it may be compared to a vast but finite quarry. There exist a number of possible themes for the novel. The workman in the primal hour had no trouble finding new blocks—new characters, new themes. But present-day writers face the fact that only narrow and concealed veins are left them. [Ortega y Gasset, 57–8]

UK critic Bernard Bergonzi responded to this in 1970:

At what point was the last piece of territory occupied, the last vein of the quarry exhausted? Inescapably the answer must be that it was in the decades between 1910 and 1930, in the work of Proust and Joyce, whom Moravia has referred to as ‘the gravediggers of the 19th-century novel.’ *À la recherche du temps perdu* and *Ulysses* mark the apotheosis of the realistic novel, where the minute investigation of human behaviour in all its aspects—physical, psychological and moral—is taken as far as it can go, whilst remaining within the bounds of coherence. [Bergonzi, 23]

According to Bergonzi, by the 1970s the novel had to accept the fact that it was no longer (as its name tells us it once was) defined by its newness. Novelistic responses to the fact that ‘the novel was no longer novel’ varied, in approach and in effectiveness. One attempt to inject newness into the traditional form was the, so-called, *nouveau roman*, a self-avowedly ‘new’ sort of novel that originated in France with writers such as Alain Robbe-Grillet and Michel Butor, but which was taken up by Anglophone and other writers. According to Robbe-Grillet’s manifesto *Pour un nouveau roman* (1963) the *nouveau roman* challenges the, taken for granted, assumptions of the ‘traditional novel’, conventions such as an omniscient and self-effacing narrator, coherence of narrative, believable characters with whom the reader can relate in the same ways she relates to the real people in her life, and, in general, the understanding that the novel functions as a sort of window through which ‘real life’ (in a manner of speaking) can be viewed. All these things are treated as, in effect, lies. They do not articulate the reality of modern experience, which is more alienated, more fractured and much more self-aware than this suggests. Classic *nouveaux romans* present derationated agents moving through dislocated worlds; the emphasis is on the artificiality of the fictional construction, with a highlighting of linguistic effect and a commitment to a form of aesthetic estrangement. This relatively short-lived movement nevertheless fed into a broader cultural phenomenon, which we adduce with the contested label of postmodernism, to to which we must return in a moment.

All this strikes me as very interesting from, as it were, the SF point of view. Indeed, I might wonder whether the parallels between the mainstream literary establishment and the SF world during this period aren’t alarmingly close.¹ The first thing to say is that many of the textual strategies we find in new wave science fiction are directly or indirectly derived from the *nouveau roman*—although it would not, I think, be correct to say that new wave SF is simply the SF form of the *nouveau roman*. Nevertheless, the hostility that the

mainstream literary establishment evidenced towards the *nouveau roman* finds its correlative in the hostility of the mainstream hard SF community towards new wave. Bergonzi, for instance, is very condescending about Robbe-Grillet's avant-garde injunctions to dispense with the contaminated attributes of the traditional novel of 'characters, story, atmosphere ... Robbe-Grillet shows a forceful tendency to throw out the baby with the bathwater' [Bergonzi, 33]. Bergonzi likes characters, story, atmosphere. Most readers of prose SF over the last three decades like them too, and have demanded them (with a sprinkling of techno-novelty on top) from their prose SF.

To make myself plain. It seems to me that there was another way of making the novel novel again in the last decades of the century, an alternative to the avant-garde extremism of stylistic and formal experimentation associated with the *nouveau roman*. It lay in the cross-fertilisation of fiction with modes of discourse other than the traditional humanist idioms (what Bergonzi terms the 'physical, psychological and moral' attributes of human life). By the end of the 20th century discourses of science had changed utterly from the ones with which Victorians or Edwardians would have been familiar. A properly science fiction form of the novel might have injected vivid new life into the form. As the present chapter will show, I hope, some novels were written that attempted to do this, often very well. But, speaking broadly, such hybridisation has not reinvigorated the form of the novel, either in SF or in general.

One index of this transformation is the reception of *Gravity's Rainbow* (1973), the enormous novel by American writer Thomas Pynchon. This work has a plausible claim to be the greatest SF novel of the 1970s and yet has been almost entirely ignored by SF fandom. Though lauded by academics, it is perhaps too long, complex, rebarbative and obscene ever to have enjoyed particular popular success (that it is still in print today is almost certainly because universities require their students to buy it). But more important than the general reception the novel has enjoyed is the response, or non-response, of the SF world. The two most prestigious awards in SF are the Hugo award (the premier award of SF fandom, voted for by people attending the annual SF World Convention) and the Nebula award (voted for by professional writers who are members of the Science Fiction and Fantasy Writers of America). In 1973 the Hugo went to Asimov's limp late novel *The Gods Themselves* (1972). Asimov's book did, in a sense, reflect the concerns of its day, as the energy crisis began to bite in the West. In Asimov's novel, a free source of apparently limitless energy is discovered to be draining power from an alternate universe, with terrible consequences for the alien life in that place. But the treatment of this premise is dead-eyed and pedestrian, and the book is mediocre in terms of character, style and form. The Nebula went to Arthur C Clarke's *Rendezvous with Rama* (1973), in which a mysterious alien spacecraft of considerable size flies into the solar system and then flies away again, allowing some astronauts just enough time to encounter indigenous life and wonder about the architects of the craft.² Because of the peculiarities of the voting rubrics, and the fact that mass-market paperbacks (issued sometimes a year later) often generate the fan vote that wins

Hugos, it is possible for one novel to win the Nebula one year and the Hugo the following: *The Gods Themselves* and *Rendezvous with Rama* did precisely this, the former text winning the 1972 Nebula and the latter the 1974 Hugo.

It cannot be maintained that either of these novels represented the best SF novel of the year. Rather, they were novels by writers with major reputations, sustained by very large pre-existing fanbases. As fiction they were deemed *good enough*. It is, of course, in the nature of fan communities that they prize a sometimes doggish loyalty to their tribal shibboleths over a broader view of artistic merit: but it is, for instance, inconceivable that, had *The Gods Themselves* been published by a first-time author, it would have won either award.

In 1998 Jonathan Lethem wrote an article for *Village Voice* called, polemically enough, 'The Squandered Promise of Science Fiction'. It starts:

In 1973 Thomas Pynchon's *Gravity's Rainbow* was awarded the Nebula, the highest honor available in the field once known as 'science fiction'—a term now mostly forgotten.

Sorry, just dreaming. Though *Gravity's Rainbow* really was nominated for the 1973 Nebula, it was passed over for Arthur C. Clarke's *Rendezvous With Rama*, which commentator Carter Scholz rightly deemed "less a novel than a schematic diagram in prose." Pynchon's nomination now stands as a hidden tombstone marking the death of the hope that science fiction was about to merge with the mainstream. [Lethem]

Lethem is not alone in thinking that the true significance of the 1973 awards was that they were symptomatic of the SF community turning decidedly inwards, eschewing not only the wider literary world but also the sorts of more experimental hybrid SF that had come out of the new wave. SF fandom from this point on tended—not exclusively, but largely—to judge its preferred SF by a restrictive and self-fulfilling rubric. In some senses this rubric was more accommodating than it had been hitherto, for instance, an increasing number of fans were female, and women writers were more often praised, awarded prizes, and their cause adopted than had been the case. But in other senses it provided a Procrustean bed. One of the things that happened in the 1980s is that some of the most talented writers of prose SF distanced themselves from genre fiction and worked instead as, or were promoted as, mainstream or non-SF authors: Michael Moorcock, J G Ballard, Christopher Priest, Margaret Atwood and many others. That these, we can be frank, irrelevant statements of personal affiliation were taken as monstrous betrayals by many outraged fans is one index to the partisanship that increasingly afflicted this world.

I earlier argued that, although sometimes sneered at, SF fandom is in fact (as Henry Jenkins has shown) a tremendously energetic, creative, passionate and significant phenomenon; a feature of popular culture itself worthy of significant study. This continues to be the case. But at the same time, SF fandom has—in the bulk—manifested a decidedly small-c conservative taste in fiction. SF fans may prize originality of *premise*, and fans often like books that engage with the biggest questions that dramatise the sheer enormity of the universe, that evoke

a sense of wonder, that make the head spin. But at the same time, the majority of fans prefer these big ideas to be actualised in novels established on (to use Bergonzi's phrase again) characters, story, atmosphere. What I mean by this is that in the books SF fandom acclaimed during the 1980s and 1990s there is an unmistakable bias towards: (a) characters with whom readers can identify and empathise, whom they like and about whom they care; (b) a story which provides the satisfactions (set-up, development and denouement, with all loose-ends tied up) of a 19th-century novel, and which doesn't muck-about with chronology or narration; and (c) a transparent and serviceable prose style, rather than one that experiments with language, or affects too 'literary' an idiom. Most of the novels discussed in the present chapter test positive for one or two of a, b and c, and many exhibit all three. It is not, of course, that there is anything wrong with such unadventurous tastes as such. But the effect of the shaping power of this sub-culture has been a large number of novels and stories that treat exciting and original premises in dowdy, old-fashioned, limiting and two-dimensional fictional form. The SF novel, by and large, is no longer novel; or more strictly, SF novels that attempt novelty are often ignored or disdained by the majority of SF fans.

Pynchon's *Gravity's Rainbow*, on the other hand, is a novel of brilliant, triumphant and often revolting newness. Its characters, though fascinating, are often grotesques, amoral or bizarre. Its plot is so peripatetic as to appear to the casual glance altogether formless, although in fact the myriad wonders of the book are organised according to a structuring thematic principle (the parabola of ballistic flight) rather than to the hidebound conventions of beginning, middle, end. And the style is one of the wonders of contemporary anglophone writing; endlessly inventive, baffling, obscene and brilliant, shifting registers and points-of-view continually, and managing somehow to adapt itself to the encyclopaedic gamut of the novel. *Gravity's Rainbow* is set during the last stages of World War II and its immediate aftermath. Tyrone Slothrop, an American officer stationed in London, goes on a peripatetic quest across Europe. It seems that mapping Slothrop's sexual encounters produces a map of where the V2 rockets are going to fall. The rocket stands at the symbolic core of the novel. The fact that V2s travelled supersonically—and that, therefore, this ordnance would explode their targets first, and only *after* that would people hear them coming—stands for Pynchon as a symptom of a larger derangement of cause and effect in the world of the novel. The arc of the rocket's flight, from which the book takes its title also governs the form of the novel. Indeed the ambition of the book is so enormous, and so fully achieved, that the rocket becomes a prodigiously expressive symbol. In Richard Poirier's words, 'the central character is the rocket itself'; and the 'secret' with which the book is concerned 'is that sex, love, life, death have all been fused into the Rocket's assembly and into its final trajectory' [Poirier, 15].

One thing the novel does, very powerfully, is explore the dialectic of good/evil embodied by that 'rocket', the same rocket, essentially, that flies through SF's interplanetary dreams. The balance is between what one character calls 'a good rocket to take us to the stars, an evil rocket for the World's suicide, the

two perpetually in struggle' [Pynchon, 727]. These are ethical questions of the largest scale. Is the American achievement in sending astronauts (by rocket) to walk on the Moon compromised by the fact that their rocket programme drew heavily on Nazi research instituted for the V2 programme under the Nazi Wernher von Braun, who was later willingly appropriated by the Americans to head their own space programme? That there may be an ineluctable darkness at the heart of the bright vision of spaceflight, something tied to the very mechanism of the flight itself, is nowhere else so dazzlingly or brilliantly explored. It bends the linear flight-line of golden age SF into something approximating the trope of recirculation characteristic of new wave.

SF FANDOM

The SF fan community has become very effective at marshalling written literature within the genre. There are, every year, many conferences at which fans gather to hear authors speak, to discuss the merits of various books amongst themselves and to buy new and rare SF items from dealers. In addition to the premier SF awards (the Hugo, Nebula, John Campbell Award, Philip K. Dick Award and in Britain the Arthur C Clarke, BSFA and Kitschies) there are over ninety more specialist SF awards, some voted for by fans, some awarded by panels of experts, most given annually—there are so many, indeed (more than any other literary genre by a factor of twenty) that it becomes quite hard for an author of serious SF not to win one at some point during his or her career.³ Over the period under consideration a great many amateur fan magazines (fanzines) were published, similarly discussing in great detail the books being published in the genre. Although by nature transitory, some of these publications are still alive today. Some embody productive values high enough and enjoy a circulation wide enough to be known as semiprozines. Since the advent of the internet, the exchange of opinion and judgement amongst the worldwide community of SF fans has become much easier. I have no idea how many SF websites are now in existence, and do not have time to attempt to count them; it is certainly in the thousands, and the best of such sites contain some of the best criticism (usually in the form of reviews and essays) available on the genre. This situation means that a large, eager, intelligent and opinionated audience awaits the publication of new SF fiction; and that such novels will almost certainly be reviewed widely—this is not true of mainstream fiction, where novels are quite often not reviewed at all. SF fans are very often articulate and knowledgeable; more knowledgeable, sometimes, than salaried academics studying the genre, such as myself (although I am also, as it happens, a fan). All in all, the size and vigour of the fan community is such that it now represents a very significant proportion of the SF world itself, which is reflected in the fact that some SF awards, such as the Hugo, give an annual award for fan writing. Histories of SF fandom have been published by various interested parties.⁴ Latterly, the Hugos have become the battleground for what we may as well call the fight for the genre's ideological soul, symptomatic, whatever one's political allegiance, of a large population of people who care passionately about science fiction, one way or another.

It is partly because publishers know that they can rely on this body of fans to buy new SF fiction, and partly too because the fans work so hard at disseminating their appreciation of the genre, that more SF novels are published annually now than at any time in history. Of course, a fair proportion of this output is schlock, and many of the books are clichéd, merely conventional or just bad. But a great many good, and some masterful, SF novels are published every single year. We might deduce from this that from the late 1970s to the present, SF prose fiction has been in a state of rude health, and has been getting consistently healthier.

But this would be an erroneous deduction. Within the fan community there is a sometimes overenthusiastic endorsement of pet authors, and fans too easily trade in the language of the classic—to the effect that ‘such-and-such a title will live forever in the annals of world literature’. There is a broad current of overcompensation in such claims; since it is a tenet of faith in the world of fans that ‘they’—whoever they are (the literary establishment, let us say)—are deliberately ignoring or suppressing science fiction; that SF has been hemmed into a ghetto by a hostile world; that no SF author would ‘be allowed’ to win the Pulitzer, Booker or Nobel literary prizes; and so on. It seems paradoxical that a mode of literature that is enjoying such rude health should also be prey to such delusions of persecution. The siege mentality isn’t a very gracious or helpful thing. We understand, of course, that readers want to champion books they like, and some SF fans have liked some books very much indeed; but the aggressive hyper-assertiveness of many SF fans is counterproductive. You don’t persuade people to like the things you like by hectoring them. More, it is not clear why it matters so much to SF fans that other people sometimes don’t like the things they like. The SF fan community is, I think, the largest and most active literary community in the world, outside the artificially maintained factory-lines of school/college literature teaching. Each year it has hundreds of excellent books to chew over; readings to attend; conferences to congregate at; online chatrooms to engage with. It is the very strength of SF fandom that renders most of the complaints of SF fandom irrelevant.

There is another consideration, which applies particularly to written SF in the 1980s. It is hard to be objective about books that have had an impact on one’s own life, even though those same books may have had very little broader cultural impact. Moreover, as Peter Nicholls wittily puts it, it might be said that ‘the Golden Age of SF is 14’ [Clute and Nicholls, 506]. Critics who grew up reading the SF of the 1970s and 1980s (I am one) will tend to look more rosilily upon the fiction of that period than might otherwise be the case.

Still, the fact of the matter is that very few SF novels published in the 1980s are living works of literature today. Even titles that enjoyed considerable popularity, up to and including bestseller status, are now, most of them, irretrievably dated and gone. For example, Julian May enjoyed a widespread popularity and enviable sales with her *Saga of the Pliocene Exiles*, four chunky novels detailing the adventures of time travellers from our own near-future who settle in pre-historic Europe [*The Many-Colored Land* (1981); *The Golden Torc* (1982); *The Nonborn King* (1983); *The Adversary* (1984)]. These books are all examples of

highly enjoyable tale-telling, a proficient mix of future technology and magical human ability, with a well-structured plot that is addictively readable. Millions read it in its day. But the *Saga* is no longer a current novel. In a sense it reflects no discredit on this book or this author that this is the case; May's work did its job. But like an overwhelming majority of prose SF from this decade, it has become an element in the general mulch of the past.

My argument is that during the 1980s the dominant mode of SF altered from written to visual paradigms, towards particularly cinema, TV and graphic novels. This is the root explanation, I think, for the relative scarcity of SF prose from this period that is still alive. But I am not suggesting that 1980s and 1990s SF is a totally dead zone in the critical history of the genre, like an overexuberant jungle whose fecundity utterly stifled itself. Clearly some books from the 1980s are still alive; books including (to cite only the unarguable masterpieces): Gene Wolfe's *The Book of the New Sun* (1980–3); Russell Hoban's *Riddley Walker* (1980); William Gibson's *Neuromancer* (1984—a book which, quite apart from its own merits, founded a new sub-genre called cyberpunk); Margaret Atwood's *The Handmaid's Tale* (1985); Orson Scott Card's *Ender's Game* (1985); Iain M Banks' Culture novels, beginning with *Consider Phlebas* (1987); Sheri Tepper's *The Gate to Women's Country* (1988) and *Grass* (1989); and possibly Dan Simmons' *Hyperion* (1989). These works are discussed below, in as much detail as space allows. But many other titles, even some highly successful in their day, have been squeezed out. From inside the world of SF fandom it seemed as if novel *x* or novel *y* was going to change the world. Almost always it did not.

SF PROSE FICTION OF THE 1980S

The success of *Star Wars* (1977) percolated through into fiction as well as influencing film. A great many new readers were drawn to the genre, looking for *Star Wars*-esque adventures to read, and publishers supplied their needs. By 1989 *Locus* magazine was reporting a 50% rise in the number of SF titles being published annually since 1980 [Clute, *Science Fiction*, 87]. Indeed the majority of SF published during the decade was 'commercial' in this sense, and most of that tended to look back to the formats and conventions of golden age SF (to the delight of many fans, for whom such SF represented the acme of the genre) rather than building on the aesthetic advances of the new wave. That many of these books were politically right-wing merely reflected a widespread political shift, the dominance of Reagan's scorched-earth Republicanism in the USA and Thatcher's monetarist Conservatism in the UK.

Larry Niven and Jerry Pournelle collaborated on a number of blockbusters, including the disaster novel *Lucifer's Hammer* (1977), about Earth's attempts to avoid a massive asteroid collision, *Oath of Fealty* (1981), in which wise auto-crats crush attack by idiotic ecologists and other liberals, and most notably *Footfall* (1985). This last book, in Damien Broderick's words 'captured the

Reagan 1980s even more vividly than the movie *Rambo II* [Broderick, 83]. Aliens who physically resemble small elephants invade Earth. They are communal beings, ciphers for the Communist threat that right-wing ideologues still bruited as the largest danger facing the Free World at that time (wrongly, as Communism was in fact on the edge of collapse). Earth retaliates and human grit, determination and fighting spirit crush the invaders. The novel is so gung-ho as to approach self-parody, although its large and generally sympathetic audience read its ideological simplifications and obfuscations as actual insights into the world. Much less crude, although still informed by a right-wing Libertarian ideology was the post-Heinleinian writing of John Varley. Varley began the eighties with a very successful trilogy of novels *Titan* (1979), *Wizard* (1980) and *Demon* (1984). Near-future exploration discovers Gaea, a spoked, wheel-shaped space habitat of prodigious size that is also a sentient being, orbiting Saturn. The crew crash into the outside of this artefact and are absorbed through the wall into the inside, some of them undergoing profound changes in the process. The inside, they discover, is a varied and colourful series of interlocking ecologies, all generated by Gaea herself and many of them adapted from Earth's popular culture (which Gaea has been monitoring). Some of these work better than others; the intelligent Centaurs, with their complex sexual protocols (they possess both human and equine genitals, and Varley spares us none of the detail) are perhaps given too much space in the story. But the point in *Demon* where Gaea herself, now mad, takes the form of a Brobdingnagian-proportioned Marilyn Monroe achieves a powerful weirdness that almost substitutes for satirical punch. The Moon colony of *Steel Beach* (1992) is a Heinleinian novel (strictly speaking as some of the colonizers have modelled themselves on Heinlein's writings) and contains many interesting elements, but the book as a whole does not escape the claustrophobic solipsism of a talented writer looking back to previous novels rather than outward to the cosmos. This solipsism is not exactly a failing in Varley's work, rather it reflects the increasingly clogged and constipated nature of the genre, which in turn was a function of its success. Keeping the SF novel novel (to use Bergonzi's terms) means finding new premises, new technology, and new textual forms and strategies. But increasingly SF writers were recycling older premises and technologies. This was not a plagiarism, but rather a function of a new cultural logic, usually indexed with the shorthand term postmodernism. Varley's most successful short story symbolically articulates precisely this turning-in: 'The Persistence of Vision' (1978), a clever and moving updating of Wells' story 'The Kingdom of the Blind', ends with a transcendental involution of the narrator away from his external senses into a hinted-at bliss.

American writer Greg Bear published his first story in 1967, but it was not until the 1980s that he began to make a name for himself. *Hegira* (1979) is a striking although ultimately unsatisfactory novel, set on a vast hollow world that is home to many species. Barely 200 pages long it reads like the condensed version of a much longer novel. More effective is *Beyond Heaven's River* (1980), which treats a standard SF premise (of mysterious, godlike aliens using humans

as pawns in their games) with considerable power and originality. Kawashita, a pilot in the Japanese airforce during World War II is plucked from certain death by an alien spacecraft. He spends centuries living in an artificial environment on a distant world acting out scenes from Japan's history. Eventually he is rescued by star-travelling humanity, and faces the dual challenge of reintegrating into a human world and trying to understand who abducted him and for what alien reason. Again, though a small book, this is prolific with big ideas (probability spheres, living oceans, hallucinogenic pollen, million-year histories dropped into a paragraph and so on). But there is something even older than golden age SF about the aesthetic ambition. Bear dedicates the novel to the spirit of Joseph Conrad, and it's not an empty gesture. Worthy of Conrad is the expertly realised representation of an individual, a sailor from the East, encountering degrees of strangeness that spiral up and beyond all expectations. Bear enjoyed greater success with *Blood Music* (1985), a wonderfully spooky tale in which nanotechnology assimilates all of humanity (almost) into a global-sized, living, sentient mass of sludge. The trillions upon trillions of molecule-sized computers of which this is composed, each of them intelligent, eventually creates a noosphere of such thinking density that the Earth itself passes into a new dimension. Like *Childhood's End*, with which the novel has certain things in common, this is a book wholly implicated in the SF dialectic, expressing itself through a rigorously applied scientific framework yet shading into the mystical (magic) transcendence at the end. Bear enjoyed even more success with the more conventional space opera of *Eon* (1985) and its sequel *Eternity* (1988), with hollowed-out asteroids travelling through space and then time; but his best book is certainly *Queen of Angels* (1990), a novel of genuine richness and depth. The depth isn't immediately evident; the showy, well-handled murder plotline keeps one reading, the many futuristic and mind-tickling ideas keep popping up to make one think. But at the core of this book is an exploration of the nature of consciousness as profound as any in literature. Martin Burke is a psychologist who investigates the motivations for a murder in a society, using nanotechnology to explore the Country of the Mind. AXIS is a sophisticated computer that has travelled to a distant planet. The two journeys of exploration are paralleled, but in their different ways they prove relative dead-ends. Bear's master stroke is surreptitiously to delineate the shift of another sophisticated computer, JILL, from a linear intelligence based on processing data to a self-aware sentient intelligence that is a genuine consciousness. Overall this novel embodies exactly what prose SF can do well—philosophical investigation into the mystery of consciousness expressed in popular and accessible form.

American writer C J Cherryh has a large fanbase, and writes both fantasy and SF, sometimes combining the two. Her Arthurian romance *Port Eternity* (1982), for instance, is set aboard a stranded spaceship in which androids (programmed to act out Arthurian personalities) start to assume the roles for real. It is a tightly written, expert novel and may be her best, but it is not typical of her output. Instead her SF fame derives from her many, very lengthy space operas, which she writes prolifically and which often have a texture of expanded

polystyrene. *Downbelow Station* (1981), which won the Hugo for best novel, throws together a great many characters, species, plots and ideas (mostly venerable SF ideas) into a future universe without faster than light travel, in which spaceships are home to generation after generation of increasingly feudal, bickering space families. A dozen or so of these titles, brought together under the collective moniker the Merchanter novels, connect with another dozen or so Union-Alliance novels, set in the same imagined future galaxy. The Chanur Saga brings together an alien-human encounter centred series of novels, which also fits into the larger future history Cherryh is developing. Everything she has written, it sometimes seems, fits together into a single ambitious future history, reminiscent of Niven or Heinlein. The zenith (or nadir, depending on your view) of this love for largeness is *Cyteen* (1988), a huge ziggurat of a novel, well over a thousand pages of flappedoodle about clones, androids and humans. Books like this bear witness to the general trend, which became increasingly prominent in the 1980s and 1990s, for more and more pages, thicker and thicker spines, as if quality can be measured primarily in terms of quantity. But the only formal innovation in Cherryh's books is scalar: bigger and bigger, plots piled on plots, myriad characters. Undeniably the fact that she is able to construct on such a scale, and to link each monumental block into the larger edifice of her future history, is evidence of considerable technical skill. But her prose style is greily enervating, her characterisation old-fashioned, and there is little to the novels except the various stories. A lifetime is too short, and eternity scarcely long enough, to read the total output of C J Cherryh.

Much more interesting is Brian Aldiss' mid-career leviathan, *Helliconia*, published as *Helliconia Spring* (1981), *Helliconia Summer* (1983) and *Helliconia Winter* (1985). When these appeared they were treated as one of the great events of 1980s SF publishing; a masterful, absorbing, complex and open-ended process of world-building. That they seem to have dropped off the radar lately may owe more to the general undervaluing of Aldiss (as discussed above, one of the handful of genuinely significant 20th-century writers of SF) rather than a reflection upon their own merits. Aldiss' *Helliconia* is a planet whose eccentric orbit around several stars gives it mini-seasons (like on Earth) and a very long Great Year in which the whole climate shifts as the individual volume titles indicate. Humans and aliens cohabit the world, and civilisation as a whole grows from hunter-gatherer to something analogous to the late 19th century. As the story grows we discover that the population of an enervated future Earth is watching the events on *Helliconia*, beamed back to them via myriad remotes. When I say that this huge novel is a masterpiece I hope I mean more than that it had a juggernaut effect on my own sensibilities when I read it in my late teens. I think there is something genuinely classic about it. Moreover the novel finds interesting ways of expressing the dialectic between materialism and mysticism. On the one hand the myriad details are rendered with an extraordinary and vivid sense of verisimilitude, as actual possibilities (James Kneale and Rob Kitchin note that for this novel 'Aldiss took advice from academics, including Jack Cohen, a reproductive biologist who has acted as "consultant"

to several SF authors who wanted plausible extraterrestrial life-forms' [Kneale and Kitchin, 10–11]). On the other hand Helliconia possesses a dimension of soul, or spirit (which Aldiss does not—in this dramatisation—give the Earth), an afterlife for the departed and so on.

But the complexity and innovation (subtle but palpable) of Aldiss' big 1980s novel are not characteristic of the sub-genre of big 80s SF novels in general. Most marry innovative premise to traditional backward-looking or reactionary models of plotting and characterisation, producing novels that rarely rise above the unexceptionable. There are, for instance, many admirers of the writing of David Brin but nobody could claim that he has made any formal innovation of advance in the technical aesthetics of fiction. The many fat volumes of his Uplift sequence [*Sundiver* (1980), *Startide Rising* (1983), *The Uplift War* (1987), *Brightness Reef* (1995), *Infinity's Shore* (1996), *Heaven's Reach* (1998)] chug along as if powered by two-stroke engines, throwing humans, genetically-engineered intelligent dolphins and chimpanzees, and many alien species together in a plot built around the premise that species can be *uplifted* to higher states of consciousness, a process begun by the now-vanished Progenitors. Reading these novels is a perfectly reasonable way of passing the time, and the scale and invention is large. But they are not especially mark-worthy books. John Barnes achieved something interesting with his second novel, *Sin of Origin* (1987)—a book that, in a sense, reverts to the 17th-century theological origins of SF itself (missionaries encounter an alien lifeform that lives as three-part symbiosis, and map their own understanding of the Holy Trinity onto what they see, converting the aliens but with malign results).

There have been many post-apocalyptic SF novels, but there are none like *Riddley Walker* (1980), by American author Russell Hoban. This is more than just a matter of the unusual style in which it is written, a distorted and pared-down idiolect spoken by the surviving, more or less savage inhabitants of post-apocalyptic Kent—though this *is* brilliantly done, consistently estranging, poetic, vivid and visceral. But it would be a mistake to reduce this novel to its unconventional orthography because, hidden within the style—like the Littl Shynin Man the Addom hidden in the heart of the stone of the wood—is a brilliant fable about destruction, survival and the compromised, complicated ways rebirth happens. For Hoban, the ring ditch encircling Cambry, marking Canterbury as the impact site of the atomic detonation that lead to his futuristic desolated landscape, marks a personal and indeed mystic-religious truth rather than a realist assessment of the likelihood of ICBMs being targeted on that non-military spot. He spoke many times, in interviews and elsewhere, of the impact of his first visit to Canterbury Cathedral in 1974. 'As soon as we came into the nave,' he recalled in 1998, 'I could feel the action of the place, and by the time we reached The Legend of St Eustace I was ready for something to happen'.

