

Matthew Kelly
Jared Bielby *Editors*

Information Cultures in the Digital Age

A Festschrift in Honor of Rafael Capurro



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Information Cultures in the Digital Age

Matthew Kelly · Jared Bielby
(Eds.)

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A Festschrift in Honor of Rafael Capurro

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Foreword

Thomas J. Froehlich

While Rafael Capurro did not invent the phrase “information ethics,” given the prestige, influence, growth and impact that he has created in the field, it could be argued that he is the *father* of information ethics, if such an appellation were not sexist. *Mother-father*, even if dialectically conceived, would not fare any better as it is still gender-based and dualistic, a framework with which Rafael Capurro would not find himself comfortable. Perhaps we can call him an *angel* though it might conflict with any transcultural, intercultural approach that he would espouse, unless it is derivative of his *angeletics*, his approach to a phenomenology of communication. He is certainly a messenger and the message is information ethics, but he is an *evangelist* as well. What makes him the *angel* or, to analogize from another tradition, the *archangel* of information ethics, is not only his own scholarly, prolific, encompassing and innovative work on information ethics and related subject matters, but his participation in so many local, regional, national and international panels and conferences, his many keynote speeches, his academic appointments, his fellowships and awards, his multitudinous publications and presentations in several languages, his creation of the *International Center for Information Ethics* (ICIE, <http://icie.zkm.de/>) and his commitment and devotion to information ethics. Rafael Capurro’s curriculum vitae is dizzying in its length, breadth and depth: see <http://www.capurro.de/>. He is an evangelist not only because he spreads the good news (*euangelium*—as opposed to *disangelium*, bad news) of information ethics but also that he has inspired and encouraged hundreds of other scholars to contribute to the field, and has provided venues in which they could realize their contributions: by inviting them to participate in conferences (e.g., the South African conference), to contribute papers to the International Center for Information Ethics, especially on theme-based issues of the *International Review of Information Ethics* (IRIE, <http://www.i-r-i-e.net/>), etc. While he has advanced substantially in the evolution of his own thought, he has also encouraged the development of thought in the field into international ethical space, by engaging and inspiring others to pursue their own insights and contributions. Many of the contributors to this volume have undoubtedly been the recipient of Prof. Capurro’s graciousness and generosity.

What is remarkable is not only his scholarly record, but his professional and personal engagement with friends, colleagues, collaborators and interlocutors. If there were ever a person on the planet who lives the categorical imperative, “Act so that you treat humanity,

whether in your own person or that of another, always as an end and never merely as a means,” it is Rafael Capurro. But that is too Kantian, Rawlsian, universalistic a description, that does not speak to his personal, hermeneutic engagement. When you meet him in person, one finds that he is affable, warm, amiable, collegial, kind, gentle, charming. He is personally engaged and engaging in so many ways. In person, with a wonderful glint in his eye and in a gesture of an embracing closeness, he hovers with his interlocutor in conversation, as if sharing some intimacies in a thoughtful Platonic dialogue of mutual purpose. It is also reflected in his personalized welcoming email to new members of the ICIE. While authenticity is often an abused and thereby trivialized concept, in a foundational Heideggerian sense, one can truly say that it is characteristic of Rafael Capurro.

It is with enormous pleasure that we offer this Festschrift for Rafael Capurro to celebrate his outstanding contributions to information ethics and related fields and to show our appreciation for his engaged and engaging personhood.

Information Cultures in the Digital Age: A Festschrift in Honor of Rafael Capurro

Jared Bielby and Matthew Kelly

The following book is about information. It is also about Rafael Capurro, knowledge and ethics. The chapters contained within this Festschrift illuminate the search for the meaning of information and Capurro's influence on his two areas of expertise: information and philosophy. The relationship of information to knowledge and ethics and to broader topics associated with their cultural expression outlined in this book, either in terms of sociological or philosophical contextualization, will be familiar to many readers. The pivotal notions of library, data and digital media will, similarly, probably not be new territory nor will a reading of the concept of information as a drive to make knowledge measurable (Adriaans, 2012, para. 2)¹. What may be new for many who have an interest in the broader information disciplines is that there is a significant social aspect that needs to be accounted for in the impact of established and digital communication on the one hand and information organization on the other. This social role is unlikely to be satisfied simply through recourse to an ontology of information based in analytical, logical or systematic approaches. Capurro's role in bringing a hermeneutical and phenomenological position to bear on information science has not been unique, but it has provided significant direction for those with an interpretive inclination to understand (and if necessary unpack) the scientific (and scientistic) approach to the information discipline.