As I stood before the picture there came to me the idea of desolate England thousands of years after the destruction of civilisation in a nuclear war; people would be living at an Iron Age level of technology and such government as there was would make its policies known through itinerant puppeteers. I know it sounds strange but that's how it was. [Hoban, xiii]

We feel our way into Hoban's world, testing its 'rightness' on a gut level. It's only half way through the novel that we discover from Abel Goodparley that 'After Bad Time dint no 1 write down no year count for a long time'; and that since the count resumed 'its come to 2347 o.c. which means Our Count'. When it is encountered on inscriptions, AD is believed to stand, with grim appropriateness, for All Done. We can take this more than two-millennia timescale with a pinch of salt. The world of the novel feels much more near-future than that. The language in which *Riddley Walker* is written is a wonderful thing, but it is not a systematic attempt at speculating how language might change over 2,300 years—and indeed, lacking the linguistic sheet-anchors of written and recorded versions of how people speak, English would certainly evolve over twenty-three centuries into something *far* less recognisable even than Riddley's peculiar speak. Rather, I think, Hoban involves this vanishingly distant future date as a way of folding past and future together: two-thousand-and-some years *ago* takes us back before the birth of Christ, into an un-saved world; and two-thousand-and-some years *forwards* shunts characters, and reader, into a primitive land wholly defined by its fall. Critics sometimes compare *Riddley Walker* with an earlier novel written in a strangely wrenched yet poetically expressive version of English, Anthony Burgess' *A Clockwork Orange* (1962). But actually it's not a very useful comparison. Burgess, fascinated all his life with languages and practical linguistics, created the idiom of *Clockwork Orange* as a carefully worked-through thought-experiment based on the premise of a fusion of English, Russian and youth slang. Hoban's novel has no such ambitions. Almost without exception everything in this novel is recognisably 20th-century Estuary English, although written with a deliberately disorienting unconventional orthography—or heterography. Particularly when read aloud it resolves itself into an exercise in dialect fiction more like Faulkner's Southern States flow, or Macdiarmid's synthetic Scots; or to choose an example more topographically relevant (though it postdates Hoban's book), like the working-class London speech of Graham Swift's *Last Orders* (1996). Or perhaps an even better comparison would be Joyce's *Finnegans Wake* (1939), that gigantic exercise in a confected language of English/Irish punning, in which every word has double- or treble-meanings folded into it. Hoban's scale is more manageable, and there is more of a narrative through line, but he expresses a Joycean fascination with the semantic connexions. The 'soar vivers' are survivors; those who live (*vive*) a sore, sorry existence; or perhaps those who have 'soared' above destruction and death. The 'Pry Mincer' is both a figure of respectable authority, that prime minister, and a more sinister figure who pries into your life, and who has the power to mince you up. A motion of 'no kind of fents' externalises no confidence in the complete absence of protective fencing—a crucial feature of settlements in Riddley's time, when packs of man-killing dogs roam the waste lands. 'Sharna Pax' means 'sharpen up the axe', readying for war by speaking *pax*, or peace. Or more substantively, to return to the question of the Canterbury Cathedral wall-painting which initially sparked Hoban's imagination, there is Eusa, a lynchpin figure for the richly imagined future mythology of Hoban's world. As a name Eusa connects Saint Eustace and USA; and the Littl Shynin Man the Addom, torn into two pieces by Eusa, is a folk memory of the splitting of the atom by US

scientists, the act that enabled the creation of the nuclear weapons that wrecked Riddley's world. He is also a version of the Biblical Adam (in terms of his fall) and Christ, the New Adam (in terms of his powers of redemption). His name is particularly resonant, for in the small size of his littleness is his light (lit, brighter, we remember, than a thousand suns); just as that very shining embodies an elusive shyness that is central to his being. This language does not feel new minted, in the way Burgess' Nadsat does. On the contrary, it feels both old and common—vulgar in a good way. It is closer to East Kent slang than anything else and it royally embodies what Baudelaire once described as 'the immense profundity of thought contained in commonplace turns of phrase—holes burrowed by generations of ants'. The temple at the heart of *Riddley Walker*, Canterbury Cathedral, is also a forest of stone. The shining of the Littl Shynin Man the Addom brings illumination to Riddley in the 12th chapter, when he sees artificial light for the first time.

Id all ways usit the word *shyning* same as any I myt. The sun is shyning or the moon is shyning. Youwl see a shyning on the water or a wommans hair. When you talk of the Littl Shyning Man its jus the middl word of what hes callit there aint no real meaning to it. Suddn when I seen the shyning of those broakin machines I begun to get some idear of the shyning of the Littl Man. Tears begun streaming down my face and my froat akit.

Lissener hispert, 'Whats the matter?'

I hispert back, 'O what we ben! And what we come to!' [Hoban, 99–100]

The religious mystery of existence is not continuity, Hoban is saying, it is fall. The world is 'crookit', as hunched as Punch's back, and this is the timber with which we must now build ('keap in membermen,' Riddley advises us, 'that cleverness what made us crookit'). The novel's powerful, decayed language, its blasted post-apocalyptic landscape, its vivid portrayals of violence and corruption, all embody this drama of fall. But there is hope too; and it comes through living through the fallness of our fall. 'Its not the sturgling for Power that's where the Power is,' Riddley realises, late in the novel. 'Its in jus letting your self be where it is.' To enter the world of *Riddley Walker* is to be jolted into a new way of reading—and seeing; as much an unlearning as learning.

GENE WOLFE'S *THE BOOK OF THE NEW SUN* (1980–3) AND ITS SEQUELS

For many critics, American writer Gene Wolfe is the most important writer of fiction, in or out of the genre, of the last few decades. It is conceivable that such critics are right in this judgment. By the 1990s it had become clear that, a few short stories and singleton novels aside, the prolific Wolfe was actually engaged in writing one single enormous novel, rather like Proust—with whom he has occasionally, although erroneously, been compared.⁵ *The Book of the New Sun* [which first appeared as four separate volumes: *The Shadow of the*

Torturer (1980), *The Claw of the Conciliator* (1981), *The Sword of the Lictor* (1982) and *The Citadel of the Autarch* (1983)] is set on Urth, a very far-future version of Earth where the sun is dying, and human society has bedded down into intricate quasi-medieval structures, leavened with occasional touches of high technology (space flight, time travel), but otherwise like a medievalised fantasy realm. Severian, the protagonist, an apprentice torturer, leaves the city in which he has been trained to trek across the surface of Urth, encountering many people and having a variety of strange adventures. He renounces his calling and travels further, eventually becoming the Autarch, or ruler, of Urth. A single-volume sequel to *The Book of the New Sun*, *The Urth of the New Sun* (1987) takes Severian into space in search of the streaming white hole, which will be used to revivify the dying sun of Earth. This miniature summary does not even come close to capturing the baroque complexity of Wolfe's novels, its many interlocking narratives and scores of characters, its shifts of tone and emphasis, sometimes written in prose, sometimes in dramatic form.

The Book of the New Sun links obliquely but certainly with what became Wolfe's next major project, *The Book of the Long Sun* [comprising *Nightside of the Long Sun* (1993); *Lake of the Long Sun* (1994); *Caldé of the Long Sun* (1994); *Exodus from the Long Sun* (1996)]. The hero of this large work is a priest (very Catholic in style although actually in the service of various pagan deities) called Patera Silk, who lives in his modest way aboard a colossal Generation Starship called the *Whorl*, a name which sounds more like World if articulated in certain varieties of American accent. This ship and its many inhabitants have been so long upon their journey that many people have forgotten that it is a ship at all—a venerable SF idea, but treated with a new seriousness and thoroughness as an essentially spiritual fact by Wolfe. Wolfe's next trilogy followed the *Long Sun* story directly. *The Book of the Short Sun* [*On Blue's Waters* (1999); *In Green's Jungles* (2000); *Return to the Whorl* (2001)] is mostly set on the two planets, Blue and Green, which were the destination for the *Long Sun*'s starships, and where it has long been orbiting. Silk and his family are caught up in new adventures, travelling between the two worlds and returning, periodically, to the *Whorl*.

Stylistically Wolfe is a talented writer, although some find his deliberately mannered and mildly archaic idiom off-putting, and his more recent books perhaps rely too greatly on overlong and expository dialogue between characters. But his great achievement is formal, the creation of a text that construes narrative, character and atmosphere into the ambiguities and complexities of which they are made. Little is straightforward in a Wolfe novel; books can be reread and re-re-read to reveal new perspectives. Like a *nouveau romancier*, or a postmodernist (although Wolfe—a practicing and conservative Catholic—might be surprised to hear himself called postmodern) he deconstructs our assumptions about narrative closure, about the description and working of character and about meaning in a series of challenging ways. Although his books are all religious, none of them resolve into straightforward allegory, or even symbolism, although all of them are replete with Christian symbols: roses, fishes, the sun, trinities and the like. But the action of beginning to decipher

the symbols creates more rather than less textual insecurity. The effect of these three complex works is perhaps to baffle the reader used to simpler fare.

Because of this, exegesis can become a fetish with fans of Wolfe.⁶ The watchword for such fans is that his lengthy novels must not only be read but *reread*, often several times, before their beauties and depths become apparent—Wolphiles' insistence on this point is sometimes folded into a more generalised grumpiness about the hectic pace of modern living and the virtues of close, careful attentiveness to the text. This is a reasonable if old-fashioned view to hold. But it is also worth noting that, of all the major writers of SF alive today, Wolfe is the one most thoroughly to have divided the SF fanbase. Many fans have never read him, or have tried to read *New Sun* but have given up. Internet bookshops such as amazon.com, which permit readers to post their reactions to the books they have bought by grading them from one to five stars, provide interesting if partial snapshots of general responses to works. Wolfe's books draw extravagantly praising five-star assessments and extravagant dismissal, hostility and the lowest rankings in about equal measure. But before Wolphiles simply dismiss the latter reactions as bred of ignorance and a pig-headed resistance to the beautiful complexities of a deliberately difficult writer, they need to confront the fact that some SF critics of great distinction have shared this dislike. 'I cannot stand postmodernists', announces Darko Suvin, adding:

I cannot follow the semantic and diegetic contortions of Gene Wolfe, fleeing the Master Narrative ... I shamelessly confess I prefer a good story by Heinlein, Cherryh or Gwyneth Jones to most philosophies, since they show me worlds with actions, resistances and psychozoa for whom both mean something. [Suvin, 241]

Contortions is a little unfair; although his books *are* complex, serpentine, and cat's-cradle-like it gives the wrong impression of Wolfe (always an elegant, controlled writer) to call him contorted. But Suvin gives voice to a widespread suspicion, not that Wolfe is a bad writer exactly (Suvin concedes that there are 'some impressive facets to his major series') but that the kind of writing he practises is a wrong turn in the development of prose SF. We are back, in other words, to mourning the loss of Bergonzi's 19th-century criteria of characters, story, atmosphere.

My sense is that Wolfe has more to fear from some of his enthusiasts than his opponents. It is fair enough, if one enjoys puzzles and games, to treat Wolfe's fiction as a gigantic textual box of puzzles and games. But to read only ludically is to miss the main point of Wolfe's writing, which is always serious. Playfully serious sounds merely oxymoronic, but comes close to the truth of it. His work is engaged in a genuinely profound excavation of the core dialectic of SF, the relationship between the material and the spiritual. *The Book of the New Sun* is very finely constructed to balance precisely on this knife-edge: it can be read throughout as heroic fantasy (in which matters are explicable in terms of magic); or as science fiction (in which the various wonders have a technical, material explanation); and is as often categorised with one genre as

the other. The point of this is not the naming itself; rather, Wolfe's aesthetic is concerned with these matters because they relate to the world as a genuine problematic. Many of the things humanity used, formerly, to attribute to gods can now be explained in ways that leave no space for the divine. If the search is pushed as far as it can go, outwards to the stars and throughout time, do we come to a *pou sto*, an ultimate standing-place that we must concede to be God? Wolfe's dramas usually dramatise this quest, with many creatures that initially appear to be gods revealed later to be technological artefacts. There are many blind alleys on this quest, much misdirection, and the crucial points often appear minor, easily ignored, on first view. The involutions, and evolutions, of this search act as a template for Wolfe's plotting. The conclusion that Wolfe comes to is that there is indeed an Increate, or Outsider, whom we might call God. 'Once I believed you three were gods,' says Severian to a number of appearing entities, 'and then that the Hierarchs were still greater gods ... But only the Increate is God, kindling reality and blowing it out. All the rest of us, even Tzadkiel, can only wield the forces he's created' [Wolfe, *Urth of the New Sun*, 353]. This rather conventional monotheism is even more explicit in the *Long Sun* books, where the gods worshipped aboard the *Whorl* are early on revealed to be the simulated personalities of long-dead aristocrats preserved in a mainframe database, occasionally appearing to the populace through view-screens called Sacred Windows. The protagonist Patera Silk is a priest of these gods, devoted to the truth, celibate, absolutely dedicated to making the correct moral choices in a complex and changing world. Indeed he doesn't altogether avoid the charge of priggishness (although he is prepared to steal, or even kill, if he believes it serves a higher purpose). During the course of the text Silk comes to understand that the gods he has served and thought good are not gods, and are not particularly good; although that loss of faith is compensated for by the apprehension of the greater God outside the Whorl. Indeed, rather boldly, Wolfe begins this lengthy novel with a moment of this divine revelation that only becomes comprehensible after the reader has read a long way into the book. The first sentence of *Nightside of the Long Sun* is 'Enlightenment came to Patera Silk on the ball court; nothing could ever be the same after that'. We are also told that 'few of these hidden things made sense, nor did they wait upon one another' [Wolfe, *Nightside*, 9].

The *Book of the Long Sun* is about revelation. On the one hand, its starship-travelling characters who have unthinkingly assumed that their destination is a long way ahead of them realise that they have in fact arrived, and have been at that destination for a long time. But more important, in a way, is the enlightenment that Patera Silk experiences right at the beginning, which he describes not as a sudden realisation but as a recognition of something he had long known: 'it was as though someone who had always been behind him and standing (as it were) at both his shoulders had, after so many years of pregnant silence, begun to whisper in both his ears' [Wolfe, *Nightside*, 9]. That someone is the Outsider, also called Ah Lah. It may be that this more direct introduction of Wolfe's own ecumenical God into the narrative unbalances the whole.

Long Sun, although marvellous, is a lesser achievement than *New Sun*, in part because of this unambiguous theological bias. It is also less thrillingly written, with too much reliance on dialogue and not enough descriptive or meditative prose. Some of the many conversations in the book come close to interminability, although some critics have not seen this as a weakness. According to John Clute, 'the dialogue, once it is understood as the central artery and pulse of the entire enterprise, seems anything but a diversion. This sound of incessant interrogation is, one might say, the song of the epistemology of revelation' [Clute, *Scores*, 144].

In *New Sun* Severian is revealed as a type of Christ—he even rises from the dead—although throughout we see things from his point of view and are therefore privy to his own character flaws, his disbelief in himself. It is one thing to have certain people not believe in Christ, it is quite another to have Christ himself not believe in Christ. Severian is an infinitely more complex and compelling character than Silk, and because the world of Urth is mediated through his consciousness it too partakes of depth and strangeness. By comparison Patera Silk, though humble and self-effacing to an irritating degree, is actually much more self-assured, possessed (as Severian is not) of a strong moral compass and sense of right and wrong. But the mismatch between this rather simple, grounded character and the relativist, unreliable richness of the plot and *mise en scène* tend to drain the whole work of power, I think; whereas the creative tension between Severian and the world he travels through in *New Sun* adds immeasurably to it. Horn, the protagonist of *The Book of the Short Sun* is a third attempt to work through a similar thematic business, and is the least successful of the three, precisely because it is too literally externalised. He is identified as the author of *The Book of the Long Sun*, and spends the trilogy searching three worlds for Silk. His narrative, though, moves and distorts as he tells it, with Horn's identity becoming increasingly elusive. Wolfe is still chafing the rough borders of fantasy and SF up against one another. Horn, in *In Green's Jungles*, is regarded as a sorcerer by some, although he insists that he cast no spells, but only marshalled a number of technical tricks. One major species in this trilogy are the inhum, a type of shapeshifting vampire that can be taken as supernatural creatures (as much horror writing does), or that can be explained in pseudo-scientific terms. Wolfe picks out a carefully judged line between these two approaches. Horn may, or may not, mutate into a new form of life across the course of the trilogy.

This is a roundabout way of saying that *The Book of the New Sun* remains Wolfe's major achievement. The more books that are added to his creation the less ambiguous it becomes, even when those additional books are full, in David Langford's word, 'of tantalizing enigmas ... shades of Borges and Escher and strange loops' (Langford also, rightly, talks of 'those passages of blinding simplicity in which this extremely unsimple author loves to mask himself' [Langford, 288–90]). There is in *New Sun* something approaching a radical relativism, a vision of ambiguity going right down to the core of existence, despite the occasional invocation of the Increate. By the end of *Short*

Sun we are being told that this ambiguity is not radical, but merely a kind of metaphysical ketchup applied to the ontological dish for the benefit of the cosmos' inhabitants. In the halting words of another character, Patera Remora, 'what all men, and most—ah—females, require is not theophany, not the divine palpability. Tangibility. It is the—ha!—possibility.' [Wolfe, *Return*, 402] Remora suggests that Horn (or Silk, as perhaps he now is) ought to institute the worship of the Outsider who will not trouble a human being's taste for possibility over actuality by doing something so disruptive as incarnating himself, or revealing himself to his congregation ('He, at least— ... will not come to your Window, Your Cognizance. I believe I can assure Your Cognizance of that'). I find this to be a cop-out. We are too certain of the existence of Ah Lah by the end of the whole sequence, something not true of *New Sun*'s Increate. But, to quote John Clute once again, just as '*The Book of the Short Sun* is all about salvation' [Clute, *Scores*, 260], so is the entire sequence. Wolfe not only revisits many of the conventions of 20th-century SF, he goes further back than that, tapping into the deep roots of the genre, interrogating the many ways in which notions of salvation are inflected by our much broader materialist understanding of the cosmos.

WILLIAM GIBSON'S *NEUROMANCER* (1984) AND CYBERPUNK

As the number of commercial prose SF titles increased it became harder and harder for one writer to make an impact. But one writer who managed to do so was the US-born William Gibson; and the book which, arguably, made the biggest splash of any SF novel in the 1980s was his *Neuromancer* (1984). Cyberpunk was arguably the key genre invention of the 1980s. The term was coined by Bruce Bethke in a short story, 'Cyberpunk' (1983). The first significant novel written in this idiom, according to many, predates the terminology. US writer Bruce Sterling's *The Artificial Kid* (1980), set on a distant planet in the far future, largely concerns the kid of the title, who uses his enhanced martial arts skills to fight for a living, an entertainer in a post-scarcity culture. But this novel, good though it is, is hardly characteristic of the great wash of cyberpunk fiction that was to follow. Sterling's work, certainly trendily violent and streetwise, is nevertheless expansive, picaresque, colourful and mostly set in the larger landscapes of its imaginary world. More often than not, the cyberpunk books that followed were claustrophobic, dark and wedded to a narrow urban vision, symptomatic of a more pessimistic assessment of the dangers of computing (which was the boom industry of the Western world in the 1980s) and the increasingly city-centred focus of contemporary life.

It was Gibson's *Neuromancer* (1984) that established many of the premises of this kind of cyberpunk. It combines the premise of the movie *Tron* (1982)—of a consensual computer-generated virtual reality or cyberspace, which Gibson calls the Net, or Matrix—with the grubby-chic stylings of *Blade Runner* (1982)—a noir plot, a degree of violence and a conceptual breakthrough at the end. Gibson's hero Case is a streetwise hacker, who becomes embroiled in

a complex plot to steal protected data from cyberspace. The adventure leads him across the face of the world and then up into an orbital space habitat, before the heart of the mystery is revealed to be a computer A.I. that is trying to become self-aware—and which ultimately succeeds. Without this powerful literalisation of the *deus ex machina* trope Gibson's two sequels [*Count Zero* (1986) and *Mona Lisa Overdrive* (1988)] are much less successful, derivative le Carréan exercises in street near-future mystery-spy-adventures. His later novels almost always contain interesting elements but none of them exactly cohere in the same compelling way *Neuromancer* does. *Virtual Light* (1993) makes too little of its intriguing titular metaphor, devolving instead into more chase-and-run adventure. By *Idoru* (1996) Gibson's novels were being defined almost wholly by their sense of déjà vu, of the constraints of the Gibson brand-name. His most recent novel, *The Peripheral* (2014), is almost ostentatiously cluttered and convolved, parsing a downbeat present with a possible-future through an overintricate time-travel conceit that, JacksonPollock-like, manifests somewhere between being exhilaratingly freeform and being merely tangled. But Gibson remains a talismanic writer for many in the world of SF, someone who determined a particular style, a post-industrial lightweight-postmodernism coolness and his influence scattered in a wide number of directions throughout the 1980s and into the 1990s.

At the time, many saw cyberpunk as more than just another style, as (in Larry McCaffery's words) part of some 'enormously exciting' developments in culture generally, as a key component of postmodernism which he sees as a 'complex set of radical ruptures—both within the dominant culture and aesthetic and also within the new social and economic media system (or "postindustrial society") in which we live' [McCaffery, 1–2]. There are almost as many different definitions of postmodernism as there are of SF; but insofar as it privileges surface over depth, a shifting present over the past, collage, quotation and intertextuality over originality, and presides over a euphoric emptying out of emotional content ('the waning of the affect') it sets itself against spiritualist or mystical idioms. Postmodernism, embedded in the glorious rhizomatic multifariousness of material culture, is enthusiastically non-mystical. But we may want to query the extent to which cyberpunk actually inhabits a materialist idiom. On the one hand cyberpunk authors certainly do spend a good deal of attention on the *things* of their world, the quiddity, the textures and flavours of actual experience. But the more cyberpunk authors delved into the *material* of their urban dystopias, the more the other half of the SF dialectic asserted itself in their work. As Dani Cavallaro puts it:

On one level contemporary technoscience seems to perpetuate the rationalist approach preached by the Enlightenment. On another level, the Gibsonian configuration of cyberspace as a hallucinatory experience alludes to science's involvement with the irrational ... Cyberculture thrives on these ambiguities: rationality and irrationality coexist within its territory ... one of cyberpunk's main

contributions to contemporary reassessments of knowledge and agency lies in its fusion of mythological and technological motifs. [Cavallaro, 52]

This is an inevitable feature of the particular pocket-universes of cyberpunk's virtual reality premise; it turns the 'I-It' environment of science into an (at root, religious) 'I-Thou' environment with an almost facetious literalness. Cavallaro quotes both Darko Suvin and Samuel Delany by way of emphasising the religious component of Gibsonian cyberspace, fiction written, she suggests, from a desire to escape the squalor of everyday megalopolitan existence, to forge alternative forms of cohesion amongst increasingly alienated individuals. According to Darko Suvin, 'a solution logically latching onto cyberspace, and allowing the reconnecting (*re-ligio*) between disparate people and their destinies ... is then religion'. This reading is corroborated by Samuel Delany who maintains that 'the hard edges of Gibson's dehumanized technologies hide a residing mysticism' [Cavallaro, 57–8; ellipsis in original]. This is the mysticism that redeems, as it were, the otherwise stony grimness of Gibson's books.

In various ways something akin to this mysticism is present in the most important cyberpunk writers (a few praiseworthy names amongst a great many authors who jumped on this bandwagon) of the 1980s and 1990s. US-born Pat Cadigan is, after Gibson himself, the most important practitioner of this style of writing. Her version of cyberpunk attends more closely to the interface between human and computer precisely in order to be able to articulate this dialectic. *Synners* (1991), probably her best book, articulates the problematic mostly in terms of disease (computer viruses that may be conscious and are implicated in certain human deaths). In *Tea From an Empty Cup* (1998) the dialectic is more clearly dramatised along cultural lines. The premise (a virtual reality that gives the user access to certain ecstatic sexual sensations) is viewed as a proper medium for spiritual revelation and cosmic mythological truth by a Japanese character in the novel, but as a non-magical purely materialist experience by a white character. Another US writer, John Shirley superheated the conventions of cyberpunk to an even greater intensity, exaggerating both the hardcore materialism and the Gnostic possibilities. His Eclipse trilogy [*Eclipse* (1985); *Eclipse Penumbra* (1988) and *Eclipse Corona* (1990)] is especially notable.

It may be that the dark-chocolate pleasures of ultraviolet, dystopian cyberpunk only reflected the anxieties and excitements of the Reagan–Thatcher 1980s. The many such books published during that decade almost all read as badly dated nowadays—not that our own age lacks anxiety or excitement, but that the nature of those emotions has shifted its cultural logic. The problem is not with sub-genres and conventions as such, but with the calcification of those conventions. Many cyberpunk novels are well-written and well-realised, but too many are incapable of reaching a conclusion that does not suit their initial prejudices. That is not the case with *Neuromancer* itself, although it generally characterises the sub-genre to which it gave rise.

NON-GENRE WRITERS

‘Non-genre writers have always written SF novels,’ observes John Clute [Clute, *Science Fiction*, 230]. It is hard to argue with this, although the hackles may bristle a little at the tacit sense that genre has a clearly definable inside and outside. Some writers self-identify as SF, others continue to insist that literary writing cannot happen. Joan Gordon quotes a review by Sven Birkerts that refuses to accept Margaret Atwood’s post-apocalyptic novel *Oryx and Crake* (2003) as an example of science fiction, because it is too good:

I am going to stick my neck out and just say it: science fiction will never be Literature with a capital ‘L’, because it inevitably proceeds from premise rather than character. It sacrifices moral and psychological nuance in favor of more conceptual matters, and elevates scenario over sensibility. [quoted in Gordon, 106]

His neck is there, inviting us to chop down, hard as we like. The issue, explicitly here, is one of literary quality, and the simplest response might be simply to deny that the merit is all on one side, and none on the other, of this debate. Matters are complicated though by the existence of a definite cultural identity. Some writers are happy to identify as SF. Others, in Gordon’s words, ‘work both within the field and outside it, as their interests change’ (she gives as example: Jack Womack, William Gibson, Neal Stephenson, China Miéville and Geoff Ryman). Others ‘have written one or two examples of science fiction without publishing them within the field: P D James, Philip Roth, Michael Cunningham, Kazuo Ishiguro’. She goes on:

This last category often produces the most problematic examples. Without much knowledge of the field, these writers often reinvent its ideas but not always with success ... often they struggle with the basic difficulties of constructing SF stories: using plausible science, avoiding expository lumps, developing innovative ideas and original forms of speculation. [Gordon, 112–13]

The idealist in me would like simply to pretend that there is no meaningful distinction between SF and literary, and the cultural imperialist inside me would like to claim all for genre. But generic self-identification, publishers’ marketing strategies and sub-cultural affiliation are all real features of the world and therefore shape how literature is both produced and received. And indeed one of the main arguments of the present study is to suggest that high cultural and pulp form, strictly speaking, a dialectic that has synthesised the particular energies and particular successes of modern SF.

What cannot be denied is that the 1980s and 1990s saw many non-genre writers essay SF, sometimes only as a one-off. This in turn is an index to the degree of cultural prominence the genre was beginning to demonstrate. What had been, pre-*Star Wars*, a minority and sub-cultural interest was quickly becoming culturally dominant. This migration from the literary into the pulpish has sometimes been marked by haughty disregard of the backlist by the literary

authors and, alas, by hostility from SF fans. Occasionally writers who have built reputations on novels that nobody would call SF attempt SF tropes; and sometimes in doing this they display a discreditable ignorance of the lengthy corpus of pre-existing SF treatments. Alternate history, for instance, is sometimes lighted on by mainstream writers with cries of joy as if they have discovered it for the first time. Beryl Bainbridge, in *Young Adolf* (1978), imagines Hitler living in Liverpool in 1913; Philip Roth in *The Plot Against America* (2004) posits aviator Charles Lindbergh becoming quasi-fascist President of the USA in 1940, with malign consequences for the Jewish family at the heart of the fiction. But there is an aesthetically debilitating caution in both novels, with actual history soon reasserting itself, and in neither case is the trope used in an especially illuminating or original way. The most notorious case of this circumstance is *Time's Arrow* (1992) by Martin Amis, which was celebrated by the literary establishment of its day as a work of stunning originality and depth.⁷ In fact the originality (the premise of time running backwards) is better handled in the book where it was first used, Philip K Dick's *Counter-Clock World* (1967); and the depth (the book tells the story of an old Nazi, moving back in time through his experience of the Holocaust) seems glib compared to the complex and moving meditation on precisely the same theme, also rendered via a fractured chronology, of Kurt Vonnegut's *Slaughterhouse 5* (1969). Amis' is a deeply derivative and deeply conservative book, for there is no mistaking its implicit thesis that 'the past is better than the present'. That it could have made the splash it did is rather as if an 18th-century painter had announced to the art establishment that he had invented the principle of perspective and—what is the really remarkable thing—that they had believed him.

Then again, many, so-called, non-genre writers have written very interesting SF. Maureen Duffy, in *Gor Saga* (1981), treated of the creation of a human-gorilla hybrid. Set in a well-realised run-down future Britain, the hero Gordon (Gor) has many adventures, enabling Duffy eloquently to dramatise questions of the worth of life, although her thumb is on the scale to a certain (pro-animal) extent. Paul Theroux's occasional excursions into SF have been marked by a dystopian gloominess. The shallow, consumerist neo-hell America of *O-Zone* (1986) leaves a sour taste in the reader's mouth, but is at least energetically if a little carelessly rendered. Indeed Theroux's pessimism has influenced even his travel writing, the mode in which he is more celebrated. In *Sailing Through China* (1984) his perspective on overpopulated, treeless, polluted modern China is powerfully expressed via an SF-dystopic imagination. 'In a hundred years or so, under a cold uncolonized Moon, what we call the civilized world will all look like China, muddy and senile and old-fangled ... Our future is this mildly poisoned earth and its smoky air' [Theroux, 22]. The baleful implications of that eloquent phrase 'uncolonized moon' are carried on the cultural buoyancy and ubiquity of science fiction's once-positivist assumptions.

Canadian novelist Margaret Atwood has on occasion annoyed members of the SF community by denying that she writes any such thing as science fiction, a pulp genre she has denigrated as concerning merely 'intelligent squids in space'.

But in spite of her denials, Atwood's three best novels are all straightforwardly SF. *The Handmaid's Tale* (1985), her most famous title, won the first Arthur C Clarke award for its vivid portrayal of a dystopian future USA in which Christian fundamentalism has established a repressive and misogynist society based ostensibly on Biblical principles. The novel's protagonist, Offred (nameless except insofar as she belongs, as a handmaid, to her master—she is of Fred) becomes the focus for the book's more generalised outrage at the many ways men objectify and enslave women. The earlier sections are brilliantly claustrophobic, not only in their representation of the attenuated existence Offred endures, but also the limited life lead by Fred himself. Atwood is saying perceptive things about human psychology, and about how structures of oppression are able to subsist in the first place, why it is that downtrodden human beings don't (as Shelley puts it) rise like lions after slumber. Not, I think, that it is a flawless book. The reader may register some disappointment at the scene in the novel's latter half when the Commander takes Offred to a government-sanctioned nightclub-cum-brothel. Up until that moment, *The Handmaid's Tale* seems doing something more complex and interesting than just deploring the hypocrisy of masculinity. It seemed to be portraying a world in which men, having erected a forbidding theo-ideological edifice in order to keep women in their place, thereupon found themselves snagged in their own webs, their lives robbed of the gratifications of power by the very strategies employed to seize power—that is to say, made miserable (less miserable than the women they oppress of course, but still) by their own narratives of self-justification. But, Atwood's vision is that men don't *actually* get caught in the repressive hierarchies they erect; they're all *actually* getting drunk and having sex with prostitutes in secret clubs. This seems to me questionable. Hitler didn't go back to his Berlin bunker to partake of cocaine-fuelled wild sex-orgies, after all; he went back to eat boiled asparagus and bore his companions with tedious speechifying before lying down on his truckle-bed to dream his arid dreams of Aryan dominance. One of the (many) expert touches in Orwell's *Nineteen Eighty-Four* is when O'Brien reveals the level of luxury denied to hoi polloi but indulged in by the Party higher echelons—and it's desperately feeble; a *slightly better* brand of Victory Gin, a *slightly less threadbare* set of furnishings. That's better done, I think. At any rate, after this scene, Atwood's Fred becomes a more two-dimensional villain—not the less believable, of course, for many autocrats have paid only lip service to their supporting ideologies whilst enjoying illicit pleasure in secret; but a less interesting character according to the fictive logic of Atwood's created world. The novel's conclusion, with Offred escaping the limiting worlds of New Gilead, is also a little anti-climactic.

Considerable SF content is also folded into Atwood's Booker Prize-winning *The Blind Assassin* (2000), a novel whose conventional 20th-century Canadian frame story of thwarted and secret-ridden family life is fitted around a very extensive, and in many ways much more interesting science-fictional pulp magazines adventure, a superior Edgar Burroughs-like planetary romance set on the exotic planet of Zycron, after which the novel is named. Atwood's easy com-

mand of the pulp idiom contrasts sharply, and to interesting aesthetic effect, with the rather strangulated manner in which the contemporary half of the novel is narrated. Atwood's most enduring achievement, though, may be her late career trilogy: *Oryx and Crake* (2003), *The Year of the Flood* (2009) and *Maddadam* (2013). Of these three it is *Oryx and Crake* that works best: a postapocalyptic novel of genuine power, focussed on Jimmy, also known as Snowman, seemingly the last human alive after a designer-bug plague has wiped out humanity. He is not alone, however, for much of his novel concerns his interactions with genetically engineered post-humans called Crakers. The novel gives us a great deal of backstory: the anomie of Snowman's affluent, lonely childhood; his difficult mother; his adolescence; his unsatisfying adult life. All this rings true, and is written in an involving and often moving way. As a kid, Jimmy's best friend was Crake, the man who was to grow up and genetically engineer the Crakers, but also the man who would create the plague to wipe *homo sapiens* from the Earth to make way for them—he surreptitiously inoculated Jimmy against this disease, which is how Jimmy is around to be in the novel at all. As kids, Crake and Jimmy watched a lot of porn, and chanced upon an Asian child who caught their eye. Later, improbably enough, this girl not only makes her way to America, learns English and gets educated, she also becomes Crake's right-hand woman and lover. Oryx's characterisation is cleverly handled by Atwood. Her backstory—sold into sex-slavery as a child, trafficked around the world—is genuinely horrible, but Atwood characterises her as just sphinx-like enough to frustrate Jimmy's, and our, desire for scenes of juicy post-traumatic emotional *Sturm und Drang*. Jimmy, obsessed with her, probes and probes to uncover more excruciating yet titillating details of her former sexual degradation. She always, lightly, firmly, deflects his questions.

He couldn't leave her alone about her earlier life, he was driven to find out. No detail was too small for him in those days, no painful splinter of her past too tiny. Perhaps he was digging for her anger, but he never found it. Either it was buried too deeply, or it wasn't there at all. [Atwood, *Oryx and Crake*, 314–15]

Atwood understands this masculine urge very well indeed: the painful pleasure of agonising about a lover's previous partners, the peculiar intensification of erotic desire predicated upon a kind of repulsed fascination, polluted in this case by the knowledge not only that Oryx's past is one of rape and abuse, but also that he, Jimmy, was indirectly one of the abusers—for he watched the porn films made of Oryx's predicament avidly enough. It is a good call by Atwood to leave us, as readers, in Jimmy's position, unsure whether Oryx's anger at the way she was treated is buried too deeply to be retrieved or just isn't there at all. Our desire as readers is less venal than Jimmy's, but by the same token it is more invasive. One of the more unsettling features of Atwood's novel is its implication that the literary novel is just as in hock to a kind of emotional-utilitarian voyeurism as porn. Ursula Le Guin dislikes Atwood's characterisation in this novel (in her review of the novel she said the characters' 'personality and feelings' were 'of little interest; these

were figures in the service of a morality play'). I think this wrong; that Atwood's characterisation is constructed not to underplay reader interest but specifically, and pointedly, to rebut it. We pick up a novel expecting all the ins and outs of the characters' motivations and feelings, their sufferings and joys (but especially their sufferings) to be laid out for us. With the character of Oryx, and to some extent with the character of Crake, Atwood simply refuses to indulge us. And with the third of her trio, Jimmy, we get an aversion-inducing splurge of too *much* intimate knowledge: every seamy twist and turn of his early sex-life; Snowman masturbating in a treehouse at the end of the world; Snowman slaveringly eyed-up as 'fresh meat' by those clever little chauvinist swine, the pigeons. One of the things the end of the world does, it seems, is turn the consumer of porn into, in a manner of speaking, the product. This is a novel about how the subject is objectivised. The two follow-up novels to *Oryx and Crake* add some roundedness but little substance to this core vision, concentrating (necessarily, since the world has ended) more on backstory than on future possibilities.

MAJOR SF OF THE 1980s: PRIDE, FREE WILL AND ATONEMENT

Sheri Tepper is, like Atwood, deeply exercised by environmental concerns, and the delinquencies of humankind's relationship with the natural world. As a woman publishing SF in the 1980s, and on the strength of the gender fable *The Gate to Women's Country* (1988), she is sometimes classified under the multicoloured umbrella of feminist SF. But this is not quite right, not because Tepper's work is inimical to feminist thought (on the contrary, it takes much of feminism as a *sine qua non*), but because her own anger is aroused by what is, at root, fundamentally a *theological* category, pride. Embodiments of the destructive power of pride haunt the protagonists of her riverworld novel *The Awakeners* (1987). It is pride that treats the environment as merely a resource to be exploited, and pride (mostly in male form) that threatens humanity (mostly in the form of women and children) in the post-holocaust world of *The Gate to Women's Country* (1988), where war-drunk men live in different cities from the rest of the more civilised population. It is for this that the agnostic humanism of Tepper's novels relates medially with a religious awareness that taps into the root of SF itself, something evident in Tepper's masterpiece, *Grass* (1989), a spacious, well-plotted, thought-provoking and wise book that rewrites the beauty and the beast mythos in interesting ways.

The human population of the planet Grass is dominated by the aristocratic bons, an elite caste of close-knit families whose life is dominated by hunting—not hunting foxes with horse and hound as on Earth, but hunting a more fearsome alien foxen (a shapeless blur of teeth and claws) with alien hippae, velociraptor-like creatures of great cunning and intelligence. The world is close-knit and doesn't welcome outsiders, but it seems to hold the cure for a galactic plague, and so the horse-loving Earthwoman Marjorie Westriding

Yrarier and her family travel to the planet to try to insinuate themselves into the world of the bons and learn the secret of Grass' immunity. Westriding's journey towards this knowledge also unlocks the mystery of the circle of life on the planet, and mirrors her own ongoing estrangement from her unsatisfactory husband, via the possibility of a love affair with one of the bons, to a startling but much more satisfying conclusion. The apparently savage foxen are revealed as victims, the persecuting hippae as diabolic. In the end, rather than transforming the beast into a human with her love, Marjorie leaves her husband and runs off with the beast, enjoying beastly congress. Tepper's satire on the conventional Catholicism of the Westridings, and on the stifling quasi-Mormon official religion of her Earth, is a little heavy-handed, but the monstrous love story more than compensates for this, accumulating impressive emotional heft. In a loose sequel to this novel, *Raising the Stones* (1990), fundamentalism is lambasted more broadly. Tepper is never po-faced in her attacks on organised thought. In *Raising the Stones*, Marjorie and her foxen appear briefly through a wormhole gate before a gathering of High Baidee, to whom she imparts some wisdom (including 'there is no sin inherent in any mind save the sin of pride in believing one has seen or been taught the absolute truth'), saving her 'greatest commandment' for last, the profoundly wise and true: 'even when people are well-meaning, do not let them fool with your heads' [Tepper, *Raising*, 155]. Tepper then fast-forwards the narrative several hundred years, and we discover that her words, taken as divine revelation, have become codified, resulting in a society just as restrictive and oppressive as before, with the additional wrinkle that brain surgeons, psychiatrists and hairdressers have been outlawed in deliciously over-literal anti-fooling-with-our-heads grounds. The satire on the reification of revelation is pinpoint, and hilarious. This, for instance, on Marjorie's commandment 'be not sexist pigs':

Where the Low Baidee found a prohibition against sexual discrimination in the words of the prophethess (be not sexist), the male Scrutators of the High Baidee found a warning against bestial behaviour (be not pigs). It was not long until bestial behavior was defined as consorting with the other kind, that is, the Low Baidee. [Tepper, *Raising*, 156]

Later Tepper novels have been more directly concerned with environmental degradation. *The Margarets* (2007) projects masculinist aggression and eco-feminist carefulness onto an interplanetary stage and a bustling space opera milieu. *The Waters Rising* (2010) and its follow-up *Fish Tails* (2013) detail catastrophic flooding and the extreme exigencies put on life to survive.

Connie Willis has enjoyed a remarkable degree of love from SF fandom, manifested in, amongst other things, shelf-fuls of awards (she has, for instance, been nominated twenty-four times for the Hugo, and has won eleven). In one sense she is a deeply unpostmodern writer, writing stories that are at their heart *about* the heart, populated with believable and likeable human beings. Her interest in atonement is given form by her main preoccupation as a writer, time travel. Her

most successful novels all proceed from the premise of the invention of time travel in Oxford in the 2050s, and the adventures travellers have encountering the past, attempting in small ways to steer events away from their most baleful manifestations, and the complex ways in which they fail. *Doomsday Book* (1982) sends its travellers back to late 14th-century England, although a mistake actually deposits them in the middle of the Black Death, half a century earlier. Despite many historical inaccuracies in the writing, this is a novel that generates palpable tragic heft by its end, and tragedy, or more precisely elegy, is the mode in which Willis achieves her best effects. Some readers have enjoyed the whimsy of her 19th-century time travel comedy *To Say Nothing of the Dog* (1998), although others find it wincing. Her later two-part novel, *Blackout/All Clear* (2010) brought travellers to the London Blitz of the 1940s, but is vitiated not just by various factual errors but by a larger misprision of the tone of what it means to be British, excusable in a North American writer. Then again, Jo Walton is also North American, and her novels—for instance her 1930s/1940s alt-history trilogy *Farthing* (2006), *Ha'penny* (2007) and *Half a Crown* (2008)—are factually and tonally spot-on.

Octavia Butler took the idea of alien abduction as the starting point for her powerful *Xenogenesis* trilogy [*Dawn* (1987), *Adulthood Rites* (1997), *Imago* (1998)]. Lilith Iyapo, a well-to-do African-American woman, wakes to find herself in a grey, enclosed room aboard a spaceship. She has no memory of how she came to be there, although she does remember the nuclear war that had destroyed her world, and remembers the death of her family. The aliens whose spaceship it is, the Oankali, have removed the remnants of humanity from the aftermath of nuclear conflict and preserved them in suspended animation aboard their orbiting spaceship for 250 years, until the Earth could be made habitable again and humanity can return to it. In return for acting as saviours in this manner they require human genes. This is their mode of existence; travelling the galaxy continually augmenting their own bodies with genetic diversity from other species, a process they can control at a molecular level. The Oankali are, in other words, a symbolic embodiment of the Saviour as the principle of diversity. In the second book of the trilogy, Lilith says as much, talking to her son, a hybrid human-Oankali called Akin:

‘Human beings fear difference,’ Lilith had told him once. ‘Oankali crave difference. Humans persecute their different ones, yet they need them to give themselves definition and status. Oankali seek difference and collect it. They need it to keep themselves from stagnation and overspecialisation ... When you feel a conflict [within yourself], try to go the Oankali way. Embrace difference’. [Butler, *Adulthood Rites* 80]

Perhaps this sounds merely banal, excerpted from its context; but the trilogy as a whole articulates the beauty as well as the necessity of difference with comprehensive power and truth. Butler’s Oankali constitute one of SF’s most convincing utopian experiments, a profound and moving exploration of the possibilities alterity could bring with it.

The placement of a black woman at the core of this story inevitably brings us back to issues of racial difference, one of the topics to which Butler returns in her fiction. We discover that Lilith has been awakened by the Oankali for a particular reason, she is to parent a group of newly-awakened humans, to guide them into a position of acceptance of their new position. She doesn't want this job, but that is the very reason why she has been given it by the aliens: 'somebody who desperately doesn't want the responsibility, who doesn't want to lead, who is a woman' [Butler, *Dawn*, 157]. In other words, as Jenny Wolmark puts it, this is a novel about the ways a character's 'marginality, articulated in terms of both gender and race, [can] become her strength' [Wolmark, 32]. As a black woman, Lilith might traditionally be represented as marginal, but Butler's SF context redefines the concept of the marginal through the hybrid space aliens in whose domain the story takes place.

Butler is a major African-American novelist whose muscular, eloquent fabulations regarding the heritage of slavery in American, and world, culture gain traction from the tacit estrangement those fabulations entail. Perhaps her single most important novel, certainly her mostly widely read inside and outside the genre (it is often assigned reading at school and college level) is *Kindred* (1979). This is a novel that uses time travel to confront a young African-American writer, Dana, with the lived-experience of pre-Civil War slavery. Dana travels between her 1970s California home and an antebellum Maryland plantation, where she comes to know her ancestors, an arrogant, self-destructive white slave owner and the black woman he has enslaved and raped. What makes this so potent a piece of writing is the way it delineates the complexities of slave society, the damage done to both owners and owned, and the way the structures of power compel practical and psychological compromise on behalf of the slaves themselves. It is a novel ahead of its time in its sensitive apprehension of what is now called intersectionality; the way race, class and gender all factor into and inflect power dynamics. Butler's later Parable dyad [*Parable of the Sower* (1993), *Parable of the Talents* (1998)] is, if anything, an even more devastating fictional representation of oppression and endurance, if only because—in the latter volume especially—it is so relentless in the minute delineation of the human costs of enslavement. Set in a near-future and crumbling USA, the novels explore the way fundamentalist thinking collaborates with actual power in small communities, enhanced by certain technological augmentations of hierarchical authority—and the desperate human consequences of that state of affairs. Butler's too-early death, at the age of 58, robbed us of a projected third Parable book, *Parable of the Trickster*, which might have leavened the harshness of the fictional vision a little.

In the 1980s Orson Scott Card seemed to have become rapidly (his first story was published 1977) one of the dominant figures of world SF. That dominance looks a little less assured at the beginning of the 21st century; not because his output has flagged but perhaps because his later books—whilst always interesting reading—have added little to his earlier work. Everything Card writes is formally conservative, recycling basically 19th-century iterations of characters, story and

atmosphere. But in *Ender's Game* (1985) he found an ingenious central premise for a novel that was able to dramatise a genuine ethical dilemma. The novel's future Earth fears overwhelming attack by the unfortunately named insect alien species the Buggers. The authorities take promising individuals at a very young age and raise them in a military academy to maximise their belligerent potential. The hero, young Ender Wiggin, is the most gifted strategist, playing increasingly complex games of battle and war in a virtual reality environment. Only at the end of the tale is it revealed that, whilst Ender thought he was only playing, in fact he has been guiding the actual human spacefleet in a final war against the Buggers, wiping them out entirely. Two things make this more than an ingenious twist in the tale SF fable. One is the portrait of the bullying, jockeying for power and danger of the children's world in the academy, which rings true as free from illusions. The second is Card's follow-up volume *Speaker for the Dead* (1986), where the thrilling military climax of the war against the Buggers—thrilling for the triumphant Ender, but also for the reader, who turns the pages egging Ender on—becomes ashes in his and our mouths. This book dramatises the ethical consequences of committing genocide, or more strictly, to quote the title of the third in the Ender series, of committing *Xenocide* (1991). Ender ends up travelling the galaxy trying to make amends for his war crime. The moral point is well dramatised, even if Card does sometimes veer towards the schematic; and what makes it so especially interesting is the sense that Ender, though responsible for the crime, was not in a position consciously to will it. Card's fascination with this matter of free will has evident Christian resonances. A Mormon, Card has frequently returned to his faith as inspiration for his writing. His novel-sequence *Tales of Alvin Maker* [*Seventh Son* (1987), *Red Prophet* (1988), *Prentice Alvin* (1989), *Alvin Journeyman* (1989), *Heartfire* (1988), *The Crystal City* (2003) and *Master Alvin* (2005)] reworks the life of the founder of the Mormon religion, Joseph Smith (1805–1844). More impressive is his five volume *Homecoming* series [*The Memory of Earth* (1992), *The Call of Earth* (1992), *The Ships of Earth* (1994), *Earthfall* (1995), *Earthborn* (1995)]. This sequence rewrites the Bible as SF, telling an Old Testament story of interstellar Exodus. The planet Harmony was colonised by humans 40 million years ago. Now the orbiting computer, Oversoul, that has governed the planet for all that time, is starting to fail. It selects some humans to make the long trip back to Earth, to contact the even more powerful Keeper and find out how to proceed. The story reveals itself to be most interested, once again, in questions of free will, the reasons why God (Card's Keeper) grants it and the fact that some people will use it to do evil things. This summary sounds dry, and Card cannot quite escape a deadening piety in his treatment. But in building his novels around directly engaging characters and clear-cut moral dilemmas he always writes a cut above the mass of the market.

Dan Simmons' *Hyperion* (1989) created a tremendous buzz amongst SF fans on publication (it won the Hugo in 1990). A complex, dazzlingly-handled space opera *Hyperion* and its sequel *The Fall of Hyperion* (1990) are novels expressing the original anxieties of SF in unusually pure form. This compendious book begins with a story about a Catholic priest, Lenar Hoyt, whose

faith has been eroded by the plurality of inhabited worlds of Simmons' future galactic civilisation. He discovers a race of mute aliens with a glowing cross on their chests which, with delight, he takes as proof of the truth of Christ's incarnation. In fact the crosses are a separate form of malicious alien parasite, and the priest is disillusioned, but the trajectory of the two novels actually works to reinscribe certain core Christian values. A being called the Shrike is impaling a great many people on the thorns of a vast metal tree. The Shrike, it is revealed, hopes to tempt forth a universal principle of compassion that, though not explicitly identified with Christ, expresses a similar form of divinity. Simmons added to the series with *Endymion* (1996) and *The Rise of Endymion* (1997), set in the same universe, although one in which a rather caricature version of the Catholic church has become the dominant, tyrannical political power.

THE 1990s

Grounding a judgment of books published in the 1990s becomes, absent the necessary length of post-publication time to gauge longevity and influence, trickier to do. Lois McMaster Bujold continues to win and be short-listed for many genre awards, especially for her interstellar *Vorkosigan Saga* [from *Shards of Honor* (1986) through eighteen or more volumes to *Captain Vorpatril's Alliance* (2012)], although her impact has probably been greater in the USA than outside. A prolific writer who began publishing in the 1980s Bujold came into her own in the 1990s (her first Hugo win was 1990). At her best she manages to inflect her commercially appealing military science fiction with some genuinely humane and destabilising touches. Her saga's hero, Miles Vorkosigan, is an exemplary interstellar warrior (*miles* is the Latin for soldier), and yet a diffident, physically unprepossessing and disabled individual. As Edward James notes, 'physical disability, or at least variety of the human norm' informs the whole multi-volume saga [James, 132]. William Gibson and Bruce Sterling's *The Difference Engine* (1990) caused a splash on publication with its nicely-done alternate-history 19th century (in which Charles Babbage's 1820 computer, from which the novel takes its title, works). The relocation of cyberpunk shenanigans to the steam age even earned a short-lived sub-generic tagging (steampunk), although the limitations of this mode of writing have kept notable examples to a minimum. Steampunk itself, though, was to become a very significant cultural form in the following century, and is discussed below.

British writer Gwyneth Jones has published a series of extraordinarily intelligent, subtle and effective novels; too subtly rounded, perhaps, for SF fandom, which has yet to embrace her wholeheartedly. A book such as *White Queen* (1991) eloquently represents a subtly alien race of humanoid visitors, tracing their multifarious interactions with a near-future humanity. Jones is better than almost any other living writer at meshing a convincingly realised scientific or technical context with a profoundly imagined understanding of the co-dependencies and hostilities of inter-personal interaction. The idiom in which she is most at home is one that fits SF and fantasy together into a complex diffraction pattern. This

is clearest in her Arthurian trilogy [*Bold As Love* (2001), *Castles Made of Sand* (2002), *Midnight Lamp* (2003)], a powerfully rendered near-future series of novels in which a rock star becomes ruler of a near-future yet Arthurian England. By exploring the dialectic between science and magic (in the broadest sense of these terms) this series could not be more central to the core project of SF.

American Neal Stephenson has made a significant reputation for himself with a series of often very lengthy novels, generous with ideas and incident to the point, often, of feeling frankly overstuffed. His 1990s impact in part reflected the sense that he was not only an entertaining and thought-provoking storyteller, but that he was some kind of contemporary prophet. His breakthrough books, *Snow Crash* (1992) and *The Diamond Age* (1995) were cyber-literate thrillers that some called post-cyberpunk, set in worlds best described as anarcho-capitalist, whose many dystopian features are given an almost attractive sheen from the brio with which Stephenson portrays them. In the first novel the wholly privatised burbclaves (or suburban enclaves) might be run by private industry, or by the Mafia, as if those two things are effectively the same thing. Many characters have retreated into a shared virtual reality game called the Metaverse. In the second book individual contexts are less social, familial or religious and more by phyle or tribe—perhaps a mapping across of sub-cultural identities, like an SF fan onto global politics. But though these sharp, violent adventure stories struck readers as achingly contemporary, Stephenson's subsequent career actually took a turn towards history. The 1000-page *Cryptonomicon* (1999) is as much concerned with World War II as the origin point for modern computing, as it is with the 1990s; and his 2500-page *Baroque Cycle* [*Quicksilver* (2003), *The Confusion* (2004), *The System of the World* (2004)] takes us further back into the late 17th and early 18th centuries in Europe. Some critics consider these works modern classics; others, the present author included, see them as ziggurats of stodge, a kind of apotheosis of the infodump. More entertaining, though no shorter, is *Anathem* (2008), which in effect takes us all the way back to Plato, although on an alien world. *Reamde* (2011) returns to the idiom of contemporary social critique and immersive virtual reality worlds (here called T'Rain) that made Stephenson's name in the 1990s, and moves so quickly through its technothriller paces that the reader almost forgets that it is 1100 pages long. Almost.

Australian Greg Egan has steadily, and without fanfare, been fashioning something new out of the SF novel by inhabiting its assumptions more thoroughly than other writers. Some readers may find that an almost inhuman chill clings to Egan's tales of artificial intelligence, mathematics and physics. Few authors have been as far-reaching in their exploration of the possibilities of extrapolating actual science. The faint of heart and scientifically lazy may balk at the rigour with which he does this, but he achieves absolutely unique conceptual and aesthetic things. In *Diaspora* (1997) most humans have up-loaded their consciousnesses into virtual realities where they live as infomorphs. Even the possible destruction of the material galaxy cannot threaten the marvellous possibilities of life as information rather than as atoms. *Schild's Ladder* (2002) is set in a far-future

galactic civilisation in which (as with much Egan) humanity is divided by those who choose to live in their bodies, and those who prefer the possibilities of acorporeality, living as information in complex data banks. A scientist unwittingly creates a new kind of vacuum, called novo-vacuum, that spheres outwards from its originary point at half the speed of light. Six hundred years later it has swallowed dozens of stars and inhabited systems, and humanity is fleeing all along its length. But Egan's treatment of this fairly standard disaster novel scenario is bracingly hard-science and brilliantly estranging. The discovery of life inside this expanding sphere presents a genuine alterity. Egan's masterpiece is probably his *Orthogonal* trilogy [*The Clockwork Rocket* (2011), *The Eternal Flame* (2012), *The Arrows of Time* (2013)], books that not only tell an absorbing story from a thoroughly alien perspective, but reinvent pretty much the whole of physics, systematically, from new first principles. I doubt there's another writer working today who could have undertaken this intellectually Stakhanovite task, and certainly not with such richness and conceptual depth.

Not all authors have abandoned the dream of rewiring SF according to a Pynchonesque rather than a Heinlein aesthetic. American writer David Foster Wallace's massive novel *Infinite Jest* (1996), set in a future America even more thoroughly interpenetrated by commercial concerns than is the case today, configures its subject according to the logic of a sprawling and exploded encyclopaedia of contemporary malaise and emptiness. It is the very excess of this vision that makes it interesting to SF (some critics see that excess as deplorable—American critic Dale Peck thinks that '*Infinite Jest* may well be the first novel to out-*Gravity's Rainbow Gravity's Rainbow*', and he doesn't mean to praise Wallace [Peck, 43]). But excess, as an aesthetic correlative of the Feyerabendian possibilities of the science that now governs our life, may be the most fruitful approach to the difficult business of novel writing in our present age. Some of the best SF of the 1990s follows this route, although not necessarily by sprawling, like Wallace, through well over a thousand pages. American writer Douglas Coupland manages to convey precisely this excess in under 300 pages in *Girlfriend in a Coma* (1998), the best end of the world novel published in the 1990s.

Less excessive (although certainly given to writing big, inclusive books) is British author Stephen Baxter, a figure who very precisely epitomises the dialectic of SF that this study has been aiming to establish. A prolific author of hard SF, grounded always in discourses of scientific plausibility, Baxter is better than almost any current writer at creating the sense of wonder; billions of years of cosmic history; an immeasurable spread of possible alternate realities blooming like a fantastically complex flower from the nubbin of the Big Bang. But Baxter is also a writer deeply informed by religious buried logics. Born into a Catholic family, Baxter made his name with the Xeelee books [*Raft* (1991), *Timelike Infinity* (1992), *Flux* (1993), *Ring* (1993), *Vacuum Diagrams* (1997)], which trace out a future history in which the solar system is invaded and humanity enslaved by an alien race; throwing off this yoke mankind's far future becomes embroiled in universe-scale war with aliens from a different dimension, made of baryonic or dark matter, who are trying to chill the stars' fires the better to

suit their own lives. This is, as Baxter himself has made clear in interviews, a war in heaven with strongly Miltonic overtones—one of his short stories, ‘The Tyranny of Heaven’ (1990), is even built around the notion that a quotation from *Paradise Lost* might be the cunningly hidden trigger to a profound genetic change in humanity. His powerful novel *Coalescent* (2003) science-fictionalises the Roman Catholic church itself as a sort of Mariological hive-mind, living in a hidden buried-city right at the heart of modern-day Rome. It is not—and to say this is to reiterate the whole thesis of this lengthy critical study—that Baxter’s novels are religious allegories, and neither are they hidden avowals of Catholic faith. But they are aware that what SF does better than other form of literature is mediate the scientific and the mystical perspectives of the cosmos—rationality and the unnameable—and that it does this because the shaping conditions that gave birth to the genre have also determined its growth. The *underlying* logic of SF still addresses those same anxieties, finding a newer, less-theological but nevertheless at root metaphysical, vehicle in which to do so.

Highly regarded Japanese novelist Haruki Murakami has written science fiction, but his SF novels owe more to the traditions of ghost story and supernatural fable than to the particularly cultural dynamic that shaped the Western genre. In *Supūtonku no koibito* (*Sputnik Sweetheart* 1999) circling sputniks are emblems of the alienation and distance of human emotional connection, and a gently handled supernatural element may or may not be explicable in scientific terms. *Umibe no Kafuka* (*Kafka on the Shore* 2000) might similarly be described as magic realism, except that Murakami’s characters are too passive, in a sense too machinic, and his world too thoroughly immersed in the idiom of contemporary technology. French writer Michel Houellebecq achieved a *success de scandale* with his novel *Les Particules élémentaires* (*The Elementary Particles* 1998; translated into English as *Atomised*), the story of two brothers, one a molecular biologist almost entirely lacking a sex-life and the other a libertine. What begins as savagely comic satire moves inexorably into SF dystopia; to brilliant effect.

IAIN M BANKS

The first Culture novel, a savvy space opera from Scottish writer Iain M Banks, was *Consider Phlebas* (1987). From the beginning it was clear that Banks was something special. At the time of his early death in 2013 he was one of the world’s most famous, and most widely loved, SF writers. There might seem, at first glance, little new about Banks’ inventive star-hopping narratives except, possibly, a nicely judged contemporaneity and wittiness of tone. Banks’ technologically enabled Culture lives a left-wing libertarian dream; a society of seemingly endless possibilities for self-realisation that nonetheless has a social conscience. For many this was a welcome change from the largely right-wing bias of much golden age American SF; and Banks brought a tremendous warmth and likeability, as well as a knack for ingenious and satisfying plots, to the mix.