Capurro is counted among the pioneers of information philosophy. His contributions toward bridging the various incarnations of information science with the salient questions of the digital age are well founded and interested readers are referred to his web archive for an extensive introduction to his work.² In honor of this work (and the person behind the keyboard), the following chapters on the study of information culture serve as a witness to aspects of the origins and the evolutions of information scholarship, encompassing in their scope the fields of library and information science, information ethics and the philosophy of information, and engaging themes as far ranging as hermeneutics, digital ontology, on-

1 "Historically the study of the concept of information can be understood as an effort to make the extensive properties of human knowledge measurable" (Adriaans, 2012, para. 2). This book's theme acknowledges the importance of this but also that there is much still to be said for the Protagorean maxim, updated for the 21st century: "the human being is the measure of all things."

2 www.capurro.de

line privacy, access to information, intercultural information societies and the theoretical foundation to the concept of information itself. Since the late 1970s, Capurro has led the global charge toward understanding the connections between information, science, culture and philosophy. In exploring these themes Capurro has re-vivified the transcultural and intercultural expressions of how we bring an understanding of information to bear on scientific knowledge production and intermediation.

At a very basic level, Capurro's work presents a resolution to what he deems an incomplete information theory. The classical information theory, advanced in the 1940s by the mathematician Claude Shannon, was the first attempt to theoretically address the relationship between information and communication technologies. According to Capurro, Shannon's theory missed the mark in terms of a well-thought-out theory of communication. In much of his work, Capurro (2003a) strives to explain what Shannon seemingly intuitively understood, but failed to clarify, namely, that in communication between receiver and sender it is not information that is passed and received, but rather *a message*, and this message is permeated with semantic and pragmatic meaning. In developing a mathematical model for communication, Shannon attempted to separate information from the interpretation-dependent factor, neutralizing the human role in communication, looking for meaning in language and symbols as independent from how the receiver absorbs it (Capurro, 1996; Shannon & Weaver, 1949). It was the critical factor in communication that Shannon sought to eliminate, message, that Capurro sought to bring back into play. Applying hermeneutic techniques to Shannon's information theory, Capurro endeavoured to bridge the barriers of communication that classical information theory reinforced (Capurro, 2003a).

The Capurrian information project is therefore fundamentally an anthropological one. Rather than eliminating "the question of interpretation" in information theory as Shannon did (Shannon & Weaver, 1949), the question of interpretation becomes the foundational question, its origins found in "the interpretation, construction and transmission of meaning" (Capurro, 1996, Part I, para. 4). Communication is at its core, according to Capurro, a matter of hermeneutics (Capurro, 1996). In an early publication Capurro advanced the view that

...information as a logical category is to be interpreted. This logical determining of the concept of information is, however, again, no "absolute," but a reality in each area-specific determination to be interpreted. Only such a formalized concept of information can effectively be applied to a wide variety of areas (physical, biological, educational, documentary). The question of the origin of the terms, the philosophical reflection with regard especially to the basic concepts of science, also proves to be...a necessary precondition for critical understanding of these terms. (Capurro, 1978, Part 6.2.4, para 2)

While the original concept of hermeneutics focused on the interpretation of ancient texts, modern hermeneutics has branched outward (as ontology) and now encompasses the living aspects of interpretation beyond the printed word. Working within the Heideggerian tradition, Capurro repurposes the traditional focus of philosophically-inclined hermeneutics for a digital age. Similar to Marshall McLuhan's understanding that "the medium is the message"—where the form of the medium, whether computer, radio, or hand held device is itself entrenched in the message, ensuring a synthesis of message and medium where

the medium plays an integral part in how the message is perceived (McLuhan, 1964)—Capurro demonstrates how the construction and transmission of the message is critical to its reception. Capurro notes that

The dualism between content and medium is not feasible. It was criticized already by Plato in the dialogue “Phaidros,” the first media critique in the Western tradition. Plato’s paradoxical devaluation of writing with regard to spoken language (logos) shows that no media is neutral concerning the content it is supposed to transmit as well as between the relationship between sender and receiver. (Treude, 2014, Introduction, para. 2)