Although Banks continued writing steadily right up to his death, it does not distort matters to identify him as a 1990s figure. The Culture sequence con-

tinued with *The Player of Games* (1988), snappily plotted and witty in its use of violence; and then moved into what might be called its golden period with the novels *Use of Weapons* (1990), *Excession* (1996), *Inversions* (1998) and *Look to Windward* (2000). In a 1998 interview with the magazine *Science Fiction Weekly* Banks was asked:

Excession is particularly popular [amongst your novels] because of its copious detail concerning the Ships and Minds of the Culture, its great AIs: their outrageous names, their dangerous senses of humor. Is this what gods would actually be like?

His reply was: 'if we're lucky'. Alan Jacobs, who quotes this interview, glosses Banks' point as follows:

It is through the work of the Minds—in their overwhelming resourcefulness and, perhaps, wisdom—that the Culture possesses its most interesting feature: it is what Banks has called a 'post-scarcity' society, in which everyone has everything he or she wants. A Culture citizen can live in any environment, under any climate, in any kind of dwelling, and can wear any kind of clothes and own any imaginable objects. Sexual prowess and pleasure are ensured by genetic modification and precisely infused drugs: glands secrete at the citizens' commands to produce whatever mood or energy is needed. The Culture has no laws, and nothing that we would call a government. All power remains in the hands of the omnipotent and omnibenevolent Minds. As Banks himself has written, 'Briefly, nothing and nobody in the Culture is exploited'. [Jacobs, 46]

Banks' utopian Culture has been achieved through both bottom-up and top-down strategies. On the one hand, its human constituents have no qualms about altering themselves genetically to make themselves better people—in an interview with *Wired* magazine, 1996, Banks said:

I'm not convinced that humanity is capable of becoming the Culture because I think people in the Culture are just too nice—altering their genetic inheritance to make themselves relatively sane and rational and not the genocidal, murdering bastards that we seem to be half the time. [Jacobs, 50]

But this is only half the picture. On the other side of the equation are the Minds, dictators of human society, though wholly benign and kindly ones (though with flecks of dangerous unpredictability), shaping, guiding, controlling and otherwise maintaining the utopianness of the Culture.

That Banks was prepared to write utopia in unembarrassed, unironic mode so late in the science fictional day is in itself remarkable. The vogue, in the 1990s and to an even greater degree in the 2000s and 2010s, was quite the other way, dystopian societies of one degree of horribleness or another. Fredric Jameson, for instance, thinks 'writing utopia' strictly impossible in this day and age. The best we can do, according to him, is 'anti-anti-utopianism' [Jameson,

15], writing dystopian tales in order to highlight and exaggerate those aspects of modern life that are standing in the way of our utopian imaginings. Not so Banks. And this is true in a broader sense. When *Consider Phlebas* first appeared in 1987 it was greeted as something fresh. And tonally it *was* fresh: lively, witty and unencumbered by the backlist. But in other respects it was deeply old-fashioned. All the props and tropes and many of the clichés of golden age space opera are wheeled out yet again. Everyone else was going cyberpunk, which made Banks' spacious, sunny charm-and-steel combo stand out even more. Writing such nakedly old-fashioned fare turned out, counter-intuitively, to be a rather brilliant strategic move.

As the series proceeds, though, some of this distinctiveness goes out of it. With the later Culture novels—*Matter* (2008), *Surface Detail* (2010), *The Hydrogen Sonata* (2012)—Banks' imaginative Duracell shows signs of running low, not because his mind was any less ingenious than it had been before, but only because the idea of the Culture is one that dissolves away dramatic tension and narrative momentum. This is the old, old problem of utopia: if everybody's happy, if everything in the garden is rosy, what is there to write about? Unhappiness and vulnerability are what make stories happen, after all. I say so not only to name the technical necessities of constructing a story but also to make a larger point. We may think we read stories to feed our fantasies of power and competence. If 'we' are SF fans, we may believe this more than most. But it's not true. What's interesting about Iron Man is not that his suit gives him superhuman powers, but that his suit fails. Failure grounds art in a way success never can. *Consider Phlebas* cannily puts the Culture into the background, positing in the Idiran a collective adversary not only strong enough (effectively immortal, technically advanced, highly motivated warrior giants), but appealing enough to suggest that the Culture could be beaten—and that a reasonable person (like Horza) might have genuine grounds to hope for such a defeat. *Player of Games* flips this about, and we see things from the Culture perspective. It's early in the series, but the idea of the Culture's vulnerability has already fallen away; so Banks finds a story instead in the unhappiness of his protagonist, a kind of existential anomie in which the very expertise at game-playing that defines the main character Gurgeh is also the thing that seems to leach deeper satisfaction from life.

As the series proceeds vulnerability and unhappiness retreat into the novels' shadowy background. There is an increased focus on cool machines, mega-structures and intricate world-building, and more space given to the chatroom-like interactions of the godlike Minds themselves. *Use of Weapons* is about a main character whose existential unhappiness is slowly revealed (via a rich array of incidental episodes and inventive world-buildings) to be about individual guilt. The problem with the later novels is that all their unhappiness is syphoned-off into the Culture's antagonists, alien societies of varying degrees of sociopathy and horribleness. In *Look to Windward* there is a diehard traditionalist Chelgrian general, Sholan Hadesh Huyler, who seems entirely representative of his society in that he is so full of hatred of Culture decadence that he tries to engineer a terrorist atrocity to kill millions of Culture citizens. At the end we discover he was working

for the Culture all along. ‘They showed me all there was to be shown about my society and theirs and, in the end, I preferred theirs’ [Banks, *Look to Windward*, 356] he says, deflatingly. By the time of *Surface Detail* the extraCultural types are systematic horrible sadists who have invented actual virtual hells in which to torment people forever, and which the Culture quite rightly opposes. Indeed the Hells are presented as so ghastly and disproportionate *nobody* could possibly endorse them, which denatures the moral drama and replaces actual narrative momentum with a series of grisly-ingenuous set pieces. Still, although his view of the moral state of the world darkened in his later years, Banks was never merely angst-y about this, never self-pitying, but it is an integral part of his larger vision. The best way of apprehending the world, he says, is with humour, with wit, with grace. His novels stand as testament to that.

MARS AND CONFLUENCE

I end this chapter with a brief discussion of what I consider the two most significant SF novels of the 1990s, both originally published as trilogies: Kim Stanley Robinson’s *Mars* (1993–96) and Paul McAuley’s *Confluence* (1997–99).

The closer this history comes to the present day, the harder it becomes to make judgments about which writers and which books will last; but one figure who seems assured of a continuing major reputation is American Kim Stanley Robinson. His Orange County books imagine three different sorts of future for Robinson’s home state California. A post-nuclear dystopia is the setting for *The Wild Shore* (1983), which works splendidly by refusing to become too grim (the simple addition of a window to the protagonist’s rudimentary hut provides a surprisingly effective upbeat ending). *The Gold Coast* (1988) extrapolates current Californian pollution, overcrowding and corruption into a well-realised future; and finally, and perhaps least successfully, *Pacific Edge* (1990) tropes California as Utopia: a clean, equitable, environmentally-sustainable future society. Robinson’s *Aurora* (2015) is a generation starship novel of such skill, wisdom and insight it deserves to be called the best example of its sub-genre yet written. Still, Robinson’s major achievement in SF so far is probably his Mars trilogy—*Red Mars* (1992), *Green Mars* (1993) and *Blue Mars* (1995)—three spacious, well-orchestrated novels tracing the terraforming of Mars from a near-future into a longer-term vision of the new world. This is all realised with such precision, such verisimilitude and such aesthetic panache that it creates a powerfully believable whole. The best of the three books is probably *Red Mars*, a book pregnant throughout with the possibilities of future terraforming, and minutely fascinating on the details of the job. Robinson handles a large and well-drawn cast of characters with aplomb, and builds to a climactic conflict between Earth and Mars that is wholly rooted in the plausibilities of political interaction. To keep some characters common to a series of novels that must (by virtue of the timescales required for terraforming) take place over several centuries, Robinson introduces a slightly dissonant longevity treatment, giving his characters a potential immortality. But although this seems opportunistic in the first two books, Robinson brilliantly

puts it—or more precisely, puts the strain such longevity places on the memories of those who live so long—centre stage in *Blue Mars*. This means that the final book in the trilogy, apart from detailing life on the aerated and oceanated Mars, meditates on the nature of memory, managing an almost Proustian penetration into questions of human memory and subjectivity.

Robinson's prose is clean and expressive, and he deftly works an astonishing amount of hard science and plausible extrapolation into his story. He is not shy, for instance, of inserting detailed explanations of scientific praxis, of including equations and sometimes lengthy infodumps. Yet the books are always absorbing rather than dull, because Robinson has the gift for selecting the sorts of data that illuminate his imaginary world. There is no shortage of impressive future technology and enormous machinery in the trilogy, not least a Martian space elevator the collapse of which (it is blown up in the ongoing war between imperial Earth and resistant Martian colonists) makes for a genuinely impressive set piece towards the end of *Red Mars*. Yet some of the most memorable aspects of the novel are rooted in the sorts of quotidian too often overlooked in other SF. For instance, what makes good soil? Clearly vital if we want to grow food, it turns out that soil is an organic machine of prodigious complexity, and the early settlers' attempts to mix it throw up complex problems that reflect back upon how much we take for granted in our everyday Earthly lives.

This is what Robinson's art is really about. He engages in the great question of the present day—environmental degradation, and what we are going to do about it—by showing with compellingly painstaking vividness and precision just how hard it would be to confect all the elements of a working vital environment from scratch. He is the contemporary writer most engaged in, and most eloquent about, ecological questions, and that is a great strength. He is also extremely skilled at handling a large cast of characters, in part because he thinks in terms not only of individuals but of functioning networks, groups and society as a whole. The downside to that, if it can be called a downside, is a tendency in the default Robinson character towards niceness. With only a few exceptions all his characters are decent human beings, with functional quantities of empathy and a general desire to make things work for the whole. Robinson's position seems to be that, statistical outliers aside, we all basically want to get along, to not hurt other people, to live in balance. His later novel, the solar-system spanning future history *2312* (2012), is like this too. Its human characters are various and multitudinous, and some have attitude, but all are pretty nice, deep down, and that niceness—the capacity for collective work towards a common goal, the tendency not to oppress or exploit—is common to almost all the characters Robinson has written. His creations almost always lack inner cruelty, or mere unmotivated spitefulness, which may be a good thing. I'm not saying he's wrong about human nature, either—although it is more my wish than my belief. What it does mean is that Robinson writes novels that tend to the asymptote of utopia, without actually attempting to represent that impossible goal. He does not undersell the difficulties of that path, but the path is the one his fiction follows, nonetheless. 'What we need,' as one character notes in *Green Mars*, 'is equality without conformity'. And in this trilogy, this astonishing combination

of minute particularity and grand vision, Robinson creates a modern rebuttal to the idea that utopian fiction is no longer possible. As *Blue Mars* ends with the planet tamed, warmed and covered with lakes and rivers (the blue of the novel's title) the reader's heart moves with the very last described action of bursting into a sudden sprint, running 'on Mars, on Mars, on Mars'.

McAuley is a very different sort of writer from Robinson, and though his *Confluence* has superficial similarities with the Mars book—a trilogy [*Child of the River* (1997), *Ancients of Days* (1998) and *Shrine of Stars* (1999)] that aggregate into a single lengthy whole, detailing the intricate interlocking societies on a huge artificial world—in fact it comes out of a rather different tradition. Though McAuley trained as an academic biologist, and has a reputation as one of the most scientifically literate and accurate writers of hard SF alive today, his best writing transcends hardness. In part this has to do with his prose, which is beautifully and lyrically worked, always much richer than the functional utility prose of most SF, never overindulged or gratuitously purple. He is also an acute observer of human individuals (though he has, I think, less sure a sense of how groups and societies function than does Robinson), and a fine grasp of literary tradition and form. Where the *Mars* trilogy reads like an encyclopedia of content to do with geology, geography, terraforming and engineering, *Confluence* is encyclopedic in a different way. *Confluence* is not only the name of the artificial world on which the events of the novel take place, it is the process by which all that flows flows *together*, into the reservoir of McAuley's imaginary realm: myth and history, religion and science, linear narrative lines and overarching recirculations and rebirths. Robinson's preferred mode is a kind of extrapolated realism of tenor, full of data and detail, with a consequent flattening of ethical contrast between individual characters. McAuley writes lyrically and affectively, and is most comfortable with the lineaments of melodrama—his big novel's villain, Dr Dismas, is a splendidly colourful bad guy, over the top in a way that does not diminish the book's complexity. *Mars* tells a vertical story of humanity achieving escape velocity, in the best traditions of golden age SF. McAuley tells a gorgeously compacted and allusive story of redemption, atonement and return, lyrically circular and potent.

One of the things that flows together in McAuley's *Confluence* is the backlist, or upriver, of science fiction itself. Created in ages past by the Preservers, *Confluence* is a 20,000 kilometres long platform constructed over a vast boat-like keel within which colossal engines await to be woken. This artificial world is populated with the uplifted descendants of myriad animal species, some recognisably Earthly, others alien, gifted with intelligence and a respect for the Law of the Preservers, not unlike the beast-men of Wells' *Island of Doctor Moreau*. Indeed, McAuley's novel is in part a meditation upon this Wellsian text, as engaged with religion and utopia as it was, although considerably longer and more complex in its working-through of consequences. Half of *Confluence* is a ruined wasteland, the result of an ancient war; the other half is dominated by a great river, down which the novel's protagonist Yama (short for Yamamanama) appears as a baby, floating alone like Moses. He, it seems, is human rather than uplifted beast, and contains within his blood nanomachines that can generate new species, and which give him some control over

the myriad swarming machines that attend every aspect of life on the world. Like Gene Wolfe's Severian (whose *Book of the Long Sun* is one of the works McAuley is self-consciously reworking here) Yama undertakes a complex and difficult journey around his far future, decaying world only to discover his end in his own beginning. McAuley manages, without blurring his focus, to render this *both* in terms of the rationalisations of pulp SF (time travel is effected by manipulating the mouths of wormholes, just as the great river that flows off this vast, seemingly flat rectangle of *Confluence* does not simply dissipate into space, but waterfalls through a portal to feed its own sources) and in terms of literary symbolic signification. And if Severian is a type of Christ, Yama is a more complex iteration of the messiah figure.

Confluence is science fiction and is about science fiction, alive to the underlying forces that have driven the genre over its development. For example, characters in the novel continually worry away at the same sorts of fundamentally religious questions that animate 17th- and 18th-century SF. A main one is the matter of free will. Early on Yama decides that 'the Preservers had set the world in motion' in order that

the bloodlines which the Preservers had raised up from animals might rise further to become their equals, and that could not happen if the Preservers interfered with destiny For this reason it was necessary that individuals must be able to choose between good and evil—they must be able to choose, like Dr Dismas, not to strive to achieve goodness, but instead to serve their own base appetites. Without the possibility of evil no bloodline could define its own best nature. [McAuley, *Confluence*, 155–56]

Theologically speaking John Milton would recognise this, and each volume in the *Confluence* trilogy leads with an explicitly Christian epigraph. But McAuley's messiah figure is also given a strictly materialist, non-spiritual set of rationales. Drawing on the theories of US speculative physicist Frank Tipler, McAuley balances spiritual narratives with materialist ones. 'Millions of years ago,' one character tells Yama on his travels, 'there was a religion which taught that individuals need never die':

Humanity ... embraced every kind of technology that could promote this end, and admitted of no god except the possibility that, at the very end of the universe, all of its followers might unite in a single entity which would have access to an infinite amount of energy and so be able to recreate all possibilities, including every human that ever lived or might have lived. [McAuley, *Confluence*, 490–91]

The novel does not require us to choose one explanation over another. Yama's incident-filled adventures actualise story as its own form. One of the most famous sayings of Arthur C Clarke (another writer with whom this novel is in dialogue) is that 'any sufficiently advanced technology would be indistinguishable from magic'. We may, of course, choose to take this as a means of explaining away the supernatural elements of, for instance, religion. Or we might take it the other way around, as a statement of the sacral quality of technology, the possibility that a materialist sublime (sense of wonder) might be able to cross over into a

genuinely religious-transcendental mode. 'Even the most fantastic stories were true,' *Confluence* tells us, 'because all stories were derived from reality. Otherwise how could they be told by men, who were creatures of this word, not of some fantasy' [McAuley, *Confluence*, 490–91]. As a pithy defence of the truth inherent in fantasies like science fiction, this could hardly be bettered.

Both Robinson's *Mars* and McAuley's *Confluence* were acclaimed inside the genre (though the former garnered rather more acclaim, in the form of prizes and so on, than the latter) without making much of an impact outside it. But there *was* a series of novels, fantastika rather than science fiction strictly speaking, which began publication in the 1990s, and which was to reverberate enormously both inside and outside genre, reaching a global audience and creating something like a phenomenon. I'm talking about J K Rowling's *Harry Potter and the Philosopher's Stone* (1997); but consideration of it, and the sea change in genre it represented, will have to wait until the final chapter.

NOTES

1. An excellent discussion of this point can be found in Brian McHale's essay 'POSTmodern-CYBERpunkISM'.
2. This mildly interesting if unoriginal conception was continued through a number of sequels, each of which neatly illustrates the thesis of diminishing returns: *Rama II* (with Gentry Lee, 1989), *The Garden of Rama* (with Gentry Lee, 1991), *Rama Revealed* (with Gentry Lee, 1993).
3. See <http://www.sfadb.com> for a full list of SF awards currently active.
4. See for instance Rob Hansen's *Then: a History of UK Fandom* (<http://ansible.uk/Then/>); Harry Warner, *A Wealth of Fable* (SCIFI Press 1992); Peter Weston, *With Stars In My Eyes: My Adventures in British Fandom* (NESFA Press 2004).
5. The comparison is presumably made because Wolfe is seen by some to be interested in memory. But Severian has the inhuman ability to remember literally everything that happens to him, where the whole point of Proust's narrator is the intensely human, gappy, intermittent manner in which his memory works. Wolfe substitutes a perfectly remembering but unreliable narrator (Severian does not tell the whole story, and sometimes lies, although it is hard to be sure when he is doing so) for the much more precise Proustian delineation by a narrator who is if anything too reliable, too dedicated to capturing the precise contours of his own imperfect memory.
6. Several have published lengthy keys to the mystery, three worth mentioning are: Michael Andre-Driussi's *Lexicon Urthus* (1994); Peter Wright's *Attending Daedalus: Gene Wolfe, Artifice and the Reader* (2003); and Robert Borski's *Solar Labyrinth: Exploring Gene Wolfe's BOOK OF THE NEW SUN* (2004).
7. My crossness has encouraged me to oversimplify the book's reception. Although many reviews did celebrate the book in these terms, and although it was short-listed for the Booker Prize, several critics took issue with what they saw as its impertinent appropriation of the Holocaust by a tricksy game-playing gentile; and one of the Booker judges (Nicholas Mosley) resigned from the judging panel in protest at the shortlisting.

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Late 20th Century SF: Multimedia, Visual SF and Others

COMICS AND GRAPHIC NOVELS

Comics, and especially superhero comics, increasingly assumed a central place in later 20th century SF. Throughout the 1980s and 1990s a new sophistication entered into the world of anglophone comics. In addition to the traditional magazine format comics, there came on the market a new mode known as graphic novels, usually issued in a series of part-formats but later collected together and bound as a single volume. In earlier chapters I argued that the vogue for SF superhero icons expressed, in a popular cultural idiom, one of the root concerns of SF: the role of the Saviour and the status of atonement in a modern, scientific post-Copernican cosmos. Few people nowadays think of these questions in theological terms. Indeed, it is one of the achievements of SF to have mediated these deeply embedded questions as thoroughly as it has through new, materialist discourses. It is worth remembering this, because any discussion of what is almost certainly the most significant SF novel of the 1980s—Alan Moore and Dave Gibbons' graphic novel *Watchmen* (1986–7)—must concede the extent to which it derives a great deal of its power precisely from this context. It is a rich and complex text, but its major themes are: the role and nature of the Saviour in a nuclear technologically advanced world; what must be done to save mankind from death and corruption; and the price that must be paid for such redemption. This is not to suggest that it can be reduced to Christian allegory after the manner of C S Lewis (it really can't). The point is not that SF is *actually* a Christian discourse, hiding conventional religious iconography beneath high-tech exteriors. It is that these are the questions that determined the modern genre at its origins, and which therefore continue to shape it; because these are the points at which a properly Copernican world view chafed at the Western *weltanschauung*. Moore, certainly, has been fascinated with the deeper problematics of the superhero saviour figure, the contradictions of his/her simultaneous divinity and humanity,

and the price s/he pays to atone for human destructiveness. This can be seen in *Miracleman* (1982–88), a satisfyingly layered updating of a 1950s–1960s superhero known in his initial incarnation as Marvelman, a name later changed to Miracleman to avoid confusion with a like-named Marvel Comics superhero. Able to transform into a near-invulnerable superman by uttering the phrase ‘kimota’, Michael Moran finds that Miracleman destroys his marriage. ‘His emotions are so pure,’ he tells his wife, speaking of his alter-ego. ‘When *he* loves you it’s gigantic. His love is so strong and direct and clean. When *I* love you, it’s all tangled up with who’s not doing their share of the washing up, and twisted, neurotic little things like that’ [*Miracleman*, 7:4]. A more eloquent summary of the painful disjunction between divine and human love is hard to find. Miracleman is more explicitly a trope for the messiah than most comics supermen; he saves the world from a devilish fate and rebuilds it as a rather bizarre and restrictive utopia.

Watchmen is set in the 1980s in an alternate USA (Nixon is still President), and is soured in that era’s nuclear anxiety. One aspect of the watch from which the book gets its title refers to the, so-called, doomsday clock, in which nuclear war was metaphorically registered on a clockface as midnight, and the number of minutes to midnight registered the immanence of this apocalypse. During the course of the novel the minute hand approaches ever closer to midnight, and the atomic destruction of the world seems unavoidable (as it did to many people in the 1980s). But the world of *Watchmen* is also one in which superheroes are real members of society. Indeed, the pragmatic treatment of the superman icon is one of the most consistent features of writer Alan Moore’s work. He imagines a world in which characters like Batman or Superman actually exist, and then teases out the minutiae of how they might actually function. In our world vigilantes are likely to be people drawn to violence, socially dysfunctional people, and some of Moore’s superheroes are like this. Others might be idealists, or performers, drawn to the (costumed) publicity of the role. Moore portrays them with an equal degree of psychological detail and verisimilitude. In *Watchmen* there are two sorts of superhero. Most, like Batman, are ordinary humans who have trained themselves or built themselves machines to enhance their abilities. At the same time there is one superhero in the novel with supernatural powers, Dr Manhattan; a blue-skinned humanoid mutated during a nuclear accident to be able to change his size, to teleport himself or others, and to manipulate matter at the atomic level by will alone. Dr. Manhattan, still residually human although cold and distant, is perhaps the true hero of *Watchmen*, the closest the novel has to a supernatural saviour.

The novel asks after the price of salvation. Ozymandias, the superhero identity of Adrian Veldt (the smartest man in the world) prevents nuclear apocalypse by faking the materialisation of a colossal squidiform alien being in New York, incidentally killing tens of thousands of innocents. This event, staged to look like the opening salvo of a fully fledged alien invasion, unites the Cold War superpowers in frightened alliance. Many more would have died in nuclear war, but is this salvation too dearly bought? In what may be an answer, of

sorts, to this question Moore has Dr. Manhattan—the closest the novel has to a god—give up on humanity. ‘I understand,’ he tells Veldt. ‘Without condoning or condemning. Human affairs cannot be my concern. I’m leaving this galaxy for one less complicated.’ [Moore and Gibbons, *Watchmen*, XII: 27] What if Christ not only denied the existence of God (‘the world is not made’, is Dr. Manhattan’s judgement, ‘Nothing is made ... a clock without a craftsman’, Moore and Gibbons, *Watchmen*, IV: 28) but abdicated the responsibilities of his atonement and left humanity for another galaxy altogether?

The artistic and commercial success of *Watchmen* helped create a microclimate of serious, adult graphic novels in the late 1980s and early 1990s. Most of these were fascinated with the status of the saviour/superhero in the modern world. Scottish writer Grant Morrison and illustrator Dave McKean published *Arkham Asylum* (1989), a sophisticated revisioning of Batman as borderline lunatic. This graphic novel recycles *Alice in Wonderland*, *Psycho*, and Lovecraft in the tale within the tale of Amadeus Arkham, the founder of the titular asylum. More importantly though, the novel posits both Batman and the inmates of the asylum—the villains from his rogues’ gallery—as embodiments of Tarot and Jungian archetypes, and explores the narrative possibilities of each, through the pretext of having Batman wander through the underworld of the asylum corridors Alice-like, facing each one successively. Perhaps a man with messianic aspirations does nothing but project scenarios of his mind onto the world, as the *Alice*-influenced villain Mad Hatter, points out: ‘Sometimes I think the asylum is a head. We’re inside a huge head that dreams us all into being. Perhaps it’s your head, Batman. Arkham is a looking glass. And we are you.’ [Morrison, McKean: unpaginated] In not unrelated mode, Japanese artist and writer Masamune Shirow achieved a certain Cartesian sophistication in his cyberpunk graphic novel *Kōkaku Kidōtai* (*Ghost in the Shell* 1991). Here, though, the technological sublime is fetishised in a more straightforwardly erotic manner, to the delight of many fans.

VISUAL ART: PAINTING, SCULPTURE, PERFORMANCE ART

SF art, largely an adjunct to the market for illustrations and cover art for genre magazines from the 1920s through to the 1960s, began to cross over into the artistic mainstream in the 1970s and 1980s. An explosion in cheap paperback book publication required a high volume of glossy and enticing SF images for cover art, and especially after 1977 SF movies needed high quality production art and related material. British artist Chris Foss has developed a very distinctive style of SF painting; using the pneumatic airbrush rather than conventional bristles enables him to create a photorealistic patina for non-realist images. Foss specialises in enormous spaceships, usually represented in flight; bulky, blocky, architectural craft rendered with a brightly coloured precision that is simultaneously monumental and precise. He is not known for his portrait or figure painting (although his sketches of copulating nudes for Alex Comfort’s breakthrough sex manual *Joy of Sex* (1972) are very convincing) except to provide

visual scale for titanic compositions. Foss' work was once seemingly ubiquitous on the covers of SF paperbacks in the 1970s, particularly his cover art for reissues of Asimov's *Foundation* and E E 'Doc' Smith's *Lensman* books. Now he is seen in some quarters, unfairly, as somewhat cheesy. Unfairly, since at its best his art achieves a striking fusion of—as it were—the 19th-century apocalyptic painter John Martin and the monumental abstracts of Mark Rothko. One sign of his resuscitating reputation is the way mainstream British artist Glenn Brown plagiarised several Foss images, repainting them and exhibiting them as avant-garde art. Brown was nominated for the 2000 Turner Prize and caused a stir when one of his most powerful paintings *Ornamental Despair* (*painting for Ian Curtis*) (1994)—a mountain girdled with a vast collar of ice in orbit around the Earth—was recognised by the SF community as a repainting of one of Foss' pieces from his own book *Diary of a Spaceperson* (1990; Foss' original includes a bright red and black spaceship that Brown omits).

Jim Burns, although as popular as Foss, is a more limited artist, whose considerable technical ability is focussed on an almost Jeff Koons-like fascination with the erotic possibilities of skin, materials and metal. That said, he never drops to the levels of unctuous soft porn made popular by Peruvian-born artist Boris Vallejo or American Julie Bell. There is nothing wrong with eroticism, of course, but the somatic objectification of these latter artists is repetitively clichéd—big muscles for the near-naked men, big breasts for the near-naked women—and so commits the worst crime for which any erotica can be indicted, dullness. More aesthetically interesting is Kentish-born artist Roger Dean, who came to widespread fame through his album covers for groups such as Yes and Asia. Dean's art is instantly recognisable; intricate alien landscapes, very colourful and exotic, with trees and features following helix, sine-wave and $x = y^2$ curves and a wealth of filigree detail. The spaces portrayed are more surreal than real, but rendered with a liberating if stylised flow.

Other artists have explored the more somatic possibilities of SF. Cypriot-born Australian Stelarc has worked since the late 1960s with a cyborg-inspired series of performance artworks. His obsolete (his own term) human body is augmented with a wide variety of technical prostheses. Stelarc is interested in information storage and retrieval as much as in purely physical additions; and his website archives his extensive body of work [<http://goo.gl/vbLpTr>]. In 2007 he had a cell-cultivated human ear surgically attached to his arm, a piece of performance art that was reviewed not only in all the performance art journals but also, perhaps uniquely, in the *British Medical Journal*, who expressed doubt as to whether this constituted a 'revolutionary new art movement' (although they did concede that 'the exhibition has some interesting art done by some clever people' Carter, 343). New York artist Rammellzee creates paintings, sculptures and rap-influenced performance art that feature elaborate collages of organic and metallic materials. As fascinated by graffiti and urban detritus as the machinic, Rammellzee adopts an almost medieval modernity. He describes his graffiti art as 'illumination', and considers that he is following the traditions of 'the monks'. Nevertheless the energetic creation of what we might call (to

appropriate Philip K Dick's term) kipple art does capture the centrifugal social forces of a world hurtling into an urban future. Another SF performance artist, or perhaps it would be more accurate to describe her as a sculptor, is French artist Orlan (she took her *nom de travail* from a variety of Russian spacesuit). Her most famous project has been a prolonged self-fashioning: undergoing plastic surgery to alter her appearance; inserting subcutaneous lumps and bumps to her face; and otherwise altering her features. Quite apart from deconstructing notions of conventional beauty (which she does in a very salutary way), she has now reached a stage where she most resembles an alien from a high-budget SF film. Certainly her aim to literalise a variety of posthuman physical identity is characteristic of the broader cultural logic of SF.

Given the many points where SF has crossed into the, so-called, mainstream in the last half century it is, perhaps, surprising that the fertile, often extraordinary world of SF painting and illustrations has had relatively little impact on the 'official' art world. The 1960s phenomenon of pop art, for instance (which we might think ripe for SF imagery), is almost entirely empty of SF tropes. Pop artists looted other forms of popular culture—war comics, love stories, women's magazines, advertisements—but not SF. One possible exception is the work of UK pop artist Richard Hamilton, whose 1960 painting *Towards a Definitive Statement on the Coming Trends in Men's Wear and Accessories* portrays what appears to be a Cyborg President Kennedy, possibly wearing a space suit, certainly looking towards the future.

But there is one suburb of the city of contemporary art that has been fruitfully cross-pollinated by SF, digital art. Perhaps it is the fact that a new generation of artists have been exploring the technical possibilities of a new idiom, one already associated with SF, that has led to this. Many digital artists can usefully be considered under the rubric of SF. Using the computer to doctor photographs enables Australian digital artist Patricia Piccinini to create images such as *Last Days of the Holidays* (2001), in which a skateboarding boy encounters a weird newt-like alien being in a sunny car park. Critic Christiane Paul calls Piccinini's work 'synthetic realism' [Paul, 37], which is a not-bad descriptor for most of SF as a genre. More characteristic of SF digital art for many are the iterated shapes and virtual-space fractal sculptures of British artist William Latham (<http://latham-mutator.com/>) or the twisted organic shapes and altered photographs of Austrian Dieter Huber (www.dieter-huber.com). Latham's work in particular epitomises an iconic look: the concretisation of alien forms whose spurious organic verisimilitude bypass the question of surrealism altogether. These are creatures that are 'grown' in the computer according to certain algorithms, not painted or constructed in more conventional ways. Latham has said that his art was inspired by Darwinist Richard Dawkins' own experiments in using the computer as an evolutionary environment.¹ Many artists have been interested in the possibilities of using digital environments to create alien forms of life, and allow them to interact. US artist Karl Sims (<http://www.karlsims.com>) has done some interesting work forming Darwinian virtual environments. One of his most famous works is named

Galápagos (in honour of Darwin and installed in Tokyo 1997–2000), in which bizarre looking creatures inhabit complex cybersystems influenced by the viewers, who are encouraged to interact with the system. By comparison Kenneth Rinaldo's interactive *Autopoesis* (2000: www.accad.ohio-state.edu/~rinaldo), in which a gallery space is festooned with robot limbs that jerk and move in response to viewers passing through, seems rather quaintly clumsy and dated; reminding us (as perhaps it is supposed to) that real space is far less malleable and aesthetically possible than virtual space.

With some digital art the viewer may be tempted to think that artists are doing things which, whilst interesting, are more effectively managed in the commercial world. Australian artist Jeffrey Shaw (<http://www.jeffreyshawcompendium.com>) created an installation called *The Legible City* (first exhibited in New York 1989) in which viewers sat on an exercise bike and pedalled to move themselves through a virtual cityspace in which buildings were replaced by words spelt from giant 3D blocky letters. There's a rather dreary literalism in this conceptualisation of virtual reality as dominated by verbal hypertext (not unlike the literalism in Gibson's straightforwardly symbolic *Neuromancer* Matrix) and the messages spelled out by the buildings lack either menace of depth (for instance 'GET WORSE IN THE FUTURE'). Much more exciting work, aesthetically speaking, was being done in the many hundreds of navigable virtual spaces being created by commercial programmers, partly in the field of video and computer gaming (below) and partly in commercial applications of digital art. Industrial Light & Magic (ILM), the special effects company founded by George Lucas in 1975 to provide effects for *Star Wars*, has grown into one of the biggest SFX companies in movie making. Although much of their work is the functional provision of effects for a variety of films, much of what they do is strikingly beautiful, and in many cases it is the visual iconography created by the ILM team that is the best aspect of any given feature.² It might be argued that it is this commercial aspect of digital art—popular, imaginative, visually unconstrained—that represents one of the most significant developments of SF in the later century.

ARCADE, VIDEO AND COMPUTER GAMES

There are three different hardware formats for SF screen games: arcade games, played on specialist machines, usually in public arcades; computer games, played on home computers; and video games, played on consoles plugged into an ordinary television. This last were by far the most popular by the end of the century, outselling computer games nearly fourfold.

The oldest of these three formats is the coin-operated arcade game; a bulky, five- or six-foot tall box with a television screen and controls at the front, positioned either singly in bars and restaurants or gathered together in specialist arcades. These developed from the coin-operated games and pinball tables popular in the West from the 1930s and 1940s (pinball is still popular in the West, as is a variant called *pachinko* in Japan). With the rapid development of computer technology in the 1970s a number of electronic arcade games

became prodigiously popular. The first arcade game was created by the Atari company (founded in 1972 by Nolan Bushnell and Ted Dabney); *Pong* (1972) reproduced in flat, white on-black, video format the logic of ping-pong. The success of this game encouraged a great many competitors to enter the market with variants. Taito, a Japanese company, released *Space Invaders* (1978), the first genuinely classic arcade game. Its designer Toshihiro Nishikado claimed to have been inspired by reading H G Wells. The game is a two-dimensional shooting gallery in which a laser cannon slides along the bottom of the screen firing up at rank upon rank of slowly descending alien invaders. Narrativeless, this game nevertheless manages to evoke with very minimal graphics and actions a genuine tension, and a worthwhile sense of the relentlessness of the inhuman attackers. It is a significant SF text both in its own right and in terms of its major influence on the development of the genre.

These first two notable arcade games emblematised the chief distinction gaming would go on to develop: on the one hand games that reproduce existing sports or games (car racing, football and so on) in electronic form; and on the other hand games that create an environment marked by a novum, or several nova. This latter sort of game has been the idiom for a number of significant SF texts. *Asteroids* (Atari 1979) replaced the invaders with collision-course asteroids, and placed the laser cannon on a fully rotating spaceship in the middle of the screen. *Galaxian* (Namco 1979) was a souped-up plagiarism of *Space Invaders*, but moved the graphic component forward by being the first colour-screen arcade game. *Battlezone* (Atari 1980) gave the player command of a futuristic tank, rendering the battlefield in three-dimensions, although with a primitive wireframe visual algorithm. The next development was the creation of arcade games that tied-in to cinema texts: notably *Tron* (Midway 1982), which was actually released before the movie; and *Star Wars* (Atari 1983), which was so successful that more sophisticated sequels (particularly *Return of the Jedi*: Atari 1984) followed. These games piggybacked on the narrative of the film, mimicking the visual look of the film text as far as possible and including vocal recordings by some of the film's stars—after losing all one's lives the arcade would hum with Alec Guinness' voice announcing that 'the force will be with you—always'.

By the mid-1980s personal computing had penetrated many homes, and a specialist market was growing up in computer games to be played domestically. Several companies produced specialist consoles, and initially the biggest games were the child-oriented fantasies *Super Mario Brothers* (Nintendo 1985) and *Sonic the Hedgehog* (Sega 1990). But SF soon followed. The first title of major importance was *Fainaru Fantajii* (*Final Fantasy* 1987) which took Japan (and after 1990 the USA) by storm, leading to a large number of sequels. The early games belonged to the fantasy genre, although later games crossed the generic border between fantasy and SF, with a group of heroic characters travelling through a complex world. A spinoff big-budget movie, *Final Fantasy: the Spirits Within* (Hironobu Sakaguchi 2001) was the first to feature realistic computer-animated humans, although its plot (soul-stealing aliens threaten a

space station) had little to do with the original games. *Star Fox* (Nintendo 1993), in which the player navigated space fighters on various missions, used a new processing chip to produce very rapid, good-looking 3-D visuals.

In *Doom* (id Software, 1993) the player is a space marine who has been banished to Mars for insubordination. A malfunction with a teleporter means that creatures from Hell start pouring into the Mars base, and the player must wander around the base shooting them. Hyperviolent and bloody, the game was extremely popular. A whole sub-genre of *Doom*-like games followed, now known as first-person shooters, amongst them the blackly humorous SF pastiche *Duke Nukem 3D* (3D Realms, 1996), and the sequel *Doom II: Hell on Earth* (1994), which was licensed by the US Marines and turned into a training tool, *Marine DOOM*.

Myst (Cyan 1993) was the best-selling computer game for much of the 1990s. In this game the player wanders about an interactive landscape, the strange island world of *Myst*. Unusually for a computer game there are no enemies to fight, no lives for the player to lose, the enjoyment derives from solving the puzzles encountered and slowly unearthing the mysterious history of this place (the game's developers Robyn and Rand Miller claimed their inspiration was Jules Verne's *L'Ile mystérieuse*, although the connection is one of mood rather than specifics). The success of *Myst* led to many game sequels [*Riven: the Sequel to Myst* (1995), *Myst III: Exile* (2001), *Uru: Ages Before Myst* (2003) and *Myst IV: Revelation* (2004)] and a thriving online fanbase. The megatext also moved out of the electronic idiom, with three novels written by David Wingrove and the games' creators [*Myst: the Book of T'iana* (1996), *Myst: the Book of Atrus* (1997) and *Myst: the Book of D'ni* (1998)] and a number of comic books published by Dark Horse. But it is as a visual artefact that the game is most significant; a large portion of its enormous success was due to its distinctive and often very beautiful graphics. *Myst* created a functioning and infinitely expandable SF universe into which fans could enter.

By the mid-1990s some video games had achieved considerable cultural crossover. One notorious craze was centred on the Japanese game *Pokémon* (Nintendo 1996), in which players collect various pocket monsters (the name is a Japanese abbreviation of this phrase) so as to fight them against one another. Developed by Satoshi Tajiri this game bred a rapidly expanding franchise in which Pokémon-inspired manga comics, collectable trading cards (introduced into the USA and Europe in 1999, these became a fanatical craze amongst many children for several years), board games, more than one TV series and a number of motion pictures. By the late 1990s scores of impressively produced SF video games were being released every year, too many to list here. Both the *Star Trek* and *Star Wars* franchises have spawned a large number of spin-off games, to say nothing of plagiarised and derivative titles—such as the *Star Trek*-like *Star Ocean* (Square Enix, 1996) series. As with tie-ins and novelisations, some of these spin-offs have been very high quality. *Star Wars: Knights of the Old Republic* (LucasArts 2003) combines absorbing gameplay with very good-looking quasi-cinematic visuals, adding material details to the imaginary universe of the film franchise. Other titles have been original developments drawing deeply on the traditions of SF. *Halo: Combat Evolves* (Microsoft 2001) is set

aboard Halo, a space habitat, through which space marines fight members of an alien race called the Covenant. Although essentially a *Doom*-style shooting game, the imagined universe of Halo represents a detailed and absorbing space opera environment. By the late 1990s video game graphics were so detailed, so well-rendered and fluid, that they have begun to constitute a new form of art. The important feature they share with cinematic and televisual SF art is the extent to which they are immersive, allowing the participants to explore a visually imaginative and aesthetically interesting virtual world.

AUDIO SF

SF radio serials have a long pedigree, going back to the popular US radio *Buck Rogers* (from 1932), or the BBC's fondly remembered *Journey into Space* (1953–58). But in the later century the shift from a verbal to a visual logic left the purely audio SF experience rather stranded. The sole exception to this owed its success to the fact that, as comedy, it was premised on the logic of the joke rather than (as was increasingly the case for other SF) the logic of the spectacular/fantastic image. The BBC initially broadcast two series of *The Hitchhiker's Guide to the Galaxy* (first series 1978, second series 1980) by British comic writer Douglas Adams. It was an immediate success. Adams' intimate knowledge of the tropes of SF interacted wonderfully with his ingenious comic imagination, and the result was a show that worked as well as SF, albeit in an absurdist idiom, as it did as comedy. Arthur Dent, an unexceptional Earthman of the sort of unredeemed ordinariness that only the English middle-classes can produce, narrowly escapes the demolition of his world when, at the last minute, his friend Ford Prefect beams him off-planet. The two odyssey through a Pythonesque galaxy, in company with the two-headed barfly Zaphod Beeblebrox and the depressed robot Marvin, the Paranoid Android. A TV version (1981), tie-in novelisations, a sadly lame cinematic version (Garth Jennings 2005) and a large body of fan-created paratexts finally led to three follow-up radio series (*Hitchhiker's Guide to the Galaxy: Tertiary Phase, Quandary Phase and Quintessential Phase* 2003–04), though the fact that Douglas Adams had died in 2001 left these without the steer that might have enabled them to excel.

But, in general, if we talk about audio SF we are talking about the intersection of the genre and pop music. It is not until the 1960s that SF properly enters into popular music (nobody would mistake Sinatra's 'Fly Me To the Moon' for science fiction). The excitement of the ongoing space programme and what Harold Wilson, then UK Prime Minister, optimistically described as 'the white heat of technology' could not fail to cross-pollinate with pop, an idiom coming into sudden spectacular flower that same decade. Early examples are not inspiring: the satellite-inspired instrumental track 'Telstar' (1962) by the Tornados is a cheesy piece of backing music that owes its redeeming, chiming, almost metallic bounciness to its producer Joe Meek. American jazz composer Sun-Ra (born Herman Poole Blount) declared himself not human, but born on the planet Saturn as

part of an 'angel race'. His inventively freeform music fleshed out this personal mythology with great potency and beauty, although without great precision. There are some of his fans (who take the story literally) who may not thank me for referring to it as a mythology. Of the more than 100 discs many are excellent, including *We Travel the Spaceways* (mid 1960s), *The Heliocentric Worlds of Sun Ra, Volume One* (1965) and *Sun-Ra and his Solar Arkestra Visits Planet Earth* (1966). A low-budget film, *Space is the Place* (John Coney 1974), dramatises Ra's arrival on Earth and his mission to save the Earth, and especially Black America.

British songwriter and performer David Bowie achieved his first significant fame in an SF idiom: first through the hippy-futurism of the song 'Space Oddity' (1969) about a modishly doomed astronaut Major Tom; and later with his 'Starman' (from *The Rise and Fall of Ziggy Stardust and the Spiders from Mars*, 1972), which steals and slightly morphs the melody from 'Somewhere Over the Rainbow' to tell a similarly sentimental story about a benign alien who is waiting to visit us until he can be sure that he won't 'blow our minds'; less gooey is 'Life on Mars' (from *Hunky Dory*, 1971), a song of almost Bradburian clarity, in which the chorus' question 'is there life on Mars?' focusses the alienation and triviality of Earthbound existence. But the most SF thing about Bowie was his stage persona, based on a derationated alien-like strangeness that had something to do with both his drug-taking and his bisexuality (a brave lifestyle, to be honest, in the 1970s). His role as the alien in *The Man Who Fell to Earth* (Nicholas Roeg 1976) cemented this persona even as Bowie re-invented himself as the chilly 'Thin White Duke'. Come the 1980s 'Ashes to Ashes' (*Scary Monsters. and Super Creeps*, 1980) recast the wide-eyed innocent Major Tom as a 'junkie/strung out in heaven high/reaching an all time low'—and Bowie's SF adventure hit a permanent downer.

Other crossovers between 1960s pop psychedelia and SF followed a similar pathway. The British band Pink Floyd started their career with lengthy, throbbing hymns to outer space as a manifestation of inner transcendence, such as 'Astronomy Domine' (from *Piper at the Gates of Dawn*, 1967) or 'Set the Controls for the Heart of the Sun' (from *Saucerful of Secrets*, 1968); but they turned to symbolic dramas of schoolyard misery or suburban depression in the 1970s. The ambitious SF rock opera *Lifehouse*, was written by British composer Peter Townshend for his band The Who in the late 1960s. This is a tale of a transcendental rock concert in a polluted near-future dystopia that makes its audience literally disappear into nirvana; but it was unfinished, although many of the songs appeared on the Who's album *Who's Next* (1971), a masterpiece of rock, certainly their greatest work and an obliquely SF text. The 1960s and 1970s vogue for themed concept albums, connected to progressive or prog rock music, was well suited to SF speculation. UK band King Crimson's *In the Court of the Crimson King* (1969), especially its long first track '21st Century Schizoid Man', gave voice to a dark vision of the future. Hawkwind, a British band that once included Michael Moorcock amongst its members, have returned many times in their extravagant mind-expanding rock to SF, with albums such as *In Search of Space* (1971), *Space Ritual* (1973) and *Warrior at the Edge of Time* (1975). *Tarkus* (1971) by the British band Emerson Lake and

Palmer, is a concept album about the battles of the titular cyborg creature, part tank, part animal. American band The Grateful Dead produced a great many albums of shambolically inspiring guitar-based music, amongst them *Anthem of the Sun* (1968), a loosely SF psychedelic suite of music, and the lengthy single song 'Dark Star' (from *What a Long Strange Trip It's Been*, 1977), whose multilayered music underpins lyrics of rather gauchely hippy obliqueness:

Dark star crashes pouring its light into ashes
 Reason tatters, the forces tear loose from the axis ...
 Spinning a set the stars through which the tattered tales of axis roll about the
 waxen wind

Canadian rock-band Rush has found inspiration in SF on several occasions. The twenty-minute title track of *2112* (1976) is a dystopian fable about the rediscovery of music in the titular year, based on Russian-born, US writer Ayn Rand's novella *Anthem* (1938). Other Rush albums, such as *Fly by Night* (1975) and *Hemispheres* (1978), drew more on fantasy than SF tropes. This taste for concept albums rooted in SF dystopia has not gone away. *OK Computer* (1997) by British band Radiohead situated Douglas Adams' comic SF (the title, and the title of the main song, 'Paranoid Android', are both quoted from *Hitchhiker's Guide*) in a much grimmer, less relenting vision of future hell. American-born Jeff Wayne's *War of the Worlds* (1978) is an elaborate pop (or pomp) rock version of Wells' novel, narrated by Welsh actor Richard Burton, and with many of Wells' actual sentences set to music, in some cases rather absurdly so (for instance, 'the chances of anything coming from Mars is a million-to-one he said'). And yet there is a certain gaudy pleasure to be had in the sheer cheesiness of the adaptation.

In a very different vein is Funkadelic, the musical collective organised by US funk musician George Clinton, who invoked the idiom of UFOs and mother ships, drawing some of their inspiration from Sun-Ra. British band ELO (the Electric Light Orchestra) fashioned a derivative mother ship UFO to promote their double album *Out of the Blue* (1977). Although the music on that album had no SF content, their later album *Time* (1981) was a future-set rock opera. But this kind of project was the exception rather than the rule. Speaking personally, I've a soft spot for *Time*—and for the various other SF concept albums I own—because I was listening to this sort of music as a child. But, fond though I am of it, it cannot be denied that most people see this sort of music (and this sort of SF) as pretentious, off-putting or even risible. It is not in this mode that SF-music has made a significant cultural impact.

SF music was especially connected with the new instrumentation developed in the 1960s and 1970s. Where electric guitars (the spine of most pop and rock) have traditional overtones, looking back to 'authentic' musics of blues and R&B, electronic synthesisers were seen as forward-looking futuristic instruments from their first invention. Robert Moog invented the first playable synthesiser in 1963, from where the possibilities of the instrument were rapidly developed. Japanese musician Isao Tomita performed synthesiser-only versions

of classical music, often managing—for instance with his version of Holst's *Planets* (1976)—to give then an otherworldly quasi-SF quality. The same is true of the original compositions for synthesiser by Frenchman Jean Michel Jarre. There is no explicit SF context to the instrumental suites *Oxygene* (1976) or *Equinoxe* (1978), but it is hard to escape the sense that these bleepy, throbbing, soaring soundscapes are aural SF. Greek composer Vangelis did something similar with his synthesiser albums *Earth* (1974), *Cosmos* (1974) and *Heaven and Hell* (1976). Tangerine Dream, a German synth-band, anchored their spiralling, pounding electronic compositions to SF with album titles like *Alpha Centauri* (1971) and *Stratosfear* (1976).

But it transpired that what we might call free composition in electronic idioms was not the future of SF music either. Instead SF music found its popular forum as a dance idiom. The key band in this regard is the German Kraftwerk, who began establishing a cyborg musical aesthetic in the 1970s, using electronic synthesisers to which human vocals were only sometimes added. In 1991 one of the group's founders, Ralf Hütter, explained that

the soul of the machines has always been a part of our music. Trance always belongs to repetition, and everybody is looking for trance in life ... in sex, in the emotional, in pleasure, in anything ... so, the machines produce an absolutely perfect trance. [quoted in Savage, 310]

Their breakthrough album, *Autobahn* (1974), found this blend of human and machinic in the journey of a car along a motorway, the liberating monotony and repetition of the journey captured perfectly in the electronic pulses and sound-effects of the music. By the time of *Die Mensch-Machine* (*The Man Machine* 1978), however, the cyborg was explicitly robotic; the four personality-free members of the band were replaced for stage shows with animated manikins. This properly SF robot music found expression in several subsequent albums, including *Computerwelt* (*Computerworld* 1981) and *Techno-pop* (recorded in 1983 although not released that year). Techno, a style of dance music that was either influenced by, or else directly sampled (that is, stole from) Kraftwerk, became a major cultural phenomenon in the 1980s. Mass dances, or raves, took place to the accompaniment of a deliberately repetitive, machinic, cyborg music ('if there is one central idea in techno,' opines Jon Savage, 'it is of the harmony between man and machine' Savage, 312). Dozens of bands and musicians worked in the style, amongst them The Orb, a British duo who combined Kraftwerk, Jarre and Pink Floyd in rambling, dancy electronic performances with whimsical titles such as 'A Huge Ever Growing Pulsating Brain That Rules From the Centre of the Ultraworld' (1990) and 'Toxygene' (1997). One offshoot from this somatic man-machine dance culture is the music of British composer Gary Numan. Numan's songs, built from a more layered, denser electronic palate, have tended to be darker and bleaker than the more escapist techno norm. He has also worked from specific SF templates; his 'Are

“Friends” Electric?’ is a doomy, synth-driven version of Dick’s *Do Androids Dream of Electric Sheep*—the inverted commas around friends neatly epitomising the teenage sulkiness of the track.

The success of techno as an SF music depends less on its aural and more on its somatic possibilities; which is to say, that it succeeds as a musical landscape into which fans can enter, which they can explore via dance and style. This is something akin to the possibilities of imaginative entry afforded by the most successful SF megatexts (the fans immersive relationship to the Star Wars or Matrix universes).

By way of footnote, some mention should be made of that kind of culture text that it would be hard to characterise as science fiction, which nonetheless has a large following amongst people who self-identify as SF fans and therefore has a sort of SF-by-proxy quality to it. Some examples might be: Sherlock Holmes stories; James Bond movies; or the NBC television series *Hannibal* (produced by Bryan Fuller, 2013–15). Often that proxy-status is literalised, as when people write steampunk SF stories that include Holmes, or when James Bond goes into space. But the, as it were, cathexis of the energies of SF fandom into such culture texts is not arbitrary. They tend to exhibit core qualities that also radically structure SF proper: Holmes is a saviour figure who operates in the materialist idiom of pure rationality; Hannibal, a sociopath who cannibalises human flesh, dramatises in gruesomely stylised form questions to do with the materiality or divinity of the sacrament.

UFOs

Closing down the 20th century leads this critical history of science fiction back to the actual world. There is something wrongheaded in discussing the cross-overs between fiction and fact as if the two territories blurred into one another, since most of us are very good at distinguishing between them. Nevertheless, and especially in the field of SF, the extent to which fiction has insinuated itself into the assumptions of real life speaks to the thoroughgoing penetration of SF into all aspects of Western culture and society, as much as it does to the porosity (which some call gullibility) of that culture.

The most obvious point of crossover is the UFO, or unidentified flying object. First sighted by US private pilot Kenneth Arnold above Washington State in 1947, sightings of these supposedly extraterrestrial craft increased in frequency through the late 1940s and 1950s, becoming a cultural commonplace by the 1960s.³ Many people today take it as axiomatic that aliens visit the Earth on a regular basis, and some believe that these craft abduct human beings and experiment upon them. One such craft supposedly crashed in Roswell, New Mexico, in 1947 with its remains and the body of its pilot allegedly being held by the US Government in a secret military installation known as Area 51 in Nevada. Government denials only calcify certainty in the minds of UFO believers, since

one of the paranoid tenets of ufology is that the government is either covering up the truth to avoid mass panic, or else is actually complicit with the aliens.

It is, to say the least, an odd coincidence that aliens began visiting the Earth in so conspicuous a manner exactly as Golden Age SF, particularly in its cinematic form, was making its first significant impact on Western culture. More level-headed commentators point to the close correlations between the cultural idiom with which people are familiar, and the explanations they give to unexplained phenomena. Howard E McCurdy, after noting that pre-scientific society talked in culturally determined ways not of ETs but of demons and magic, points out that UFO sightings in the early 1950s owed more to the success of the alien saucer from 1951's *The Day the Earth Stood Still* than to objective reality. He adds:

After an initial burst of interest, the rash of UFO sightings dropped off during the mid-1950s to an average of forty-six a month. This suddenly changed following the launch of Sputnik 1, when the number of reports rose sharply, with over six hundred sightings in the final three months of that year. Barring the unlikely possibility that aliens actually stepped up observations of Earth, one is left with the plausible explanation that the launch of the Soviet satellite excited fears that caused people to detect more unknown objects in the sky. [McCurdy, 74]

In the 1960s ufology began to acquire its own self-sustaining internal logic. The first widely reported alien abduction (Canadians Betty and Barney Hill claimed to have been kidnapped by aliens from New Hampshire in 1961) led to many copycat claims. Having been fed by the fictive logics of SF in the first place, ufology soon began to cross-pollinate the genre. Arizona resident Travis Walton claimed to have been abducted for several days in 1975; his prose account of the experience was filmed as *Fire in the Sky* (Robert Lieberman 1993), providing a new generation of wannabe believers with an imaginative framework for their fantasies. US horror writer Whitley Strieber claimed to have recovered buried memories of alien abduction under hypnosis; his well-crafted book relating the hypnotic sessions, *Communion* (1985), was a bestseller, and a film was made of it (Philippe Mora, 1989). By the late 1980s the 'truth' of UFOs was so deeply embedded that enormously popular TV shows could be premised upon it. Chris Carter's TV serial *The X-Files* (1993–2002) bestrode the puny world of TV culture like a loony colossus throughout the 1990s. Its two FBI agents Fox Mulder (David Duchovny) and Dana Scully (Gillian Anderson) investigated all manner of bizarre and paranormal goings-on, but the main spine of the show was an ongoing story arc about alien infiltration of Earth, which posited a breeding programme to cross humans with aliens, and an ever-imminent apocalypse of alien invasion and tyranny, all of which was being collaborated in by a quisling US Government. What was really significant about this show was the way so many of its fans took it not as SF but as veiled fact. Other similar shows, such as *Dark Skies* (1996–7), or the mini-series *Taken* (Breck Eisner and others, 2002), plugged into similar belief structures.

It would be merely to break a butterfly upon a wheel to object to ufology, which can be defended as a properly Feyerbandian approach to the possibilities of alien life (or at least as adding spice and potential to otherwise drab lives), were it not the case that SF as an idiom precisely mediates *religious* anxieties, and ufology does this more explicitly than fictive SF. Some ufologists interpret the dialectic of their SF-determined beliefs in materialist terms—which is to say, they believe physical aliens have travelled across space in technologically advanced spacecraft. Others, however, interpret it in specifically religious terms, often with tragic results. In 1997 thirty-nine adults committed suicide in California at the behest of Marshall Herff Applewhite, the leader of the Heavens Gate cult. Applewhite had persuaded his followers that an alien spacecraft was following the Hale-Bopp comet, piloted by a cult-member called Ti, who had ascended to a higher spiritual plane upon dying (of cancer) in 1985. Applewhite also preached that by killing themselves they would be rapturously transported there. He and his followers tied plastic bags around their heads and took phenobarbital so as to suffocate in their sleep. Similar cults are legion in the religiously promiscuous USA.

The most famous SF-based religion is Scientology, created in the early 1950s by SF author L Ron Hubbard as a development of his lucrative self-improvement programme Dianetics. Today this church contains hundreds of thousands of members, in many countries, amongst them several high-profile celebrities. Hubbard taught that human beings were immortal spiritual beings (called by him thetans) who, whilst passing through many reincarnations, have accumulated various sorts of negative spiritual energy. Members of the church can purge themselves of these, so-called, engrams via a lengthy series of courses (called auditing) provided by their church. This expensive procedure (a complete audit can cost between \$300,000 and \$500,000) transforms them from pre-clears to clears. Supposedly cleared out of the thetan's soul by auditing are the various traumas that Hubbard believed blocked the pathway of 'the bridge to total freedom', from instances of torture or cruelty in past lives to encounters with unpleasant extraterrestrial races (the Macarb Confederacy and various Invader Forces). Auditing sometimes revealed past lives spent travelling around the galaxy.

Scientologists can be aggressively defensive about their faith (the church has the reputation as one of the most litigious in the world); and from my personally atheist and non-spiritualist perspective there is nothing in this religion *intrinsically* more absurd than is to be found in many other more mainstream faiths. But, that said, it's hard to deny that Hubbard was a conman, or at best a man deeply self-deluded and an exploiter of others. Nobody who reads the many exposés of the cult—the best of them is Russell Miller's *Bare-Faced Messiah: the True Story of L Ron Hubbard* (1987)—can doubt the founder's primary motivation: 'if a man wanted to make a million dollars,' Hubbard told a New Jersey convention of SF writers in the late 1940s, 'the best way to do it would be to start his own religion' (various versions of this notorious statement have been recorded by various authorities). Tax-exempt and sheltered by

social convention from much criticism, a religion is an ideal umbrella for the unscrupulous. Many people have been entrapped and fleeced by this church. Of course, as is often the case with people who have this experience, many of them do not consider that they *have* been exploited.