Capurro recognized in McLuhan a basis for a message theory that would satisfy the requirements for his vision of a comprehensive communication theory. Building on McLuhan’s work, Capurro formed his own extensive version of communication theory called *angeletics*, a term denoting the Greek *angelia*, meaning “message” (Capurro & Holgate, 2011). This relationship, as Capurro notes, is yet to be surveyed in any ontological depth. Capurro states that

The development of an anthropological information theory within the framework of hermeneutics embracing not just the interpretation but also the construction and transmission of messages is still an open task. It concerns not only information and library science but also “informatics” (or computer science). The intersection between hermeneutics and information theory means not only a transformation of the latter but also of the former seeing that traditional hermeneutics was primarily oriented towards the interpretation of the spoken word and/or printed texts. A hermeneutics of information science should also embrace the construction and transmission of messages by particularly taking into account the question of the media, as has indeed been done since Plato’s criticisms of writing. In our present situation we are looking particularly for the new hermeneutic questions which arise in an electronically networked world. (Capurro, 1996, p. 2)

As noted above, such a task, though yet to be applied to the digital era, is not a novel one. Plato was well known for criticising the form of writing, and very aware of the difference in delivery between verbal and written forms. While hermeneutics does not disavow writing, it reflects the reasoning behind Plato’s distrust of writing. In *The Gift of Theuth: Plato on Writing (again)*, Susan Dobra states that “Plato fairly clearly and in non-dramatic form, disavows writing as a valid form for communicating ideas. He distinguishes five levels of distance between the word for a thing and true understanding of its perfect form” (2013, para. 12). The five levels that stand between truth and the written word include from first to fifth: name, definition, representation, and knowledge, with the fifth level, truth, being only attainable upon the totality of the others (Dobra, 2013). Plato states that unless “a man somehow or other grasps the four of these, he will never perfectly acquire knowledge of the fifth. Moreover, these four attempt to express the quality of each object no less than its real essence, owing to the weakness inherent in language” (Plato, 1929, p. 535, Ep. VII. 342e). Additionally, Socrates, the mouthpiece for many of Plato’s opinions, confirms in the *Phaedrus* that “He who thinks, then, that he has left behind him any art in writing, and he who receives it in the belief that anything in writing will be clear and certain, would be

an utterly simple person” (Plato, 1914, p. 565, Phaedrus 275c). While hermeneutics does not disparage the written word as Plato does, it recognizes the limitations of the word as carrying truth outside of the process of interpretation, a process that could be likened to Plato’s five levels of knowledge.

Capurro’s multifaceted addressal of the problem of defining the concept of information, potentially toward a unified theory of information, has led to a logical trilemma, or, as Wolfgang Hofkirchner and Peter Fleissner call it, “Capurro’s Trilemma” (Capurro, Fleissner, & Hofkirchner, 1997), a trifold comparison and contrast of the various ways of defining information and the implications that each definition imply for the other. While each unique definition of information stands apart from the others, they are all at the same time informed by the other, existing in a kind of paradox whereby each definition both negates and at the same time is reliant on the others for actuality. Bawden and Robinson address the complexity of the trilemma in their chapter included in this volume, *Super-Science, Fundamental Dimension, Way of Being*. The trilemma defines information in three ways: univocity (the concept of information has the same meaning in all contexts), analogy (the concept of information has an original meaning in a specific context, and is applied as an analogy in other domains) and equivocity (the concept of information has different, but equally valid, meanings in different contexts). The differences are significant, especially when defining information in terms of communication since, as Capurro notes,

Information is a category of solely psychic systems, it is a system-internal property that is not transferred, whereas communication means to open, on the basis of information (or meaning) a horizon of choices for other persons. Pure communication and pure information are at opposite ends of the spectrum. (Capurro, 1997, p. 1)

Two ways of addressing Capurro’s Trilemma set the stage for looking at a unified theory. The first way looks to what Capurro calls a dialectical informatism (Capurro, 1997)—an either/or focus that builds from and expands on the analogy-meaning of information, where the original definition of information as “giving form”³ sets the foundation for an evolutionary process where new potentialities and finalities materialize in a dialectical process. The second way builds off of and expands on the equivocity-meaning of information where different but equally valid meanings interact in a networked scenario (Capurro, 1997), each meaning existing apart from and fully serviceable on its own terms, but also reflecting and interacting (and thus being informed by) others. Where the former (dialectical) harkens back to a type of Hegelian synthesis, the latter reflects hermeneutics in a Gadamerian sense, opening horizons of interpretation.