The idiom of the church is deeply implicated in SF. One Scientologist was told, during an audit, that he had first arrived on Earth 74,000 years ago to battle black magicians who were ‘using electronics for evil purposes’. The account of the audit continues: ‘he then goes to another planet by spaceship. A deception is accomplished by hypnosis and pleasure implants (rather like opium in their effects) whereby he is deceived into a love affair with a robot decked out as a beautiful red-haired girl’ [Miller, 203]. Hubbard himself announced that in one of his past lives he had lived on an alien planet, manufactured metal humanoids and sold them to the local thetans, sometimes selling them outright, sometimes hire-purchase. It is the banality and cliché of these sub-pulp adventures that is most interesting. To capture the hearts of many thousands it is not even necessary, it seems, to write poetry of the calibre of the Koran or the Gospel of St John; all one need do is plunder the traditions of second-rate pulp SF of the sort that Hubbard himself was writing (at one cent a word) in the days before he found a more remunerative income stream.

NOTES

1. See the book Latham wrote with Stephen Todd: *Evolutionary Art and Computers* (San Diego, CA: Academic Press 1992).
2. Leafing through a book such as Mark Cotta Vaz and Patricia Rose Duignan’s *Industrial Light & Magic: Into the Digital Realm* (New York: Del Rey 1992) provides evidence for how strikingly beautiful these visual effects can be.
3. There is a vast literature about this phenomenon. A good place to start is Curtis Peebles, *Watch the Skies! A Chronicle of the Flying Saucer Myth* (Washington, DC: Smithsonian Institution Press 1994).

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21st-Century Science Fiction

In his 2010 study *Evaporating Genres* American critic Gary Wolfe discusses both the (as he puts it) ‘evaporation’ of science fiction and its subsequent condensation across the surfaces of culture more broadly conceived. In part this reflects the state of cultural production today, where tropes and features once associated only with science fiction appear in all manner of cultural texts, indicative of the need for art to deal with an increasingly technological, alienated and mediated social reality. Wolfe’s argument is more than this though. He thinks SF contains within itself a corrosive logic that drives its generic dissemination:

The fantastic genres contain within themselves the seeds of their own dissolution, a nascent set of postmodern rhetorical modes that, over a period of several decades, would begin to supplant not only the notion of genre itself, but the very foundations of the modernist barricades that had long been thought to insulate literary culture from the vernacular fiction of the pulps and other forms of non-canonical expression. [Westfahl, 23]

If we look at the literary culture of the 21st century so far, this seems hard to deny. For instance, the big ‘event’ books of the first decade of this new century all actualised fantastika in forms that achieved global popularity, enjoying remarkable, even staggering success. This is to judge by more than simply sales, although sales figures in the tens and even hundreds of millions are an index of impact hard to ignore. More, though, it is to lay our finger on those places where aspects of SF and fantasy became, simply, the global metaphors for a cultural generation. Three megaselling series are particularly relevant here. First, J K Rowling’s *Harry Potter* novels [*Harry Potter and the Philosopher’s Stone* (1997); *Harry Potter and the Chamber of Secrets* (1998); *Harry Potter and the Prisoner of Azkaban* (1999); *Harry Potter and the Goblet of Fire* (2000); *Harry Potter and the Order of the Phoenix* (2003); *Harry Potter and the Half-Blood Prince* (2005); and *Harry Potter and the Deathly Hallows* (2007)], which have sold something approaching 500 million books, been adapted into eight films

(several of which are amongst the highest grossing movies of all time), inspired the creation of several successful theme parks, and generated a fan culture of global reach and enormous richness. The premise of the novels seems trivial enough; Potter, an ordinary English boy, discovers he has inherited magical powers from his murdered parents, and attends Hogwarts a school where the curriculum concentrates on developing magical ability. Rowling wittily delineates her world, where the ordinary existence of non-magical people like you and I (muggles) carries on in parallel with a hidden magical realm, complete with its own governmental offices, postal service, banks and so on. The overarching story concerns the return from apparent death of an evil wizard called Voldemort, who establishes an explicitly fascistic government amongst the witches and wizards, and whom Harry and his friends eventually overthrow. As examples of the publishing category called Young Adult, these likeable, absorbing adventures were indicative of a much larger cultural shift, for YA (as the name is abbreviated) dominated the literary landscape of the 21st century. Two other YA series were globally popular over this period. The first of these was Stephenie Meyer's vampire love-story saga beginning with *Twilight* (2005) and continuing through *New Moon* (2006), *Eclipse* (2007) and *Breaking Dawn* (2008). This series has sold approaching 150 million copies, and also been adapted into some commercially very successful movies. Whilst both *Potter* and *Twilight* are fantasies, and so rather beyond the remit of a history such as this one, the other big bestselling series of the noughties is more straightforwardly science fictional, American author Suzanne Collins' *Hunger Games* trilogy [*Hunger Games* (2008); *Catching Fire* (2009); *Mockingjay* (2010)]. This near-future dystopia, also YA, follows its teenage heroine Katniss Everdeen through the televised to-the-death gladiatorial combat of the titular games, and beyond into a revolutionary uprising against the tyrannical President Snow. The books have sold approaching 100 million copies worldwide and, once again, have been adapted into a successful movie franchise.

There have been, of course, many other commercially successful novels published in the early years of the century, but these three series have dominated the publishing landscape.¹ On the one hand they demonstrate the extent to which SF and fantasy tropes have become so thoroughly dispersed into the mainstream as to be almost beyond remark. But the fact that all three were YA series is also significant. Countless millions of children and teenagers have read and continue to read these books. More to the point, countless millions of adults have done the same (Bloomsbury, Rowling's publisher, issues the novels in two formats: bright-coloured cartoon illustrations for the kids' market; moody black and white photographic covers for the adult one).

Some have seen this tidal shift towards YA as symptomatic of a deplorable infantilising of culture more broadly. Take the *Twilight* books, for instance, it's hard to deny that in lots of ways these are very bad books: clumsily written, derivative and emotionally regressive. On the other hand they speak to and move millions, and we ought to be uncomfortable simply mocking that. Such a reaction (and these books have been widely mocked in some quarters) is symp-

tomatic of an attitude that defines aesthetic merit solely in terms of stylistic or formal innovation. These novels are about something important—sex—and they write about it in a particular way, as a life-changing force that is at the same time *something that doesn't happen*. Chaste human heroine Bella contemplates having sex with her vampire lover Edward, and the novels style this as something simultaneously compelling *and* alarming, something that draws her on and scares her away in equal measure. Such a focus is quite a remarkable thing in modern fiction. The post-*Chatterley* novel has taken it as more or less axiomatic that sex is something to be explicitly and lengthily portrayed in writing. The mainstream fiction attitude to sexual representation is adult, in the several senses of that word. We need not be prudes, or advocates of Victorian sexual morality, to note that this is not actually how sex manifests in the lives of a great many people.

The *Harry Potter* novels, though formally conservative and stylistically flat, are nonetheless one of the great representations of school in western culture. School dominates our lives from age five through to eighteen, and more if we go to college. When a person is 25 (say) and reading fiction, school has been two thirds of their existence. It is our gateway to the adult world, our first experience of socialisation outside the family. Given how important it is, it is striking how rarely it is treated in mainstream literary fiction. One of the great strengths of the *Potter* books is their emphasis on the importance of friendship, over and above romantic attachment (although that also features), and the canny way the emotional and existential terrors of school are externalised into monsters and marvels. The books also develop, in unfussy and compelling style, an agenda of social justice: girls are as clever as boys; racial purity is a noisome and destructive lie; fairness, decency, friendship and love are as important on the social as the personal level.

The success of the *Hunger Games* novels crystallised a sense that the dominant mode of contemporary SF is dystopian. Panem is the USA under the logic of post-disaster poverty and centralised power; the high-tech Capitol district hoards wealth and the twelve other districts struggle with malnutrition. To act as a vent for social resentments that might otherwise lead to revolution, Capitol televises the savage games of the novel's title. Each district must send two youngsters every year as tribute, to be armed and set loose in a fenced-in environment with the stipulation that they must kill one another until only one person, the winner, is left. This grisly conceit appears to have been lifted from Japanese writer Takami Kōshun's cult novel *Batoru Rowaiaru* (*Battle Royale* 1999), also filmed, in which teens are deposited on an island, armed and informed they must kill one another. The difference is one of tone: Takami's novel is inventively savage in a wholly unsentimental way; Collins parses her violence through a dewy-eyed love story narrative that tends to take precedence over the political satire and utopian dreaming. Indeed the dystopia of the *Hunger Games* universe is of a very particular sort. It is far removed (for instance) from the harrowing anti-cathartic power of Cormac McCarthy's post-apocalyptic nihiltopia *The Road* (2006)—one of the most devastatingly affecting

novels of the decade, like Samuel Beckett with a high-velocity rifle. McCarthy's tale of a father struggling to keep his son alive in an utterly wasted land wrings his readers' hearts and leaves them wrung. Collins is doing something different, and her readers follow Katniss as she demonstrates her competence, her resilience and the strength of her peers to overcome the adversities placed before her and—ultimately—to overthrow the tyranny of President Snow. It might be more useful to think of the *Hunger Games* books not as dystopia but, to resurrect the descriptor Brian Aldiss applied to 1950s adventure narratives (above), as cosy catastrophes.² The emphasis of a cosy catastrophe is more on the first than the second term; the disaster that frames the narrative exists for our hero or heroine to have greater freedoms of adventure, and to show them overcoming their adversities. In *Hunger Games*, the whole superstructure of Panem exists really to throw into sharper relief Katniss' skill with a bow-and-arrow and her resolute refusal to give up. Similarly, Bella's entry into the vampire society of the *Twilight* books reveals a dystopian parallel world, tyrannical and cruel; and the rise to power of Voldemort in the *Harry Potter* books actualises a dystopian fascist regime. But the function of both worlds is to create dramatic friction for the books' teen protagonists, and to reinforce their specialness, rather than (say) to critique society more broadly. Indeed, one way of characterising the difference between *Twilight* and *Harry Potter* is that the former series can really only think in terms of the individual love-story, where the latter at least tries to apprehend a broader, social and generational context.

The bigger question is whether this immense vogue for YA (and for YA dystopia more specifically) speaks to a larger 21st-century cultural logic. The consonance with science fiction, a genre historically weighted towards younger audiences and often actualising the kinetic freshness and forward-looking world views of the young, is surely not coincidental. At the risk of over-generalising, I might suggest that the last century or so has seen three major shifts in the parameters of human life, radically altering the ways men and women have lived their lives on this planet. One has to do with technological advances, the scale and suddenness of which accelerated over the 20th century and reconfigured life in a thousand ways. Since SF is patently better suited at articulating the suddenly accelerated pace of technological change than other sorts of literature, this fact may go some way to explaining why the genre has become so culturally dominant. Of course it is also true that, whilst new technology *has* transformed life, especially social media and computing tech, tools and machines have been around for thousands of years, and feature in world literature going back millennia. A greater social and cultural impact has been effected by globalisation and its pendant, ethnic diversity. Humans have gone from spending their whole lives in one small geographical ambit with a small group of fellow villagers all of the same ethnos and religion (encountering cultural and racial otherness, if at all, only when male and young and in the army), to living in a global village and rubbing shoulders with people of all sorts of different races and creeds and cultures. This, I would say, is a very good thing (diversity is strength) but the suddenness with which it has happened is something the historians of the Year 20,000 will surely mark as the

great revolution of the age, bigger by far than the Industrial Revolution. We're still in the very early stages of learning how to handle it, of how to live with one another; and one of the great themes of late 20th- and early 21st-century fiction is precisely this—the postcolonial situation most prominently, reflected in a larger body of mimetic or magical realist writing. You will perhaps disagree with me when I suggest that art represents this difference better via metaphor than via realism; the alien, the monster, the symbolic other, speak more eloquently to our actual experience of being in the world.

The third cultural shift has to do with childhood. Not childhood as a biological category—which of course has always been with us—but childhood as a new cultural idiom. By this I mean more than that the concept of the teenager was invented in the 1950s (although that is, broadly, true). I mean the way that concept has mushroomed into a defining feature of so large a proportion of contemporary cultural production. There now exists a new thing, something which human life never really had before, a transition period from being ten-or-so to being 'grown up'. Indeed, this transition has expanded so much that for many people nowadays it lasts literally decades (many in the West reach their twenties and even their thirties without feeling properly grown up, still, for instance, defaulting to the pleasures, texts, movies and music of their adolescence, still playing with games and toys, and so on). But more than this is the sense that this category now determines almost all contemporary cultural production.

This is now mainstream culture. Youth culture began as a specific marketing category, invented to relieve young people of their pocket money in the 1950s—pop music, movies, TV, pulp fiction, comics and games. It is now the core of culture *tout court*, with other forms of culture pushed to the margins. Pop music grew from a sub-culture to become one of the great art forms of the second half of the 20th century, and pop is all about youth. Cinema becomes big-hitting only when it channels youth—comic books adaptations, and so on. This is the context in which to remark on the thing that links the texts constituting the dominant manifestation of SF cinema in the 21st-century. Putting aside the highest grossing film of all, Cameron's *Avatar* (2009, discussed below, and hardly adult in the fullest sense), these are all franchise movies with a distinct YA flavour. In a nutshell they are one of two kinds of movie: either direct adaptations of the three novel sequences discussed above; or comic book superhero movies.

So lucrative have such comic book movies become that studios have rushed to adapt pretty much any and all silver age comics properties. The DC Comics character Superman has been filmed often, of course, although with only modest commercial success. Another key DC Comics character—Batman—has done better: Christopher Nolan's stylish if pretentious trilogy *Batman Begins* (2005), *The Dark Knight* (2008) and *The Dark Knight Rises* (2012) took nearly \$2.5 billion at the box office. Nevertheless, the world of comic book cinema belonged a different company, Marvel. Their stable of characters—Spider-Man, the Incredible Hulk, Iron Man, Thor, Captain America and many others—were developed into a delta of parallel and cross-over movies

that dominated popular cinema in the late 2000s and through the 20-teens. The shorthand MCU, for Marvel Cinematic Universe, thumbnails the project, set in motion when the President of production for Marvel Studios established a distribution deal with Paramount in 2008. It is crass for a critical study to lean too heavily on the brute enumeration of dollars earned at the global box office, for such data rarely correlate to aesthetic merit. Then again, such data often do correlate with popular cultural impact, and in that respect that a dozen or so MCU movies have earned approaching \$10 billion dollars from worldwide box office by 2015 is worthy of remark. The films themselves have varied in quality, although several have been notable works of contemporary SF.

Phase one of the MCU release schedule aimed to give five key comic book superheroes their own movie platforms, in order to be able to bring them all together for an ensemble movie that would doubly capitalise on the fan interest thus created. Speaking in commercial terms, this strategy worked. *Iron Man* (Jon Favreau 2008) was a big hit; *The Incredible Hulk* (Louis Leterrier 2008), *Iron Man 2* (Jon Favreau 2010), *Thor* (Kenneth Branagh, 2011) and *Captain America* (Joe Johnston 2011) slightly less so. But canny corporate husbandry of fandom, spectacular special effects and the reiteration of the saviour trope so integral to SF paid off when the ensemble move *Marvel's The Avengers* (Joss Whedon 2012) became, and as of writing remains, the third highest grossing film of all time. In it, the four superheroes from the earlier movies join with an archer called Hawkeye and a token female, known as Black Widow (the gender and race politics of the MCU is very far from uncontroversial), first to fight one another, then to pull together to defeat Loki, the evil Asgardian god, foster brother of the good Asgardian god Thor. In many ways the first Avengers movie is a bitty, rather unsatisfactory film text, knowingly sacrificing overall coherence and resonance to a string of constitutive set-piece fights. But it hit a cultural sweet spot. Unity in the face of evil—the Western ‘war on terror’ as cartoon fable, something especially evident in the *Iron Man* movies—and the irruption of literal divinity (Thor, but by extension the supernatural abilities of all these superheroes) into a mediating role between mankind and the cosmic malign. All these things spoke to contemporary fears and gave shape to contemporary fantasies.

Phase two of the MCU commercial plan began with *Iron Man 3* (Shane Black 2013), perhaps the best MCU movie of all. Billionaire playboy Tony Stark, played with real charm by the ageing but still attractive Robert Downey Jr, has a magic metal suit, powered by an atomic heart inside his own chest. Iron Man’s suit, classically, is a wish-fulfilment dream of invulnerability, in medieval knight or Ned Kelly mode. What this film adds is a twofold garnish to that ancient human fantasy: first, the magic-carpet dream of jet-flight mobility; and second, the equally potent dream of perfect moral choice. For Stark’s magic suit comes fitted with artificial intelligence software that allows him not only to see everything, but also to lock-on and discriminate good from bad. In the first movie Stark is able to go to Afghanistan, kill only the bad Afghans, leave all the virtuous Afghani men, women and children alive, and then leap clean away into the sky having Done Good. It goes without saying that there is a profound men-

dacity involved in the belief that accurate moral judgement and effective ethical action are predicated upon an ontology of perfect, mechanical invulnerability. The exact opposite is the truth. Our ethical potential is grounded in our vulnerability. Nevertheless, the original film manages to distract us from this problematic with deftly orchestrated action sequences and, above all, with Downey Jr's wisecracking screen persona. *Iron Man 3*, though, addresses it more directly. The film presents its Osama bin Laden-like terrorist mastermind, The Mandarin, as antagonist only to wrong-foot the viewer with some clever and genuinely funny narrative deflation. The Mandarin is actually only a bad actor, hired by the real foe to front his programme and distract the forces of law and order. The true enemy is Western and corporate, and the movie stylishly explores both the weaknesses and the strengths of Stark's reliance on technology.

MCU phase two continued with *Thor: the Dark World* (Alan Taylor 2013), arguably an improvement on the first *Thor* movie, and *Captain America: the Winter Soldier* (Anthony and Joe Russo, 2014), inarguably an improvement on the first *Captain America* film. That *Guardians of the Galaxy* (James Gunn 2014) was a major hit surprised some people; a ramshackle and rather odd confection, it leans heavily on its 'friends together having fun' vibe with a warmth and humour that just about compensates for its lack of larger plot-coherence, menace or meaning. *Avengers: Age of Ultron* (Joss Whedon 2015) brought all the heroes again for a second ensemble piece, like the first *Avengers* movie, spotty and grab-bag but with some effective moments. At the time of writing, Marvel is in the process of rolling-out phase three, including *Ant Man* (Peyton Reed 2015), *Captain America: Civil War* (Anthony and Joe Russo 2016), *Doctor Strange* (Scott Derrickson 2016), *Guardians of the Galaxy Vol 2* (James Gunn 2017), new *Thor*, *Spider-Man* and *Captain Marvel* movies and a two-part *Avengers: Infinity War* (Anthony and Joe Russo, 2018–19). It is likely these movies will earn money.

To return to the main point. Despite some occasionally graphic violence, all these films are YA. Their apprehension of the political and social world is simplified to the point of caricature; ethics and ideology become a matter of physically attractive 'good' versus physically ugly 'evil'. Most debilitating, perhaps, is the inertia that commercial success tends to give any franchise. The drama depends upon the characters being placed in mortal peril, since only by hyperbolic exaggeration can the stakes in these flattened playground imaginary worlds be elevated to perceptible levels. But the 'popular' characters are too lucrative for the studios ever to kill them off, rendering the whole exercise pointless.

It need not be this way. American author Michael Chabon's novel *The Amazing Adventures of Kavalier & Clay* (2000) is a complex, mature reflection on the origins and continuing appeal of comic book hero characters. But Chabon's approach, as ingeniously witty and entertaining as it is profound, has proved a bow of Odysseus few could string. The movie adaptation of Alan Moore and Dave Gibbons' mighty graphic novel *Watchmen* (1986–7), having languished for years in what is called development hell, was finally released in 2009, directed by Zack Snyder. The movie is a respectful attempt to do what Moore and Gibbons pulled

off, to critique the whole ethos of costumed superheroes as agents of material salvation, by following an *Avengers*-style troupe of such heroes into middle-age and self-doubt. But the movie is ponderous and dull where the graphic novel was pointed and startling, and fell far short of MCU levels of box-office success.

In the realm of the novel, the success of *Potter*, *Twilight* and *The Hunger Games* led to an, as it were, microclimate in which YA dystopias flourished. Veronica Roth's *Divergent* books [*Divergent* (2011), *Insurgent* (2012) and *Allegiant* (2013)] are set in a post-apocalyptic dystopian Chicago that segregates the population into various castes, but which exists really as an environment in which the protagonist, 16-year-old Beatrice 'Tris' Prior, can manifest her resilience and special-snowflake qualities. James Dashner's *Maze Runner* trilogy [*The Maze Runner* (2009), *The Scorch Trials* (2010) and *The Death Cure* (2011)] is more of an ensemble piece. A group of resourceful teens find themselves dumped mysteriously in a huge shifting labyrinth, the secrets of which they must solve in order to escape before creatures called Grievors kill them. The hero Thomas escapes, to discover a post-plague dystopian world in which a group called WICKED (not a very felicitously chosen name for an organisation, one might think) has been conducting high-tech experiments in an attempt to save humanity. Both *Divergent* and *Maze Runner* were adapted into movies, and both series enjoyed a success not wholly commensurate with their limited aesthetic and derivative natures.

Not all YA writing over this century has been so meagre. Two authors in particular deserve mention. One is Malorie Blackman, whose *Noughts and Crosses* (2001) retells *Romeo and Juliet* in a racially reconfigured alt-Britain. In the novel's alternate timeline Africa conquered Europe, rather than the other way around, and Blacks are the privileged race (known as Crosses) and Whites the oppressed (known, effacingly, as Noughts). The novel's genuinely affecting interracial love story is told straight, and by doing so Blackman artfully challenges the biases concerning which many of her young readers are liable to have been ignorant. What makes the book a modern classic is the way it never sacrifices its dramatic integrity to its message, something perhaps compromised by the turn of some of the novel's sequels towards melodrama: *Knife Edge* (2004), *Checkmate* (2005) and *Double Cross* (2008). Patrick Ness is one of only a few contemporary YA authors who deserve to be ranked with Blackman in terms both of commercial success and literary skill. His *Chaos Walking* trilogy [*The Knife of Never Letting Go* (2008), *The Ask and the Answer* (2009) and *Monsters of Men* (2010)] is set on an offworld colony without female settlers—all dead, we are initially told, of a plague released by the alien aborigines known as Spackles—with the men having been rendered telepathic by the same disease, resulting in an oppressive and deafening Noise. The claustrophobia of this fundamentalist Christian settlement, and the cacophony of its telepathic Noise, are expertly rendered by Ness. Of course things are not as they first seem, and one of the great strengths of the trilogy is the way it never loses sight of its larger themes of appeasement and guilt, of atonement and choice, in tracing out the narrative trajectories of its teenage and adult characters.

THE GENRE NOVEL IN THE 21ST CENTURY

So dominant has YA become that any account of what, for want of a better term, we might call the adult genre novel must concentrate on texts that have not achieved the cultural impact of the sorts of texts previously discussed. One way to discuss this body of work would be to situate it in the context of fandom. The shaping prominence of fan culture in SF has already been discussed, and the thing to note about 21st-century fandom is how much larger and more significant it has become, both in its own terms and as a determinant of the genre more largely. The main reason for this is the internet, something of which SF fans, by virtue of their tech-savvy interests and commitment to future possibilities, were early adopters. Fandom in the old days was a cool sub-cultural performance, with interactions with other fans made difficult by distance and therefore concentrating on things like letters pages in favoured magazines and the occasional SF convention. Conventions are still important elements in fan culture. There are many more now than there have ever been, and some (Comicon in the US, Finncon in Europe, Worldcon in various locations) are absolutely enormous jamborees with tens or even hundreds of thousands of attendants. But social media have obliterated obstacles to global connections with like-minded fans, turning fandom into a hot phenomenon, fanned by the blast furnace gusts of massed enthusiasm—as when the latest trailer to an upcoming movie is released online—or massed wrath as the protocols of right and wrong behaviour are policed through shame and threats. This latter is a particularly prominent, and particularly problematic, aspect of fan cultures of the twenty-teens, and is discussed in more detail below. For the moment, to concentrate on the positives, at its best fan culture is a hospitable discursive space in which fans share their enthusiasms, express their creativity through fan-fic, fan-made memes and videos, cosplay (photos of which are shared through a variety of social media) and reviews of current SF cultural production on blogs and other online fora. SF prize culture, a notable part of literary production in the genre since the 1950s, has latterly become a key lever in selecting and promoting titles from the 700 or so original SF and fantasy novel-length books published each year. There are more prizes now than ever, and the top prizes, together with prizes for specific facets of genre (the Sidewise Award for the year's best alternate history, the Tiptree award for the year's best SF/F by a woman and so on), act as focus points for online fan culture discussion.

There isn't space here to give SF fandom the detailed discussion and analysis it merits, although studying fan cultural production and fans more generally is a boom area in SF scholarship. The International Association of Audience and Fan Studies was founded in 2008 and a great many important books and essays have been written [see in particular, Bury; Gray et al.; Jenkins; Sandvoss]. Then again, SF awards are not an infallible guide to the significance of any given SF author. Iain M Banks, to pick one example, won very few awards across his long career, yet few would dispute his centrality to late-century written SF. On the other side of the divide there are authors (it would be invidious to name

names, but fans could mention half a dozen) who have won many awards for profoundly mediocre writing.

Still, fans' perceptions are better to be trusted than the writers' themselves. There have been several occasions over the last few decades when writer-led manifestos have been issued, affiliations declared and attempts made to preemptively announce the 'next big thing'. As attempts to impose manifesto-prescriptive order upon the jungly fecundity of SF writing these have failed, somewhat after the manner of King Canute. For instance, we had the Mundanes, a group of writers particularly associated with Canadian writer Geoff Ryman, who restrict their SF to within the solar system and eschew faster-than-light travel, time travel, magic and other such improbabilities. The label fits the gifts of Ryman well, a master of emotionally grounded fables that are so fully realised and well-written they easily achieve escape velocity from their own intertextuality. *Was ...* (1992) brings a heartbreaking emotional maturity to the material of Baum's *Wizard of Oz*; and *Air, or Have Not Have* (2004) brilliantly anatomises the effect of a kind of wireless internet technology on the communities of the Kazakhstan-like country of Karzistan. But Ryman aside, the Mundane manifesto has had relatively little impact on the development of the genre.

Then again there was the New Weird, a group of early-century writers advancing a dark and knobbly aesthetic based upon a love for the fantasies of H P Lovecraft, Mervyn Peake and, more recently, M John Harrison. Harrison's ironically titled *Light* (2002) was ecstatically greeted as a masterpiece by many in the SF world, and the many may well, in this case, be right. Its powerhouse assumption of pretty much all the old conventions of space opera is impressive, although the more lily-livered amongst its readers may baulk at the way Harrison then puts them through a prism, refracting them into relentless cruelty and calculated ugliness. But the book is an immense achievement by any standards. Some New Weird writers have made a considerable impact inside the genre and some even outside it, most prominently the inventive, gnarly and marvellous British author China Miéville. Miéville came to genre prominence with a string of high profile novels set in and around his Gormenghastly urbs, New Crobuzon. *Perdido Street Station* (2000), *The Scar* (2002) and *Iron Council* (2004) rapidly established themselves as contemporary genre classics, in part because of Miéville's keen ability to match monstrosity as a subject with a monstrosity of form that restlessly rotovates the compacted clichés of alien-human interaction. Sometimes gauche, always startling and vital, shaped by a social conscience that never trespasses on the deformed integrity of his vision. For many, Miéville's masterpiece is *The City and the City* (2009), an uncanny *policier* set in the imaginary European city of Beszel, which exists in a weird superposition with its own alter-ego, the city of Ul Qoma, this latter being 'not seen' by the inhabitants of Beszel even though it is right there. *The City and the City* works its metaphorical density with great deftness, and is eloquent on the way modern urban living depends upon a tacit blindness to certain elements (the homeless, for instance). It would be harsh to criticise the novel for being too accomplished, when that very fluency was one of the things that helped

him cross over from genre to mainstream literary success. Nonetheless it may be that his genius is best expressed in a different sort of text. The twenty-eight shorter pieces of *Three Moments of an Explosion: Stories* (2015), freed of the expectation that they aggregate into a unified whole, express something more centrally Miévillean; the sense that the weirdness of the world inheres in a kind of busy fragmentation, a pulling apart that continually drags the quotidian into the strange. It might have looked for a while as though British author Justina Robson was a New Weird, at least to judge by the splendidly monstrous, vast machines that move through the vacuum of her ironically titled space opera *Natural History* (2003). But Robson's subsequent career shows the danger of such pigeonholing. Her work is *sui generis*, as fascinated by elegance as by monstrosity (often by those points where the two categories meet), simultaneously widescreen and intimate in affect. Her *Quantum Gravity* books [five volumes from *Keeping it Real* (2006) through to *Down to the Bone* (2011)] concern the multiverse adventures of a cyborg security operative, but are told in a way that eloquently and formally cyborgises its different modes: high fantasy, cyberpunk gritty, alien romance.

An attempt to turn this cross-generic fertilisation into a movement as Interstitiality, has also floundered rather than boomed. A US-based Interstitial Arts Foundation promised to champion a commendable catholicism of aesthetic approach, but has not made a noticeable cultural impact. Jeff VanderMeer, himself a talented writer of bizarre fantasy, was initially persuaded in 2003 by the movement's promises ('a real renaissance has come about ... [interstitial] has captured not just the moment but the nature of this sea change in literature'). Only a year later he was qualifying his support (he says he has 'soured' on the term, arguing it is becoming 'insular and one-sided') [VanderMeer, 44, 50]. Sometimes bracketed as a New Weird writer, VanderMeer has matured into something distinctly *sui generis*. His widely acclaimed *Southern Reach* trilogy (*Annihilation*, *Authority* and *Acceptance* all published in 2014) is, amongst other things, an attempt to write a new kind of strange pastoral for the 21st century, set in and around a strange zone called Area X, a site of alien intervention (perhaps) in which nature has become estranged from the human and the characters are themselves altered by the uncanny, pulsing life of this wild zone. As a metaphor for the world's current state of environmental peril, and our curious indifference as a species to that fact, this series can hardly be bettered. But it is weird only in the general, not the literary affiliation, sense of the word, and interstitial hardly at all.

A fourth movement has been less programmatically described. It is the New Space Opera or New Hard SF, and includes work by writers who are able to finesse proper, often scrupulous and detailed, hard science research with literary sensibilities. Paul McAuley (discussed above), just to take the example of his Quiet War series [*The Quiet War* (2008), *Gardens of the Sun* (2009), *In the Mouth of the Whale* (2012), *Evening's Empires* (2013)], composes subtle, multifaceted novels that adhere rigorously to science as it is presently understood, to the point of incorporating the very latest research from Jovian space probes. The result is satisfying novels that are also up-the-minute gazetteers

of the solar system across which their future-history is unfurled. Welsh writer Alastair Reynolds trained as an astrophysicist, and the *Revelation Space* series that made his name [*Revelation Space* (2000), *Chasm City* (2001), *Redemption Ark* (2002), *Absolution Gap* (2003), *The Prefect* (2007)] ranges widely across its future cosmos, accentuating a neo-Gothic sense of wonder, darker and more flavoursome than many, without sacrificing its adherence to actual science. Reynolds' later *Poseidon's Children* trilogy [*Blue Remembered Earth* (2012); *On the Steel Breeze* (2013); *Poseidon's Wake* (2015)] is a glass of light compared to the studied darkness of Reynolds' earlier works; humans and (later) transhumans expand to colonise the galaxy in a grand vision that sets out to encompass human variety in myriad forms. Finnish author Hannu Rajaniemi's Jean le Flambeur series [*The Quantum Thief* (2010), *The Fractal Prince* (2012), *The Causal Angel* (2014)] manages the not-inconsiderable achievement of seamlessly blending colourful planetary adventure with the most up-to-date and precisely rendered advanced physics in the genre. More recently American Anne Leckie swept the board of genre awards with her smart, gender-deconstructive if otherwise traditional military-SF novel *Ancillary Justice* (2013).

More characteristic of SF is the less strenuous and exacting business of the New Space Opera, in which audiences nod at such impossibilities as faster-than-light travel, artificial gravity and the like. Scotsman Charles Stross has won acclaim and a wide audience for his varied, entertaining hard SF which, like Rajaneimi, he likes to cross-pollinate with fantasy tropes. Of his many novels, the post-singularity adventure *Accelerando* (2005) may be his best. Lois McMaster Bujold (discussed in a previous chapter) continues to win and be shortlisted for many awards. Fandom rallies round such writers. Sometimes fandom generates its own. Perhaps the key example of this latter phenomenon is American writer John Scalzi, who having attracted a large following through his witty, trenchant blogging parlayed his popularity into becoming a lead genre author. His first novel, the Heinlein-like *Old Man's War* (2005), began life serialised upon his blog before being picked up by a mainstream publisher, becoming a bestseller and picking up a Hugo nomination. Scalzi's eleventh novel, *Redshirts* (2012)—a smart novel-length riff on the old SF in-joke that minor Star Trek security details, identifiable by the crimson-colour of their uniform, were doomed to die early in any given episode for dramatic effect—won the Hugo. By the twenty-teens Scalzi had become a major player in SF. A rather different path, although similarly reflecting online fan engagement, was trodden by Andy Weir, an American computer scientist who self-published his first novel, *The Martian*, in 2011. The novel concerns an astronaut, Watney, stranded on the red planet, who has to bodge and fix-up a living habitat to survive the years until rescue can come from Earth. The science is scrupulously worked, and though the prose is utilitarian and the plot repetitive and predictable, Watney is a can-do and likeable protagonist and the whole is very readable. *The Martian* was originally published for free on Weir's website in 2011, then as a 99-cent e-book, before a major publisher acquired it and issued it as a regular novel in 2014, to worldwide success and a major film deal.

Weir's success points to the shifting logic of commercial publishing. The internet has lowered the bar for publishing, and a tsunami of original writing has risen up. Most of this tidal wave, as one would expect, is dreck, and the small portion of valuable work is liable to be drowned out in the flood. Conventional publishers are attempting to position themselves as gatekeepers of quality, although it remains to be seen whether a market model that requires charging customers for a product that is, in other forms, being given away free so promiscuously online is sustainable. One can only hope it is.

The liquidity online interactions have created in SF fandom is proving both a good and a bad thing. On the positive side it has opened both SF itself and the pleasures of community to fans on a genuinely global scale. One downside has partly to do with the facelessness of online interaction, where people not otherwise particularly wicked or sociopathic feel disinhibited from directing profoundly damaging sexist, racist and homophobic aggression at people that, were they to meet them face to face, they would surely treat with common courtesy. The result is that online interactions can be hateful, hurtful places, something noted above, and discussed in greater detail below. For the moment I want to concentrate on a separate consequence of the mass acculturation of SF. It is that a debilitating gap opens between privilege and disadvantage; between, say, those SF texts that attract large-scale financial investment in the hope of even larger rewards, and everything else. Or to put it more broadly, between a small cadre of White, Western SF texts and the rest of the world.

It is one of the axioms of movie production that SF suffers a problem other genres do not. The producer of a science fiction film must budget for all the usual expenses of making a movie, whilst also setting aside extra money for the special effects (SFX) audiences have come to expect. Cheap SFX are derided, but the bill for providing high quality effects can match or even exceed the costs for all the other aspects of making the film. The practical effect of this is that SF films only become viable if a very large budget can be secured, which limits the kind of movie being made to major blockbusters. This can prove lucrative, as the list of highest-grossing movies appended to Chap. 13 shows, although large-scale flops are also common. More to the point, it tends to squeeze out the mid-budget films of the sort that characterise genres such as romance, comedy and (strangely, given what I have been saying) horror. This has produced a distinct change, and indeed a coarsening, in the culture of SF. Now, of course, big budget films have always been a part of SF; Lang's *Metropolis* cost \$1.3 million to make, and that was in 1920s money. But once upon a time mid- and microbudget films could play a rôle in genre history disproportionate to their financing, with works like Marker's *La Jetée* (1962) and Carpenter's *Dark Star* (1974) having a major impact on SF despite their modest production costs. In one sense film-making is more democratic than ever, with cheap modern technologies and the possibility of distribution via online sites such as YouTube. Nonetheless, it is hard to point to microbudget genre films that have genuinely broken through into broader SF fan consciousness, and even much-heralded mid-budget movies like *Moon* (Duncan Jones 2009) have had only limited impact. A movie such as the

neatly cat's-cradle time-travel thriller *Looper* (Rian Johnson) is notable, but its production budget of over \$30 million hardly counts as small change. The result is a culture of SF cinema not only dominated commercially but also defined aesthetically by Hollywood: MCU films; big franchise movies extruded by corporate cookie-cutters; and the occasional one-off like *Avatar* (James Cameron, 2009). Since the main determinant in SF film production today is a risk-averse corporate culture of returns on investment, only tried and tested 'properties' tend to get the green light. Cameron's multicolour planetary adventure is an exception, although one only Cameron (the director of the insanely lucrative *Titanic* movie and creator of the *Terminator* franchise) could get away with. A simple enough story stretched over three hours, it tells of a paraplegic space marine called Jake Sully who explores the distant planet of Pandora by means of a remote-control cloned avatar, styled after the aboriginal species of eight-foot blue-skinned humanoids. Humans are commercially exploiting Pandora and disturbing its yin-yang natural balance, and Sully eventually transfers his allegiance to the Pandorans, helping them lead a fightback against the colonists from Earth. The success of the movie, inching towards \$3 billion dollars in box office returns alone, reflects less this rather secondhand narrative than it does the rich, extraordinary and immersive visual environment Cameron created, fauvist in colouration, detailed and exotic, landscapes like Roger Dean album cover art. It is of course kitsch, but kitsch raised to an unprecedented level.

In movies, money is the regulator. Prose SF is cheaper to make, and therefore more diverse, but diversity in the 21st-century SF novel only goes so far. Here the determinant, also at root commercial, is linguistic. For a novel to make an impact it really needs to be available in English. This, clearly, does not serve the interests of diversity, and it fails to reflect that SF is now a genuinely global phenomenon. But although SF fans come from every kind of culture and part of the globe, prose SF remains dominated by anglophone publication.

Such a statement simplifies a much more complicated situation. It is, of course, possible for non-anglophone SF writers to make good careers for themselves outside the US–UK axis. An example might be German writer Frank Schätzing, who produces very successful SF thrillers like the deep-sea alien-menace blockbuster *Der Schwarm* (*The Swarm* 2004) and the space exploration thriller *Limit* (2009). Schätzing is a populist, and not a very interesting writer, aesthetically speaking, but one whose high sales presumably compensate him for the lack of respect from the German SF critical community. The converse may be true of writers as vivid and imaginative as multiple award-winners Andreas Eschbach and Dietmar Dath, neither of whom have sales commensurate with their talent, both of whose *oeuvres* have been only very patchily translated. In China, Liu Cixin's inventive, hard SF alien-invasion saga *Three Body Problem* trilogy [*Santi, Three Body* (2006), *Hei'an Senlin*, *The Dark Forest* (2008) and *Sishén yǒngshēng*, *Death Eternal Life* (2010)] has sold millions. Like Schätzing he benefits from writing in a language with many speakers, although global popularity has so far eluded him, something which may be changing as his work is translated into English. Authors whose native tongue is shared by a smaller pool must become bilingual—for example

Israeli author Lavie Tidhar, whose twisted, quick-witted novels mash-up pulp and literary aesthetics; *Osama* (2011) and *A Man Lies Dreaming* (2014) are written (expertly) in their author's second language. Less linguistically accomplished writers must rely upon translation to bring their books before the notoriously linguistically conservative anglophone markets. Haikasoru, an imprint devoted to translating Japanese language SF was formed in 2009 in America, and has enjoyed some success. Hiroshi Sakurazak's tidily plotted *Ōru Yū Nīdo Izu Kiru* (*All You Need is Kill* 2004: the title is an approximation of the English phrase rather than grammatical Japanese) was released in an English-language version in 2009, and received a boost from the success of the Hollywood movie version, *Edge of Tomorrow* (Doug Liman, 2014). Project Eto's *Hāmoni* (*Harmony* 2008, released in English translation 2010), though a better novel, did much less well. At the same time, Swiss writer Laurence Suhner, whose *QuanTika* trilogy [*Vestiges* (2012), *L'ouvreur des chemins* (2013), *Origines* (2015)] is certainly amongst the best hard SF series of recent years, has struggled to finance the translation that would surely open up a wider audience for her work. There are people like her writing in just about every world language.

In other words the de facto globalisation of science fiction as a genre has resulted in a large body of multinational work that has too little impact on the culture of the genre as a whole, and a small monocrop of commercial titles that have too large an impact. Jamaican writer Nalo Hopkinson melds Caribbean culture and SF tropes to vivid effect in her writing. *Brown Girl in the Ring* (1999) was respectfully received by the SF establishment, although the increase in literary sophistication and imaginative potency in her later novels—first in the far-future pandimensional *Midnight Robber* (2000) and then in the rich quasi-historical fantasia *The Salt Roads* (2003)—has not been matched by an equivalent uptick in her global fame. Perhaps Hopkinson's greatest contribution to 21st-century SF has come through her editing of a series of influential anthologies that provided a significant platform for writers of colour: *Whispers from the Cotton Tree Root: Caribbean Fabulist Fiction* (2001); *Mojo: Conjure Stories* (2003); and especially *So Long Been Dreaming: Postcolonial Science Fiction & Fantasy* (2004). In a sense Hopkinson provides a metaphorical bridge from the largely White 20th century into the more multiracial and multinational cultural world of the 21st. Writers like African-American N K Jemisin and Nigerian Nnedi Okorafor have, in a sense, come to wider attention in part because of this bridge, although it clearly helps both authors' case that they write in English.

I am aware of the likelihood of bias here. Of course it is often the case that middle-aged people (such as I) tend to overvalue the culture familiar from their youth, and to over-denigrate newer cultures simply because they are new. So we might say that the contemporary situation in SF replicates the logic of the genre in the 1940s or 1950s in terms of monolithic superstructure and variegated substructure. In the past, many small-scale varieties of SF occupied the multifarious niches provided by the latter, whilst a non-SF mainstream mostly ignored everything but its own concerns. The difference today is that the cultural mainstream is now a monolithic version of SF/fantasy itself—blockbuster

movies, SF games, bestsellers in the *Harry Potter* or *Hunger Games* mould—where the small sub-cultures of SF have become ever more various and diverse. This is perhaps not a wholly unhealthy situation, culturally speaking. A proliferation of queer SFs, postcolonial SFs, postmodern SFs, fanfic SFs, retro SFs, experimental SFs and all manner of other kinds is produced and consumed in a varying genre microclimate. Still, and alas, it is rare for such texts to achieve larger prominence, and when fan-generated material does ‘break through’ it is more likely (as per Scalzi and Weir) to approximate to the dominant culture.

That dominant culture has certainly become less adventurous and less exciting over the last decades. It is hard to raise the claim in the previous sentence out of the swamp of mere assertion, since the evidence must be aesthetically evaluative rather than mass-cultural—as far as the latter criterion goes, after all, SF texts are more popular now than ever. Two indicative case studies—the first Jossic, the second Jurassic—are here presented, as a very thin gesture in the direction of supporting evidence. American writer Joss Whedon acquired a dedicated fanbase through the cult TV series *Buffy the Vampire Slayer* (1997–2003), a reconfiguring of the vampire tropes around modern conceptions of gender and youth culture. The show was always sprightly and some episodes amount to genuine masterpieces of wit, verbal and conceptual. One thing Whedon deserves more credit for, arguably, is his commitment to feminism as a representational and lived-experience fact of life; he stands as high-profile proof that one need not be a woman to be a feminist. Whedon carried through his sharp intelligence into his 26th-century space Western *Firefly* (2002). This show was much loved but little watched, in the sense that the group of people who loved it muchly was not numerous enough to satisfy studio executives. Cancelled after only one series, it was resurrected for a motion picture (*Serenity*, Joss Whedon 2005), which flopped. The series, and the film, did not deserve this fate, since both were unusually skilful, funny and memorable. But Late Capitalism is interested in money, not in deserving cases. Whedon’s creation of an online-only drama, the genuinely hilarious ‘Dr Horrible’s Sing-Along Blog’ (2008) saw him, in effect, returning to a fan idiom, and the blog was widely admired. It was also fairly lucrative; but with his scriptwriting and directing job on the Marvel blockbuster *Avengers* (2012) Whedon moved into a different class of financial success. He also wrote and directed the follow-up *Avengers: Age of Ultron* (2015). Still, to compare the extruded corporate product of these two movies, in which the trademark Whedon intelligence, quirkiness and wit has been reified into scattered quips and catchphrases and slathered over with blandly interchangeable SFX fights, explosions and nonsense, is to mark a reputation that has swapped unique brilliance for the blandness of billion-dollar-earning franchise texts.

Then again, compare the movies *Jurassic Park* (Steven Spielberg 1993) and *Jurassic World* (Colin Trevorrow 2015). The first, which launched the Jurassic franchise of dinosaurs-eating-people adventure, is almost a model Hollywood movie. The premise is genetically reconstituted dinosaurs (most of these are technically Cretaceous, not Jurassic, creatures; but let us not become pedants)

displayed to the public in a specially designed theme park. The unintended consequences of this project lead to dinosaur mayhem and human casualties. The movie flawlessly delivers the thrills, tension and run-and-chase excitement one would associate with such a premise; but part of Spielberg's genius as a popular artist—and genius is not too strong a term—is his ability to splice-in grandiose moments with an especially piercing mode of *intimacy*: kids'-eye terror as velociraptors stalk them through a stainless steel kitchen; the intimation of a giant T Rex's approach via ripples juddering over the surface of a cup of water (that last has become culturally iconic). Of course *Jurassic Park* is neither Shakespeare nor Bergman, but it is clever, enjoyable and satisfying. It earned a lot of money, but the latest (of five) sequels, *Jurassic World*, has earned much, much more, despite the fact that it is a considerably more meretricious piece of work. For one thing, two decades of dinosaurs in popular culture (these creatures are especially popular with young kids) has as often valorised as demonised them. *Jurassic World* is substantially confused as to whether its raptors are dangerous predators who could eat any of the main characters at any time (as in *Park*) or human allies in the war against worse Sauri and the personal posse of hero Owen Grady (played by Chris Pratt). They can't be both and remain coherent as part of the story, although the film swaps from one to the other and back again for local effects of tension and thrill. The franchise is more than a Park, now, it's a World and, as such, this movie is in part *about* diversity. The biodiversity of the dino-park tropes actual environmental and human diversity, but that diversity is a thin skein in this text. Our point-of-view characters are all White. Uncoincidentally, all survive. Of these four, two are kids and so universal ciphers. Of the adults, one, Chris Pratt's Owen, is a Natty Bumppo figure. The other, Claire (Bryce Dallas Howard) is an uptight WASP female whose redemption requires her, figuratively and literally, to let her hair down and so find sexual redemption with our handsome male lead. A text need not specifically push a racial or cultural stereotype at the viewer for that stereotype to figure in the way the film works. It's enough that the characters play into its (White, Western) audience's tacit beliefs. For instance, Simon Masrani (played by Irrfan Khan), CEO of the Masrani Corporation and the owner of Jurassic World, is one of the good guys, shown resisting the attempts to militarise his dinosaurs, and characterised as much by his compassion as his business smarts. To an extent this plays into stereotype; 'everyone knows' that Indians are good at compassion (Gandhi and so on), at the same time, the film doesn't really take Masrani seriously. He's a bit of a joker, something of a clown, thinks he can fly a helicopter when really he can't. To say that Indians are a bit ridiculous, and a bit incompetent, is to advance a much more destructive racist stereotype. There's one Black African, Omar Sy Barry, a raptor wrangler ('noble', 'at home in the jungle'), whose job it is to play second fiddle to Chris Pratt's Owen, and who is saved from dino-death *by* Chris Pratt, rather than (say) the other way around. The movie gives us one Far Eastern character, B D Wong's smirking Dr. Henry Wu, the park's chief geneticist, who turns out to be hiding a devious and evil scheming nature behind that inscrutable smile, checking almost every box on the offensive orientalist stereotype list. What might the

film have been had any one of the four White leads (man, woman, two good-looking kids) been killed? Tragic, or at least more so. The audience is relieved that they survive, and unconcerned that lots of other people die, because this is a film that says the other people who die are not *our* people. This may read as heavy-handed, but it gestures towards a broader critique. In fact, the problem with *Jurassic World* is not that on the level of content it prioritises and valorises privileged White experience over that of other cultures, races and classes. The problem is more structural; the vacuity of a product in which older ideological biases determine everything about the text, and that text then itself reinforces (for instance) the necessity of capitalist consumption, the heroism of individual action, and the redemptive potential of violence.

VISUAL TEXTS

The proliferation of SF visual texts posited in the previous chapter accelerated into the 21st century. TV, though it has expanded prodigiously through the 21st century in terms of numbers of channels, global reach (thanks to new satellite technology), budgets available for (some) drama and money earned, may not have provided definitive SF for the 21st century. The TV drama serials that have most combined critical respect with ratings—shows like *The Sopranos* (six seasons, 1999–2007), *Breaking Bad* (five seasons, 2008–2013) and *Mad Men* (seven seasons, 2007–15)—have not been SF. Of course a great deal of science fictional television has been made, but few of the myriad shows have broken through in a big way. One attempt to resurrect *Star Trek* for the small screen—the prequel serial *Star Trek: Enterprise* (2001–05) closed after only two seasons, although the relaunched *Doctor Who* (2005–present) has done rather better. J J Abrams created a number of notable SF series, not least the low-burn cult show *Fringe* (2008–13), a rather scattershot distant relative of *The X-Files*. Abrams saw greater ratings success with *Lost* (six seasons 2004–10), a show following the adventures of survivors of a charter flight that crashes on a remote Pacific island. For a while *Lost* drew viewers in, many strange things happen on the island, and for a long time the show left unresolved whether these were supernatural or artefacts of advanced science fictional technologies—the way characters died and returned to life suggested the former, the use of time travel the latter. *Lost*'s final series, though, tied-up its myriad loose ends in a way that revealed a central conception as silly as it was banal (the island turns out to be a magical battleground between one good and one wicked deathless entity, the former recruiting mortal helpers and the latter trying to destroy them), which alienated many of the fans who had followed the show. With hindsight it is a lesser text than many of us thought at the time. Similarly, although less catastrophically, the relaunch of 1970s TV serial *Battlestar Galactica* (five seasons, 2003–09) frittered away some very promising initial episodes in middle-series longueurs and a trivial faux-surprise denouement. At its best, though, the show parsed recognisably frail and complex human characters via a genuinely believable, darkly friction-ful space opera world. One other successful SF TV show deserves mention here, *The Walking Dead* (2010–pres-

ent), a gruellingly downbeat drama in which put-upon humans struggle to survive in a world shattered by the zombie apocalypse. The show was adapted from a highly regarded comic book serial of the same title, written by Robert Kirkman and illustrated by Tony Moore (2003–present). The relentless way this work punishes its characters approaches mere cruelty, although the more the characters suffer the more fans seem to like it. This doubtless connects with the larger cultural predilection for dystopia that has characterised so much 21st-century SF. A slightly less grim comic book treatment of partial apocalypse is *Y: the Last Man* (2002–08), written by Brian K Vaughan and illustrated by Pia Guerra. The premise for this series is a mysterious plague that kills all bearers of the Y chromosome—all males of any species—except for the protagonist, Yorick Brown and his pet capuchin monkey. The comic is varied and often witty and, whilst not shy of the sexual potential of this lop-sided gender world, it addresses serious questions of power and gender on its way to a, broadly, happy ending.

Bryan Lee O'Malley's *Scott Pilgrim* (2004–10) graphic novel sequence is also largely concerned with the relations between the genders, treated in this case through an engaging and well-observed anatomy of contemporary geek culture. Only marginally SF in terms of content, the large success of this comic—and its cinematic adaptation, *Scott Pilgrim versus the World* (Edgar Wright, 2010)—reflects upon genre in a meta-way; genre fans are the subject of the narrative, and science fictional ways of perceiving the world inflect the events of the series. More conventionally science fictional is *Saga* (2012–present), written by Brian K Vaughan and illustrated by Fiona Staples. *Saga* is a capacious space opera, influenced by *Star Wars* and *Flash Gordon*, largely concerned with the (if you'll excuse the pun) star-crossed love of its leads, winged Alana and ram-horned Marko, two lovers from different planets at war with one another. It is bright, inventive and visually gorgeous work.

SF and fantasy have a major place in video game culture, although perhaps not quite as dominant as their place in movies. It is hard to gauge. If we rank according to sale, then the bestselling video games, across all platforms (the emergence of smartphones and tablets as modes for game playing has of course massively expanded the market) are probably abstract puzzle games like *Tetris* (Alexey Pajitnov, 1984) and *Candy Crush Saga* (King, 2012)—this latter, despite its name, not a saga in any narrative or character sense. Some commentators consider Twitter a game, and it certainly demonstrates game-like qualities, although not intrinsically science fictional ones. If we restrict ourselves to games that create a realised world in which playable characters move and interact, then the best-selling series may well be *Grand Theft Auto*, first released in 1997, set in a contemporary California and enabling the player to enter a crime/noir or thriller world. *Grand Theft Auto V* (Rockstar, 2013) sold 85 million copies, and *Grand Theft Auto: San Andreas* (2004) 30 million. These games, together with games that mimic regular sporting activities (football, tennis, racing cars and so on) account for the majority of video game sales. But games are well suited to the visual spectacular of SF, and the detailed, often visually intricate, world-building of SF games can be a wonder

to behold. The *Halo* franchise [*Halo 2* (Bungie/MS 2004) and *Halo: Combat Evolved* (Bungie/MA 2001) are the best of them], a military SF first-person shoot game, creates its own varied space opera universe, in which supersoldiers are sent to fight a mysterious alien species called the Covenant. *Destiny* (Budgie 2014) was, at the time of its launch, the most expensive game ever developed. Gameplay is spread out across a solar system once colonised by prosperous humanity, later overthrown by mysterious alien forces. From Earth's last safe city warriors travel to a range of beautifully rendered environments to explore and inevitably to fight. These visual worlds are worthy of admiration, more so than other rather limited narrative component or repetitive shoot-the-aliens gameplay. The game *Star Wars Battlefront* (EA 2015) renders the familiar environments of the *Star Wars* movies with quite extraordinary freshness and detail, turning the films into properly interactive and immersive playground. It's just a shame the narrative is so thin.

Cultural critic John Lanchester considers gaming a sort of invisible seismic shift in culture, and one of the things he is eloquent about is the *difficulty* of most video games. Here he is on Ken Levine's 2 K Boston/2 K Australia game *BioShock* (2007)—set in an underwater city intended as a utopia, but a place where a genetic agent designed to turn people into superheroes has malfunctioned. Lanchester likes the game a great deal:

As a video game, *BioShock* fully subscribes to the conventions of the medium, and if you as a non-gamer were to pick it up and give it a try, it is these you would probably notice most. Not just the conventions of which buttons and levers you press to move about the world of the game (annoying and hard to recollect as these often are) and not just the in-game mechanics, such as the 'plasmids' which you have to inject to give your character the powers he needs, or the tapes which are conveniently left around for you to discover and play back to hear the story of Rapture; but also the whole package of conventions and codes and how-tos which become second nature to video-game players, but which strike non-gamers as arbitrary and confining and a little bit stupid. Northrop Frye once observed that all conventions, as conventions, are more or less insane; Stanley Cavell once pointed out that the conventions of cinema are just as arbitrary as those of opera. Both those observations are brought to mind by video games, which are full, overfull, of exactly that kind of arbitrary convention. Many of these conventions make the game more difficult. Gaming is a much more resistant, frustrating medium than its cultural competitors. Older media have largely abandoned the idea that difficulty is a virtue; if I had to name one high-cultural notion that had died in my adult lifetime, it would be the idea that difficulty is artistically desirable. It's a bit of an irony that difficulty thrives in the newest medium of all—and it's not by accident, either. One of the most common complaints regular gamers make in reviewing new offerings is that they are too easy. (It would be nice if a little bit of that leaked over into the book world.) [Lanchester, 18]

This is a sentiment worth reiterating in a study such as the present. It must, alas, be conceded that, often, science fiction and fantasy is too easy. As to why this should be—why, that is, the same fans who actively prize difficulty in their

video games spurn it when it crops up in their novels and short stories?—well, that is an important question for which the answer is not immediately clear.

GENRE VERSUS MAINSTREAM

By suggesting that in the 21st century SF (and fantasy) have become a cultural dominant I do not mean to imply that they have swallowed all other genres, or obliterated the distinction between mainstream and pulp. The mainstream is still a meaningful cultural category, and although no mainstream title has enjoyed sales or impact to rival the three series discussed in this chapter opening—*Harry Potter*, *Twilight* and the *Hunger Games*—there have been event novels around which commentary and critique have coalesced as significant 21st-century works. If Gary Wolfe is right, and genre is evaporating, we ought perhaps to find evidence of SF condensing into these novels. And that is, very often, what we do find. For instance, as far as many commentators were concerned, the big book of 2006 was written in French by American-author Jonathan Littell; *Les Bienveillantes* (*The Kindly Ones*, 2006) is a 1000-page memoir by fictional SS officer Maximilien Aue, detailing his career before the war and after in a bravura series of grotesque, powerful episodes. Much of this is closely observed historical writing, although exaggerated into fantastical extremes of cruelty, bizarre eroticism and dark comedy. But a major strand of the novel is straightforwardly science fictional, as Littell's Nazis attempt to actualise the sorts of proto-Fascist dreams so common in pulp SF. Indeed, there is an argument that SF is the best lens through which to read this complex, elusive work. Aue is posted to Stalingrad where he is shot in the head, and undergoes a lengthy pulp-SF fantasia hallucination; but perhaps the whole novel from this point on is hallucination, and the crudity of the visions for planned postwar reconstruction to which various Nazis in the novel give voice owe much more to pulp SF than to Nietzsche. Another plausible candidate for biggest literary title of the noughties is Roberto Bolaño's posthumously published *2666* (2004), another 1000-page monster that styles contemporaneity in terms of grotesqueness and horror. The genre template for Bolaño's novel is crime rather than SF; but at the same time the far-future date of the book's title suggests that this is a work setting out to estrange and reconfigure in pseudo-science fictional ways. It is the pointed lack of a saviour, the denial even of the possibility of atonement, in *2666* that distinguishes it most forcefully from the logic of SF.

A clutch of more recent highly acclaimed novels support the broader point. American writer Jennifer Egan won a Pulitzer prize, amongst other awards, for *A Visit from the Goon Squad* (2010), a novel of impressive range, zest and intimacy that moves from a kind of pepped-up contemporary mimetic idiom into a near future climate-collapse world that is pure SF. British writer David Mitchell combines literary esteem with commercial success in his formally ambitious portmanteau novels: *Cloud Atlas* (2004) ranges from 18th-century New Zealand to near future Korea and on to a further-future post-apocalypse

dystopia; *The Bone Clocks* (2015) does something similar, peek-a-booing its fantasy elements through interlocking episodes set in the past and present-day, before bringing them out of their closet for a post-climate-collapse future set-piece climax. Kazuo Ishiguro's *Never Let Me Go* (2005) treats what might, in other hands, have been a risible premise—clones raised in remote school-like environments to provide body-parts for transplant to actual people—with rare sensitivity and nuance, creating a cool yet devastating fictional world. French literature's *enfant terrible* Michel Houellebecq very often ransacks the toolbox of science fiction, as in his breakthrough novel *Les Particules élémentaires* (*Atomised* 1998), a sour satire in which cloning and breakthroughs in reproductive technology eventually doom the human race; or the future-history of *Soumission* (*Submission* 2015), which delineates a Muslim take over of France, pitching its vision somewhere between satirical extrapolation and frank islamophobia. Japanese writer Haruki Murakami's eerie visions of contemporary solidity very often trade in alternate realities and loops in time. Portuguese Nobel-Prize winner José Saramago also liked to revert to the SF fable; two of his best novels are *Ensaio sobre a cegueira* (*Essay on Blindness* 1995), in which global blindness afflicts the novels' characters, and *As Intermitências da Morte* (*The Intermittencies of Death* 2005), in which a whole population finds themselves immortal and must come to terms with the parameters of their new existence. Of course, many 'literary' novels are written without any science fictional cross-pollination, or contamination (depending on your view). Still, it seems to me that the best such books are increasingly science fictional. For instance, the 2015 Man Booker Prize shortlist included three 'literary' SF titles—Karen Joy Fowler's beautiful and moving *We Are All Completely Beside Ourselves* (2014), a novel that owes much to the *Planet of the Apes* franchise; Howard Jacobson's future-dystopia *J* (2014), a post-apocalyptic tale in which the apocalypse is moral rather than physical; and Ali Smith's expert time travel metafiction *How to Be Both* (2014). These were easily the best three books on that year's shortlist, a fact oddly overlooked by the judges. The winner of the 2014 prize, the much-fêted *The Luminaries* (2013) by New Zealand writer Eleanor Catton, adds yeast to its historically scrupulous recreation of the late 19th century with various SF tropes, including forms of teleportation and telepathy. In its blend of Victoriana and fantastika *The Luminaries* is both brilliantly original and very much of its time.