In putting together a Festschrift in honor of Capurro we have aspired to present a volume that embodies more than merely an outline of various forms of information practice in context. We have sought to reveal to specialist and non-specialist alike the confluence

3 Capurro asserts this “giving form” in both an epistemological (giving form to the mind) and ontological (giving form to matter) sense, the first sense being the one that remains in Modernity (personal communication, 23 December 2015).

between scholarly specialization and information culture, highlighting examples of the many ventures (and adventures of forward thinking) that information-focused scholars in different countries are embarked upon. We also wish to highlight a growing legacy of academic and personal relationships that find at their fulcrum the passion and dedication of Rafael Capurro. Our aim with this work is to serve two purposes. Primarily we hope to honor Capurro for his lifelong commitment to philosophy and information science by bringing together a collection of essays that either focus directly, or indirectly, on his work. The collateral aim was to look at how a series of specific topics associated with Capurro's self-declared interests—foundations of information science, information ethics, information management, message theory, philosophy of media, hermeneutics—might find a global audience and that a representative group of scholars with a degree of familiarity with Capurro's works could express their appreciation for his sanguine efforts to provide intelligent commentary upon and humanize the information disciplines.

Among the first of a long line of information science scholars to introduce an avowedly continental philosophical approach⁴ to the understanding of the epistemological foundation of the discipline, Capurro has allowed us to better see, by way of examples in the philosophical tradition, how our values, our language and our sense of praxis affects the way we conceive of documents and other information artifacts—and their role in human society. He has provided considerable insight into the working of the digital realm, its effects on individuals, how the processes it instantiates in work and social life can both value and devalue our individual and professional lives. Capurro provides a sense of what the ordered world was prior to these changes but more so, what it might be were we to humanize the processes of digital and informational interaction.

Capurro's writings have long emphasized the need to look deeply into how we contextualize the information problems that emerge within a scientific society while providing a philosophically-based approach to dealing with them. With a focus on the human-information relationship that challenges traditional approaches to information science, Capurro brings a new treatment to the relationship between information theory and the grounding of Being. His contributions are among the first to recognize and then contextualize a full concept of information, superseding notions of information as merely an externally existent subject, clarifying instead its reliance on the living, changing interactions of human communication where meaning is lived and defined in an ever-evolving dialectic between message and messenger.

4 It is worth noting that while a strong analytical tradition exists in continental Europe and has done so for many decades, the description of phenomenology as continental philosophy is still novel "on the Continent." Following the lead of German philosopher Odo Marquard in his posthumous lectures published as *Der Einzelne: Vorlesungen zur Existenzphilosophie* (2013), Capurro has explained the different traditions in contemporary philosophy to us as the result of the products of philosophers of existence versus those of philosophers of essences. We believe this is helpful in understanding both the philosophical arguments but also the variations of interpretation in philosophy of science (which impacts information science and understanding of the information disciplines).

By stressing the importance of moving the foundations of our conceptualization of information toward a more nuanced recognition— that information relationships are embedded within the contexts of our own lives, Capurro has advanced our ability to understand how we can progress from limited conceptions of information-as-tool or information-as-thing towards a view that allows us to see how information interpolates directly with both our communal sense of being and our personal sense of disclosing meaning.

Born in Montevideo, Uruguay, Capurro entered the Jesuits in the early 1960s at the age of 17. Attending first the novitiate in Uruguay, then the juvenat in Chile, he devoted himself to humanistic studies, particularly Greek and Latin, rhetoric, history of art, and literature. Capurro first took up his study of philosophy in Colegio Máximo San José, San Miguel (Buenos Aires). During his time there, hermeneutics had just found a resurgence in the wake of Hans-Georg Gadamer's newly published *Truth and Method*, which, in conjunction with the influence of Emmanuel Levinas, established the initial foundations for Capurro's own philosophical development. According to Capurro, Levinas, at the time, served as a kind of antithesis to Heidegger.⁵ Capurro and his Jesuit peers were also particularly influenced by Husserl and Heidegger's philosophical direction which were mediated through the teaching of Juan Carlos Scannone (who had been a student of the Vatican II theologian Karl Rahner)⁶. Capurro explained it to us this way:

Scannone was our (my) point of academic reference, not Thomism, but phenomenology, Husserl and Heidegger and also ethics related to the so-called philosophy and theology of liberation, that was strongly influenced by Marx and Che Guevara... We were also influenced by French existentialists like Sartre and Camus, by Saint-Exupéry,... so Thomism was the past, still there, but not the leading force any more. We read of course Augustine and the Greek and Latin Fathers but this was a more spiritual than an academic influence, except maybe Augustine. Abelard: yes, the *Historia Calamitatum*, not his main philosophical works, the same for Pascal. Descartes was the founder of modern dualism as criticized by Heidegger in *Being and Time*. So... ethics in the sense of practical commitment for the poor was essential academically and existentially, there was no movement from philosophy into ethics, but philosophy meant an involvement with ethical issues. We had courses also in value ethics, particularly on Jankélévitch, but there was a tension between this kind of ethics with the kind of existential philosophy coming from Heidegger, Sartre, Marx etc.⁷

Capurro's first publication, *La pregunta hermenéutica por el criterio del sentido del lenguaje* (1971)⁸, addressed at length the issues of language and hermeneutics, largely reflecting these early influences.

It would be another decade before Capurro explored such issues, or philosophy at all, finding instead his post-clerical career in "documentation." In the early 1970s, Capurro

5 Personal communication, 24 August 2013.

6 Scannone's work is often considered foundational to the development of "liberation theology" and he was, in addition to being Capurro's teacher, one of Jorge Bergoglio's (Pope Francis) instructors.

7 Personal communication, 25 November 2015.

8 "The Hermeneutic Question Concerning the Criterion of the Meaning of Language."

left his studies in theology and philosophy and traveled to Germany under a scientific exchange between the Federal Republic of Germany and Argentina. He had been appointed to a position in the Documentation Department of the Comisión Nacional de Estudios Geo-Heliofísicos in Buenos Aires in 1971 and, whilst in Germany, acquired a Diploma in Documentation from Lehrinstitut für Dokumentation in Frankfurt am Main in 1973. This was followed by practical experience at the Zentralstelle für Atomkernenergie-Dokumentation (ZAED) (Center for Nuclear Energy Documentation), a part of the International Nuclear Information System (INIS) at the International Atomic Energy Agency (IAEA) in Vienna.

It was during these years that Capurro first saw the potential for studies of the convergence of information, technology and philosophy, and the potential for applying his classical education to the very real day-to-day tasks of the technological transformation of information. Capurro understood what the discipline more generally was only slowly coming to realize—the intricacies of technology and information are intimately infused with human *Being*. Capurro's methodology first manifested in his PhD dissertation: *Information*, in 1978, an introduction dealing with the history of the concept of information (a theme Capurro would return to often throughout his career).

It was through an engagement with the work of the physicist and philosopher Carl Friedrich von Weizsäcker that Capurro first encountered a historical foundation for the concept of information in Plato and Aristotle; this foundation allowed for both an objective as well as a subjective place for information—it also recognized that this relationship had, in a sense, been maintained from antiquity (Capurro, 2009). It was from engaging with the text of Weizsäcker's talk "Language as Information," held in Munich in 1959,⁹ that Capurro discovered what he considered to be the missing link in communication theory. Weizsäcker's drawing together of the Platonic notion of *eidos* (idea) with the Aristotelian notion of *morphe* (form) would ignite Capurro's quest to synthesize a unified concept of information (Weizsäcker, 1971; Capurro, 1996). Like Weizsäcker, Capurro would discover "an old truth in a new place" (Truede, 2014, p. 1), realizing that the origins of information theory were grounded, all along, in these concepts. In this way Capurro connects the modern search for the concept of information to its Platonic and Aristotelian roots.