STEAMPUNK

It would be possible, as a series of sidebars, to look in greater detail at several sub-cultural styles and modes of 21st-century science fiction, but we don't have room to tackle them all. Steampunk, though, is interestingly representative, not least because it has become so culturally prominent over the last decade or so. It began as a variant of cyberpunk, texts that told stories set not in a cyberpunk future, but in an alternate 19th century retrofitted with (for them) advanced technologies of computing, communication, transport and the like.

There are various precursor texts, but William Gibson and Bruce Sterling's novel *The Difference Engine* (1990) established many of the parameters; a Jonbar point involving the perfection of early gear-wheel computing leads to a version of Victorian England that combines advanced technology with old-school elegance of dress, manners and so on. Since the 1990s there have been several dozen significant steampunk texts [see Robb], and the form has been enthusiastically embraced by fan culture, with steampunk cosplay—dressing up in Victorian styles augmented with technological adornment—particularly popular. Dozens of steampunk novels and stories are published annually, and samples run the gamut from the pulpiest of the pulp, such as Liesel Schwartz's schmaltzy *Chronicles of Light and Shadow* [*A Conspiracy of Alchemists* (2012), *A Clockwork Heart* (2013), *Sky Pirates* (2014)], to the work of a literary heavyweight like Thomas Pynchon, and few are in (a literary sense) heavier, and whose massive steampunk fantasia *Against the Day* (2006) may be his masterpiece. There are many steampunk-style video games: *BioShock Infinite* (2 K Games: 2013) for instance, which sold over 11 million copies; or the older *Myst* series of games [discussed above; until 2002 this series was the world's best-selling video game]. Films as diverse as the Japanese anime *Hauru no Ugoku Shiro* (*Howl's Moving Castle*, Hayao Miyazaki 2004) and the Hollywood reboot *Sherlock Holmes* (Guy Ritchie 2009) draw on its style. It has proved a particularly fruitful area for YA writing: many of the novels of Philip Pullman, including his *His Dark Materials* trilogy [*Northern Lights* (1995), *The Subtle Knife* (1997), *The Amber Spyglass* (2000)]; the work of Philip Reeve, especially his *Mortal Engines* quartet (2001–06); and American author Cassandra Clare and her *Infernal Devices* trilogy [*Clockwork Angel* (2010), *Clockwork Prince* (2011), *Clockwork Princess* (2013)]. Doctor Who, whose protagonist is in effect an Edwardian gentleman in possession of a spaceship, can be thought of as in many ways a steampunk show. Though the focus of this literature is often a version of Victorian England, it has proved very popular abroad, with works like the *Trilogía Victoriana* of Spanish writer Félix J Palma [*El mapa del tiempo* (2008), *El mapa del cielo* (2012), *El mapa del caos* (2014)], or Frenchman Jean-Christophe Valtat's powerful *Aurorarama* (2010). This very partial list must be truncated, or it would soon fill many pages.

What is steampunk? It is a studied dismantling of the consecutiveness of history in the service of a particular set of styles and fashions. As such, it is part of a larger phenomenon that Fredric Jameson, all the way back in 1984, identified as a 'mesmerizing new aesthetic mode', which had then 'recently emerged as an elaborated symptom of the waning of our historicity, of our lived possibility of experiencing history in some active way'. Jameson called this *postmodernism*, a cultural circumstance characterised by 'a strange occultation of the present' in which a kind of formalised nostalgia symptomatically reveals 'the enormity of a situation in which we seem increasingly incapable of fashioning representations of our own current experience' [Jameson, 26].

Ours is, in other words, a situation in which our sense of history is exhausted; overwritten by an inventive but debilitating aesthetic nostalgia that functions

as a deliberate simplification of the past—what Jameson calls a ‘sterilized’ and ‘fetishized’ history, ‘our own pop images and simulacra of that history, which itself remains forever out of reach’. Steampunk is precisely this mode of Jamesonian pastiche, driven by a nostalgia for the styles and manners of Victorian England that refuses to sacrifice the convenience of contemporary technological advances. It is the belief that the exhilaration of the technological sublime itself, upon which so much SF is predicated, can be disengaged from the actual circumstances of their historical production and retrofitted, as it were, into the past. The problem with this belief is its mendacity—I mean both its ideological distortion and its radical misprision of history. Things like technological advance are not random events. They are, on the contrary, specifically determined by their historical circumstances. The reason the Victorians did not invent computing and space travel is not that they happened not to get around to it, and not that mere chance got in the way; it is that the entire social and cultural ground of their collective lives was not productive of such advances. Had circumstances been trivially different to the way they actually were, Babbage might have actually manufactured his difference engine; but even if he had done so, the computer revolution would not have followed, as the night the day, the way Gibson and Sterling’s *Difference Engine* suggests. The actual computer revolution, from the 1980s to the present, is not a chance event, or even a chance series of events. It is the superstructure of a particularly complex economic, social and cultural base. It required not just a few clever people making clever designs to produce personal computing and the internet. More importantly, it required an entire human economy and culture receptive, or productive, of the million elements that fit together into the whole. It takes more than a Babbage to make this happen. A similar case could be made for the more commonly appearing tropes of so many steampunk novels: flying machines long before the Wright brothers; robots before Toyota; and so on. The fantasy of steampunk, in fact, is the old bourgeois one that one talented individual matters more than the whole weight of history. It is the fantasy of being freed from the larger context of historical necessity. If it therefore shares, we might say, certain structural similarities with Protestantism in that respect, then this ought not to surprise us. We are talking science fiction, after all.

Actually, steampunk is not really a matter of this or that technological gadget; the appeal of the genre is in the way it finesses the past into the present. This is an aesthetic strategy it shares with heroic fantasy, (or much of it) as a mode, a disinclination to encounter the past *as* past. At its worst steampunk is just an exercise in escapism, history as fancy dress. The brutalist aesthetic of modern-day big-scale technological artefacts is softened with a little elegant 19th-century design panache—instead of the black, slug-shaped enormousness of a modern nuclear submarine we are offered the beautiful: variants of Captain Nemo’s vessel in silver, art deco silhouettes, ornamented with attractive curlicues and stylish lines; in place of today’s Pacino-in-*Scarface* vulgarity of vocabulary and manners, we have characters who speak in mannered Johnsonian or Dickensian phrases, who dress not in shell suits and jogging pants but in

exquisitely tailored suits. Or, to get to the point, steampunk gives us not the grinding desolation of post-Darwinian existential insignificance, but a golden ticket back to the pre-Darwinian cosmos (or, a little more precisely, to a cosmos trembling on the brink of falling into the angst of modernity) where the universe is fitted more comfortably to the individual's hopes and importance. It is civilisation, but with the more profound ontological discontent replaced with the diverting transitory discomforts of adventure narrative. To use steampunk diagnostically, in other words, is to locate the ground of its appeal in a sense that the modern world is lacking in *refinement*. What steampunk tells us is that there's nothing to prevent the marriage of contemporary technological convenience with the elegance and the good manners of the 19th century. Another shorthand for this, of course, is breeding; and to think of it like that is to understand the extent to which steampunk is embroiled in reactionary ideologies of class superiority.

CODA: PROTESTANTISM REDUX

The first edition of this history of science fiction was long. This second edition is considerably longer. But its core thesis remains, though adapted, fundamentally the same. It is that science fiction begins not with Gernsback, Wells, Verne or Shelley, but rather with the Protestant Reformation, when science as we now understand the term began to separate itself from magic as the idiom for fantastic voyages, utopias, future speculation and technological extrapolation. I am arguing that the roots of SF run deep. Now, it is one thing to suggest that Protestantism is somehow caught up with the origins of science fiction. It is quite another to suggest that the cultural forces that determined that birth are manifest in the genre as it is written today. It could reasonably be objected that many of the salients that animated the war of ideas (and in many cases, the actual wars) of the Reformation and Counter-Reformation are of interest only to a minority of theologians today. If that is so, then my thesis is wrongheaded.

In what sense, then, is it still meaningful to talk about the Protestant identity of science fiction? This question has particular force if another aspect of my argument in this volume is correct, which is, has science fiction over the last several decades really gone from being a small-scale, mostly literary, subculture (in which Catholic, Jewish, atheist and other writers were as important as Protestant ones) to being a genuinely global cultural form, dominating popular cinema and fiction for audiences from all manner of social, religious and ethnic backgrounds? Surely any Protestantism that may have defined SF at its 'birth' has been so diluted by its globalisation as to become irrelevant?

To counter this reasonable-sounding objection requires me to repeat that what I am arguing in this study is not that science fiction is Protestant, in a strict, affiliative sense—not (for example) that only self-declared Protestants write SF, or anything so foolish. Far from it. Empirically it is undeniable that SF is now produced out of a great wealth of cultural assumptions, by writers of all manner of religious belief, and by writers of none. The big theme in SF/fantasy, as

in culture more broadly, is change. One of the functions of art (if you'll permit me to speak instrumentally for a moment) is to help us live better in the world, and the world has changed in very significant and irreversible ways over the last half century or so. If we concentrate for a moment on the West: social mores concerning the rights of women; the validity of queer, trans and other lifestyles; the vacuousness of racist beliefs; the social and cultural advantages of diversity—all this has advanced more in the last generation than in a hundred generations prior. Some people deplore this, more celebrate it, but either way it's a fact of the world now. It seems to me that this is what the best genre novels of the last decades have in common, they all interrogate: how human beings deal with radically changed and changing worlds; what revolves during a revolution; how we adapt or what happens when we fail to adapt; how life's dome of many-coloured glass refracts new wavelengths and hues. This may be why there have been so many dystopias published, and why YA is so large a feature (since adolescence is the time of life when an individual experiences the greatest and most accelerated process of change). What continues to make SF relevant as well as great is its hospitality to otherness, to change, to alterity.

Why, then, do I bring Protestantism in at all, at this late stage in the book? The argument I make is that this set of views, as much socio-cultural as religious, having provided a particular impulse to the development of genre, is still discernible in various ways in the genre's modern mode. I put my finger on a small number of key elements, although there are certainly many others. Even though it has left the religious specificities of Protestantism far behind, 21st-century SF still sees itself as engaged with a materialist and scientific (in the broadest sense) apprehension of the cosmos in contrast to other, sacralised, magical ways of seeing the universe (which we might call fantasy). Or perhaps it would be more accurate to say that contemporary SF often sees the materialist sublime—the sense of wonder, the mindblowing and the marvellous—in terms of a sacralisation of the material. But we can do better than this. You may find yourself unpersuaded by the argument that SF contains Protestant DNA. But you would, I think, be hard put to disagree that there are other aspects of the Protestant Reformation that have had profoundly shaping effects upon 21st-century life without requiring the people caught up in those consequences to self-identify as Protestant. The most obvious of these aspects is Capitalism itself, an economic philosophy that has come to dominate most of the globe, and which has its roots in the specifically Protestant work ethic and mercantile exchanges of 16th- and (especially) 17th-century northern Europe. We would not insist that living a life shaped by Capitalism, or holding a fundamentally Capitalist ethos, disqualifies one from being Catholic, Muslim, Hindu or Jewish. Nonetheless, the (to use the inadequate metaphor once again) DNA of Capitalism contains much that is Protestant. So with SF. We could say that the connections between the often commodity driven, trader-and-colonist, individualist imagined worlds of much 20th- and 21st-century SF owes as much to the determinations of Capitalism as it does to Protestantism. The point is that these two latter things cannot be neatly separated out from one another.

Indeed, some critics of genre have straightforwardly celebrated this circumstance. 'Although science fiction was created in the marketplace,' says Gary Westfahl, 'and always seemed comfortable in that milieu, its leading figures, paradoxically, constantly struggled against the natural pressures that the market exerts upon its products.' [Westfahl, 81] Some might object to the characterisation of market forces as 'natural', and distance themselves from the tacit characterisation of such people as fools for opposing market Capitalism. Not Westfahl, who thinks that 'after several decades' of resistance, such individuals 'finally lost that battle'. We should, he insists, 'celebrate this triumph of the marketplace'. We may not wish to do this, but we will find it hard to deny the bald fact to which Westfahl refers. SF is a marketplace product, not only by contemporary happenstance of sales, but because precisely this capitalist logic is part of the cultural revolution that created SF in the first place.

So with another aspect: colonialism, and its kick-back, postcolonialism. It is, of course, not true that imperial expansion has been the sole province of Protestants. But we can say that mercantile Capitalism gave both new impetus and new form to the timeless human business of conquering and enslaving other humans. It became tied-in to a specific model of profit and intimately linked to a proselytising idiom that assured people not only of salvation but of the possibility of individual autonomy and profit, even as they were being fitted with their shackles. We're entitled of course to call this hypocrisy, but only if we recognise that it was often that apparent oxymoron, a *sincere* hypocrisy, precisely because it was baked into the logic of work-ethic mercantile-capitalist Protestantism itself. The tendency of SF towards an outward, expansionist vision of the cosmos very often simply translates the actual process of imperial and post-imperial globalisation onto the interstellar spaces. Somehow we see no paradox in Star Fleet's Federation swallowing up a quarter of the galaxy for liberal humanist values, whilst also predicating their expansion on a 'prime directive' of non-interference in individual planetary affairs.

This discussion is running the risk of becoming too windily generalist, not to mention too ideologically tendentious. So let me be more particular in defining what I mean by Protestant in the context of this study. In addition to the near-global success of Capitalism, and its peculiarly inflected version of imperialism, there are several more specifics worth mentioning here from 17th-century Protestant discourse that seem to me still to have a substantial shaping force on modern SF. One is that it was Protestantism that reconfigured the future from a uniquely religious into a secular domain. The future is not the whole of SF, of course, nor are all SF stories set there. But most are, and futurity is ineluctably connected in general culture now with a science fictional way of seeing things.

Unlike national prophets who, in the process of sacralising English history, risked losing their past in an ahistorical eternity, other Elizabethan writers attempted to turn the divine prophesy of Revelation into history, making it available as a source of national articulation. As John Pocock has shrewdly observed, 'apocalyptic', which sacralises secular time, must always in an opposite sense secularize the

sacred, by drawing the process of salvation into that time which is known as *saeculum*. In the sixteenth century perhaps more than at any earlier period, English Protestants broke with the idealist, Augustinian interpretation of Revelation in favour of a historical interpretation. [Escobedo, 81]

This is the ground of the many future histories with which SF is so liberally supplied. Indeed, we can go a little further. Extrapolating to the state of the genre today from reading the Elizabeth Bear story ‘No Decent Patrimony’ (2015), Alastair Reynolds notes

the emergence of what you might call the ‘New Default Future’. Bear’s world is one of vanishing privacy, information for all, continued social inequality, climate change as a given, radical lifestyle changes effected by new biotechnology. You can tweak the parameters a bit, but it does seem as if writers are once again beginning to converge on a shared sense of the future. No, it doesn’t necessarily involve space colonies or rolling roads or flying cars, but it’s no less valid, no less fascinating. [Reynolds]

This seems spot-on to me as 21st-century SF and fantasy manifest, broadly speaking, a preponderance or drift towards what we might call mild dystopia—although mild is, I daresay, the wrong word. Centralised Orwellian nightmares are rare (though not entirely absent) from contemporary genre. More common are visions of a decentralised, worn-out, deracinated future. The world of the *Hunger Games* novels is one of widespread poverty, social exhaustion and total oppression. The world of the Harry Potter novels is easily tripped into quasi-fascist tyranny. A new generation of SF/fantasy writers have emerged shaped by the Bush/Blair years of lies in high places, dodgy dossiers, illegal wars and vast human suffering. It is not surprising that, by and large, they write stories suspicious of official authority that are simultaneously stories of finding solace and strength amongst one’s friends. Writers begin as fans, and fandom is stronger now than it has ever been. By stronger I mean more connected, linked by social media in a way that wasn’t true two or more decades ago; but I also mean more responsive and responsible. It is worth adding that this default future of untrustworthy and oppressive political authority, of environmental stress or breakdown, of grimness and darkness, is as much honoured by writers in the breach as the observance. My point is slightly different to that. It is to ask how much such a shared fictional space is simply the reflection of an actual world facing alarming environmental pressures and an ongoing ‘war on terror’, and how much it is the eruption of something much deeper, something a 17th-century Protestant would have called original sin? Take this term out of its specifically theological context and it seems to me a sense of it crucially defines the sorts of futures many contemporary SF writers are writing.

I have already suggested above that the huge vogue for superhero SF texts that dominated the 2000s and 2010s is an iteration of much older anxieties about the status of the saviour, the nature of atonement and the openness

of salvation, that in turn absolutely defined the Reformation. There are two other elements I'd like to draw out, as characteristic of SF more generally but especially of SF now, at the time of writing, in 2015. They are, in brief, a kind of earnest garrulousness and seriousness of approach on the one hand, and a more divisive sectarian logic on the other. Here is Arnold Hunt's thumbnail definition of what he calls 'The Protestant Mind', summarising an attempt to 'distil the essence of Protestantism in a few words', from Charles and Katherine George's *The Protestant Mind of the English Reformation* (1962). The Protestant mind, says Hunt,

was 'compulsive, repetitive, insecure, aggressive'. It was 'extremely, sometimes unbearably, serious'. It was also 'arrogant and wordy', but it was marked by 'moral earnestness and the duty and courage of decision'. For the Georges, the archetypal Protestant was Oliver Cromwell, 'whole, intense, activist, pious'. [Hunt, 24]

Hunt is reviewing a more recent study, Alec Ryrie's *Being Protestant in Reformation Britain* (Oxford University Press 2013) which, he notes, builds upon the Georges' definition:

Protestantism, [Ryrie] suggests, was 'intense, restless, progressive'. It took religion very seriously; it craved authenticity and dreaded hypocrisy; it was marked by a 'sense of endless struggle', 'unceasing self-discipline' and a 'pervasive intellectual tendency to anatomize and subdivide'. Above all it believed in the importance of being earnest. ... He acknowledges that Protestantism could be cruelly demanding, even 'frankly pathological', in the burdens it imposed on its adherents. Yet it could also be deeply passionate in its expressions of 'rapture', 'ravishment' and ecstatic union with God.

The question, then, is how accurately and with what utility can contemporary SF be interpreted in terms of these categories? My assertion is 'very accurately' and 'most usefully', although of course I could be wrong. Since SF is a secular discourse that mediates some profoundly religious questions we must put God on one side. ('What,' to deploy a *Star Trek* allusion, 'would God want with a starship?'). But its materialised sublime, and its greatest achievements in words and images, very often provide SF fans with rapture, ravishment and ecstasy, and online fandom has developed a whole vocabulary (from 'squee!' to 'mind—blown' to 'o_O') to articulate its pleasure when SF hits this spot. What else? Is 21st-century SF often wordy? Who, looking at the increasingly fat spines of blockbuster genre novels on bookshop shelves, could deny it? Is it extremely, sometimes unbearably, serious? Not always, but often. Ah, but is it, as a sub-culture, compulsive, repetitive, insecure, aggressive, marked by moral earnestness and the duty and courage of decision? I submit that only an individual who has never been caught up in an online flame-war would think of denying this.

This brings me to the culture of SF in the middle of the second decade of the 21st-century, and here it is hard to deny that an ideologically sectarian divi-

sion is the most prominent shaping force on the genre landscape as it stands right now. This began in 2013 and 2014 with a movement that called itself Gamergate. It would be disingenuous of me to pretend impartiality when it comes to epitomising this pressure group. Here's my best shot. Gamergate was a mass-action outrage and aggression by (mostly) male fans of video games driven by a belief that the forces of political correctness had combined in a malign conspiracy to censor, outlaw and demonise certain games for being insufficiently feminist. In point of fact, nobody was calling for the outlawing of all 18-certificate video games, and there is a, to put it mildly, serious structural problem in a movement that champions freedom of speech by aggressively working to close down, via death threats and intimidation, the speech of people with whom it disagrees. It is no coincidence that the objects of this latter campaign of online lynching and death threats were overwhelmingly women. A starting point for the movement was a sense shared by some gamers that games journalism was corrupt—meaning, we can take it, that reviews of games were thought compromised by undisclosed private interests. Such a circumstance is certainly possible, even likely, although corruption is really not the right word for it. Similar situations can be found in all small-scale, vigorous fan communities, and is best addressed by agreeing social codes of transparency and by contributing more disinterested and objective reviews to the discourse. Rather than adopt this strategy, many Gamergaters publicly and repeatedly threatened female journalists with rape, torture and death, forcing the shut-down of public debate by warning that mass shootings would ensure if women were given the stage, and much else in this vein.

A connected movement (the precise nature of the relationship is contentious) were the so-called Sad Puppies and Rapid Puppies campaigns, which agitated to ensure right-wing, traditional, functionally golden age-style science fiction be represented on the Hugo Award ballot. These movements galvanised a large base of supporters who were able to ensure that the 2015 Hugo shortlists were swamped with such writing, simultaneously galvanising a large body of opponents who ensured that none of the shortlisted Puppies titles actually won any Hugos. What Gamergaters and the Puppies shared was a profound ideological and political animadversion to what they called Social Justice Warriors—which is to say those broadly left-leaning activists agitating for equality for women, people of colour and the full spectrum of human sexual orientation. Both sides in the online discourse war currently (at the time of writing) characterising SF would, I think, agree that things have escalated in recent years, and a longstanding ideological divide has come sharply, and rather painfully, into focus. I am tempted to try and connect this with one of the arguments I make in the present study, that SF has largely shifted from a verbal to a visual cultural mode. *Star Wars* was the Rubicon. Before 1977, and speaking very broadly, SF had been a literature of ideas, of extrapolation and transcendence rooted primarily in verbal texts, popular only with a relatively small group of aficionados who called themselves fans. After that, through the 1980s and 1990s, SF shifted about on its axis to become a mass-culture phe-

nomenon, much more widely consumed, and more likely to be consumed as a visual mode. Relatively few people buy and read SF novels and short stories; everybody watches *Doctor Who* and goes to see *Avatar*. This shift has, I think, advantages and disadvantages to it. A movie like *Jupiter Rising* (Wachowskis 2014) is, visually speaking, extraordinary and beautiful, even as it is (judged by such non-visual criteria as narrative, character, cogency and conceptual eloquence) muddled and bad. The eclipse of the latter categories by the former is not inevitable. *2001: A Space Odyssey* or *Stalker* are as visually stunning as they are content-rich and intellectually stimulating. But that eclipse does seem to be a feature of 21st-century genre, and culture more largely, going forward.

This is part of a cultural phenomenon larger than SF. Walter J Ong, cultural critic and Jesuit priest, has argued that, just as the shift from orality to literacy in the ancient world produced vast structural changes in the logic of society and culture, so the ongoing shift from literacy—that is, script—to what Ong calls a new ‘oral-electric’ culture, primarily visual, will result in similar change. One consequence of the original shift from oral to literate culture was the stratification of those who had command of the new technologies (scribes, Ong calls them) and those who hadn’t (the illiterate, now disenfranchised). But the advantages of literacy over orality are so manifold—in terms of clarity and distinctness, archiveability and facility—that Ong goes so far as to say that Christ came into the world at the time he did *in order to* take advantage of this shift. Which is to say that, Ong thinks, he was born into a culture still primarily oral but one on which the alphabet existed to give the Word, the *Logos*, its necessary social robustness and durability: ‘the precise time when psychological structures assured that his entrance would have the greatest opportunity to endure and flower’ [Ong, 191]. As above, I bring God into the matter here not for theological reasons, but to contextualise what Ong says about a hoped-for return to an older model of orality. He yearns for this because he considers it sacred, as Frank Kermode summarises, for Ong ‘visuality and typography, desacralized the world. The oral Word is a Presence, the written word is not; the oral Word presents an interior, the typographical word a surface.’ [Kermode, 105] One appealing feature of this thesis is the sense that our present-day intensification of the logic of the visual is a *development* of the typographic world of the 20th century, not a departure from it. The question is whether our culture is morphing into newer, less alphabetic forms. Does the unengaging and affectless post-Pomo flatness of *The Hobbit* trilogy (Peter Jackson, 2012–14), or the scrambled visual kaleidoscope of the perfectly vacuous *Transformers* franchise (Michael Bay, 2007–17), move genre in some new direction? Perhaps we are witnessing a return to a mode of more immediate access that in turn informs a sort of *faceless* orality—to the sort of thing we might associate with (for instance) social media such as Twitter. Online interactions lose the alphabetic sequential rigour and logic; they function as emotional rather than intellectual megaphones. Poke your head into online interaction—about the new *Star Wars* movie, about *Doctor Who*’s representation of women, about Gamergate, about the 2015 Hugos, anything you like—

and what comes across most strongly is that people *feel intensely* and are moved to *express those feelings* with a vehemence that cannot comprehend that others might feel just as strongly in a different way. ‘The characteristic mental disorder of alphabetic societies,’ according to Ong, ‘is schizophrenia, but of analphabetic societies it is anger and polemicism. Old oral was very angry.’ I really can’t think of a neater encapsulation of the online culture surrounding genre in the twenty-teens than anger and polemicism. Perhaps we are indeed moving towards a combination of oral choler and typographic flatness. Renaissance and Reformation scholars attacked one another with furious rage over things they believed mattered intensely—God in the world, how we are saved, how we must live. People today employ the same furious rage, and many of the same rhetorical tactics, over the issue of the crossguards on the lightsabre glimpsed, for less than a second, in the trailer to the forthcoming *Star Wars 7: The Force Awakens* (J J Abrams, 2016).

Why do we get so worked up? Because, presumably, it matters to us to a degree larger than our capacity for tact and courtesy. Perhaps the communities surrounding SF and fantasy *aren’t* angrier and quicker to take offence than they used to be. But they certainly feel that way to me. The Gamergate/Puppies fury is one reflection—a reaction, an intemperate kickback—against a broader logic. I’m put in mind of something Orwell wrote, towards the end of his life:

Within the last few decades, in countries like Britain or the United States, the literary intelligentsia has grown large enough to constitute a world in itself. One important result of this is that the opinions which a writer feels frightened of expressing are not those which are disapproved of by society as a whole. To a great extent, what is still loosely thought of as heterodoxy has become orthodoxy. It is nonsense to pretend, for instance, that at this date there is something daring and original in proclaiming yourself an anarchist, an atheist, a pacifist, etc. The daring thing, or at any rate the unfashionable thing, is to believe in God or to approve of the capitalist system. In 1895, when Oscar Wilde was jailed, it must have needed very considerable moral courage to defend homosexuality. Today it would need no courage at all: today the equivalent action would be, perhaps, to defend antisemitism. But this example that I have chosen immediately reminds one of something else—namely, that one cannot judge the value of an opinion simply by the amount of courage that is required in holding it. [Orwell, 75]

That last sentiment is the really crucial one. SF and fantasy have, it seems to me, been at the forefront of dramatising social, cultural and sexual diversity and difference as an imaginatively comprehensible possibility for many decades now. That the rights with which people are endowed to life, liberty, the pursuit of happiness should not be contingent upon their gender, the colour of their skin or their sexual orientation is so staggeringly obvious an observation, and (after a long hard-fought struggle for these rights) now so widely accepted by society, it hardly requires courage to believe it. And yet so many of our shared narratives are premised upon physical courage! So many of the stories we pretend to value put such premium on the ability and the will to fight, to maim, to

kill. This is truer of games than other narratives, but it's true in films and books too. It may not be co-incidental that there are people who, realising on some level that supporting sexism, racism, homophobia and transphobia requires *courage* in this day and age, then make the leap to believing that courage itself validates their odious opinions. What other values do games inculcate, apart from persistence and the ability to move your fingers really fast?

But I do not mean to be pessimistic. At the time of writing, *Star Wars 7: The Force Awakens* (J J Abrams 2015) has recently enjoyed the most lucrative opening weekend of any film in the history of cinema, and looks set to become one of the, if not the, highest grossing movie of all time. It is a fun, deftly-made piece of multi-million-dollar fan-art that is tapping a vast, global fund of love for this franchise, and for science fiction itself. More, it is not peripheral to the film that its two heroes are, respectively, a competent and brave woman, and a man of Nigerian heritage. Even as it cycles through the comforting old tropes and features, this new *Star Wars* is proving what SF has always known, that this is a mode of art intensely hospitable to diversity. The vitality of contemporary SF cultures, not to mention their diversity and inventiveness, gives us cause to hope. Science fiction, this study has argued, is a mode of cultural expression—a way of making art—with much deeper roots than is often realised. Deep roots are as good an augur of long life as any. We can look forward with optimism.

NOTES

1. A fourth bestselling series worth noting here is the multi-part erotic romance by British author E L James: *Fifty Shades of Grey* (2011), *Fifty Shades Darker* (2012), *Fifty Shades Freed* (2012) and *Grey* (2015). The first novel in this sequence began as fan fiction set in the *Twilight* universe and was rewritten to avoid copyright infringement. Though, mercifully, beyond the scope of the present study these books do illustrate the continuing appeal of Meyers' peculiar mix of erotic liberation and sexual restraint.
2. I am indebted to Farah Mendlesohn for this insight.

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