Weizsäcker's inquiry had reconciled two pieces of the information puzzle. It was through reference to Norbert Wiener that Weizsäcker subsequently resolved that information is neither matter nor energy (Wiener, 1961). Working from this premise, Weizsäcker attempted to re-establish information (in its modern incarnation) as having characteristics of both *eidos* and *morphe*. Such ontological foundations of the information concept are not unprecedented. As Capurro notes,

The relation between ontology and epistemology plays a significant role in Greek philosophy, particularly with regard to the concepts of *eidos/idéa*, *morphé* and *typos* in the philosophy of Plato and Aristotle. The Latin terms *informatio/informare* appear in translations and com-

9 Published in the book *Die Einheit der Natur: Studien* (1971) which was later translated into an English language volume as *The Unity of Nature*.

mentaries of these Greek philosophical concepts. It is only at the end of the Middle Ages, with the decay of scholastic philosophy and the rise of Modernity, that the ontological meaning becomes unusual and the epistemological one remains. (Capurro, 1996, p. 1)

Capurro's encounter with "forms" and "in-formation" combined with his roots in existential and phenomenological philosophy, eventually led him into ethics. Ultimately, synthesizing both his work on information and his exploration of relational ethics, Capurro began to develop his own system of thought that would in time manifest as the field of *angeletics*. Capurro moved from an explicit focus on information to one more attuned to messaging, applying phenomenological arguments so as to explain the difference between the *what* and the *who* in this context.¹⁰

As one of the first philosophers to recognize and address the nature of the relationship between information, message and human *Being*, Capurro has helped to lay the groundwork for understanding an information society, or, as Capurro would be quick to correct—"information societies," in the plural. Presenting the "self" as ontologically informational is no small venture; it is a beguiling undertaking. As Capurro notes regarding the explication of this ontological relationship,

if ontological refers to a who and his/her existence with others in a common world, then the meaning of "informational" changes: being informational means for us humans, being capable of letting things be *what* they are, i.e. their "form" or "essence" or way of being. And this letting things be what they are is different from letting ourselves/our selves be who they/we are, and this includes the possibilities of reifying (digitally or not) our whoness that becomes then an "identity" (which is a metaphysical category) that can be purchased, etc.¹¹

In his first book, *Information*, Capurro also asks that we take heed of how

the concept of information is used both in the ontological sense of shaping the material, the shape and material are to be understood as principles of beings, as well as in the epistemological sense of shaping knowledge...The ontological and epistemological meanings are characterized by moments of change, the action and the novelty or the ideological presenting, of representation and comprehension of the essence of a thing...The epistemological meanings therefore relate to the identification and transfer of knowledge (Capurro, 1978, 6.1.2, Philosophical Area, M.Kelly, trans.).

Arguably, Capurro and Fred Dretske were not so far apart (in time and intent) in seeking to put some distance between themselves and an ever-so-immediate information definition (which was a simple or naturalistic category) and that its perception, its ontological meaning, should so often be quickly passed over (emphasizing too readily connections either to data or to knowledge). Dretske states that, with supplementation, these broader theoretics "can be adapted to formulate a genuinely *semantic* theory of information," (1981/1999, p. x) a view which has proved influential ever since. Capurro, in this early

10 Capurro, personal communication, 30 October, 2013.

11 Capurro, personal communication, 28 October, 2013.

work, seeks to explain the insight that “the concept of information is characterized by the original unity of the ontological and epistemological moment” and further that the concept “refers to any self-sufficient, self-contained reality... its logic status is formal-abstract in nature” (Capurro, 1978, 6.2, para. 2). In many ways it seems that his deep immersion in the Heideggerian canon had prepared him to start to take a significant step out of the realist ontological position that then held sway over information science inquiry and to begin to open the door for a more relativist or instrumentalist underpinning in line with aspects of Dewey’s and Popper’s critiques (see also Capurro, 1987; Saab & Fonseca, 2008).¹²

Takenouchi reminds us that this “ability to see through the relationships of meanings” is key to appreciating

the inseparable, interactive, and tight relationships between information technology and human lives, the “outer” and “inner” world, theories and practices, science and technology, and self and others. Whether we are aware of it or not, we always have some kind of outlook on certain plural relationships of meanings in our holistic human lives. Through practice, foresight is put into hermeneutic circulation, which leads to a new understanding or way of seeing. In this process, fixed statements or casuistic norms which provide problems and solutions in advance have slight significance but do not have ultimate authority. The plasticity or flexibility of human lives, in other words, the possibility of projection, provides the key to understanding. (Takenouchi, 2004, p. 3)

How has Capurro brought culture, and theories of culture (the two are not the same), to the forefront of theory and research in the relationship of the information disciplines to philosophy and the *Geisteswissenschaften*? We believe it has been by asking (deeply and often) how it is we understand the various ways that information intercalates between theoretical social science and a more technological or conceptual understanding of the use of information (or data and knowledge) in our everyday worlds. By asking these questions we can, like Capurro, begin to better appreciate the role of information culture in fashioning our social and working lives.

We chose to focus on information cultures in the digital age as the primary theme for this book as information and culture remains a significant area of dispute, of controversy and of interest to not only academic audiences but to broader communities with an interest in how we conceptualize and manage the *data-informatic* that permeates our lifeworlds. While one’s level of economic prosperity, one’s political freedom and one’s level of acceptance based on religious, ethnic or social orientation may differ markedly by country (and within a country), the forces of global capital that can effect change in our technological (and hence informational) state-of-being, are with limited exceptions, increasingly homogenized and homogenizing.

The contributors to this Festschrift have resisted this trend and have provided a diverse and richly-endowed montage of what it means to be motivated by the concept of information

12 Similarly, Hickman (1992, p. 17 ff.) outlines the way that Dewey’s pragmatic approach to technology, “knowing as a technological artifact” begins to sideline many of the prejudices associated with various dualisms of mind, body, thought and discourse.

(or, alternatively, to resist information as the defining motif of practice and significance in dealing with documents and data) in the early 21st century. While this volume is not designed to provide a diorama of all possible worlds, we have been fortunate to attract contributions from South Africa, Israel, the United Kingdom, Sweden, Finland, Spain, Portugal, Germany, India, Thailand, Canada, the United States, Brazil, Uruguay and Australia.¹³ In this sense, our broader desire to open to a wider readership (those with an interest in both information and philosophical themes—if not in information science or the philosophy of information per se) elements of the foundational, ethical and hermeneutical aspects of information scholarship has had fortuitous results. We acknowledge that this is entirely our good fortune in being able to bring together a significant group of scholars who have been—in some way, shape or form—influenced by Capurro's work. We were particularly surprised, very late in this project's gestation, to find that our project was not the first Festschrift to refer to Information Culture in its title. The Festschrift of Capurro's doctoral supervisor Norbert Henrichs has a similar title.¹⁴ We hope readers will appreciate the serendipitous nature of this and, if they are able to, avail themselves of the arguments made in that volume as well.

The milieu in which the information disciplines operate within, that they help to define and to understand is, in our view, intrinsically an ethical and hermeneutically-oriented one. The digital world creates the conditions in which a number of critical factors coalesce (power, equity, virtuality, ecology, truthfulness) that require us to look to how we evaluate and how we understand the relationship of technologies to values, the nature of communicative interaction, and a range of more fundamental questions of sociological and philosophical inquiry. In all of these questions that focus on how we create, use, organize, interpret, disseminate and store information we need to understand the qualities of interaction and the relationships between the various expressions—the social, human and contemporary expressions—of information culture. This type of inquiry brings to more general focus these issues that cross disciplinary boundaries and, we believe, serves to reveal the human quality of information science, of library culture and of the challenges that are involved in defining the issues that impact our digital working and social existence.

The dimensionality of the informational message in terms of ethical, political and privacy concerns needs to be brought into a more faceted understanding that allows for the locus of control to be redefined in terms of the global and diachronic nature of the changes that the digital age has brought with it. The historical and market-oriented factors that change how these factors impact individuals' lives and the information cultures within which

13 Also impacting and informing Capurro's work at a foundational level, but not included in this volume, are influences from both Japan and China (especially the work of Prof. Makoto Nakada of the University of Tsukuba, Japan and Prof. LÜ Yao-huai of Suzhou University of Science and Technology, China).

14 *On the Road to Information Culture: True Information* (Schröder, 2000). Michael Eldred alerted us to how the German title *Auf dem Weg zur Informationskultur: Wa(h)re Information* includes a play on the words *wahre* (true) and *Ware* (commodity). Capurro contributed a chapter entitled "Knowledge Management and Beyond" (*Wissensmanagement und darüber hinaus*). <http://www.capurro.de/wissensmanagement.html>

they are situated are more than collateral issues to the story of information change. These factors are intrinsically and dynamically interactive with the technological realities that take up so much focus within which the discourse of information operates.

How we reason with information as our documentary/artifact-oriented reality, how we relate to problems of a particular and complicated nature, how we see information as operating temporally and in more personal senses¹⁵ are all central to the information culture that we inherit and perpetuate. A generation ago Machlup and Mansfield undertook a somewhat similar project, *The Study of Information*, which they described as seeking to “analyse the logical (or methodological) and pragmatic relations among the disciplines and subject areas that are centered on information” (1983, p. 3). Webster’s edited collection *Theories of the Information Society* featuring contributions by Bell, Castells, Giddens, Habermas and Schiller (1995/2006) is similarly widely consulted, but unlike Machlup and Mansfield’s work, essentially devoid of references to the work of information science. Theorising about information society without reference to the work of scholars who understand information (in its many splended forms) runs the serious risk of treating complex matters in general, prosaic and workaday ways that do not do important themes justice. That being said, Webster’s work and that of his collaborators remains a valuable contribution toward questioning the “neat linear logic” behind the adage that “technological innovation results in social change” (1995/2006, p. 264). Much closer to the dawn of the discipline than today, Borko asked us to ground the work of information science in its documental roots but to, also, breathe new life into it with the ever changing representational and technological contexts that would develop out of “origination, collection, organization, storage, retrieval, interpretation, transmission, transformation, and utilization of information” (1968, p. 3). In the years that followed it would seem fair to say that the nuance has changed, at least at one level, moving from psychologizing the behavior of individuals to defining the situational and conceptual norms that allow us to make sense of complex information and even more complex “public knowledge.”¹⁶ All too often though with reference to ethics and the historicity that underpins our information-oriented work we still operate very much on a paradigm of computer as “tool and research model” (Brier, 1999, p. 81) similar to that which existed in the late 20th century. We hope that such a paradigm might be in the process of replacement.

15 This personal sense goes to how we deal with issues of human finitude and knowledge and with the self-conscious reception that Moore (1992, p. 437) describes when he says that “ineffable insights are practical insights” and asks us to look to how these types of insights help to make “coherent, self-conscious agency a possibility” and to reveal “not merely...how to do things but... how to do anything that is expressive of humanity in its self-conscious finitude (1992, 442).

16 Ma (2015, p.537) makes the case that “the core concerns with how we deal with most information stored, preserved, and organized today is not usually co-constructed by the public based on communicative actions” but is “in the hands of information professionals, who hold the authority bestowed by the public to determine what may become public knowledge.” This leads to quite profound consequences for any hermeneutic (or deconstructive) urge to “think of information as “objective”... [and] leaves us with the questions concerning the collective responsibility in collecting, preserving, and organizing information.”

Within this volume a significant cross-section of issues canvassed deal with unresolved or contentious matters in digital culture. Many of the contributions deal with how science and philosophy cross swords, but also, how they co-operate to help mold our local and global lives. The ethical focus of institutions which mediate the Dretskeian “information flows” that emanate from (and drive) such dialectical and dialogic engagement is a substantial issue for many of the authors in this volume. While some deal with these issues through an articulation of social and textual practices that are philosophically-inclined or related to one type of disciplinary practice or another, several authors challenge the narratives that underpin conventional reception of information culture in the digital age. This move to understand information beyond a simple form of intentionality (from data objectified to information informing perhaps¹⁷) toward a more public discourse that underscores how various types of privileging of narrative, of labor and of market operate to achieve an information end is often, but not always, political in nature. Several chapters look to reveal the historical or genealogical currents that have helped to forge the logical, veridical and moral ways we manipulate and organize information for cultural ends. These contributions help to effect a de-transcendentalization of the information project by helping us to see that there are few permanent neutral matrices available for information inquiry and that many issues and types of understanding recur or are re-imagined. What is foundational (once the wheat is sorted from the chaff) has been made so not because it is a discovery of certain inalienable properties, but because it is characteristic of any scientific project that is, as Sellars would have it, “self-correcting”¹⁸ in nature.

Rorty outlines how the well-known (but often poorly understood) “linguistic turn” in philosophy freed philosophers from empirical dependence (analytically or phenomenologically inspired) and allowed the “Platonic role as spectator of time and eternity” to be re-acquired after the 19th century crisis that saw scientific psychology question philosophy’s relevance in a rapidly changing world (where [apparently] real problems were being uncovered and solved by quite different methods to prevailing Idealist or Neo-Kantian approaches). Rorty calls these linguistic philosophical artifacts “privileged representations” and points to how Quine and Sellars variously, and in a behavioristic fashion, dismantle these in favour of an historically-informed horizon (he does not use such Gadamerian terms but the parallels are obvious) which leads to the conclusion “we do not need privileged representations to account for knowledge claims.” For our purposes, the implication is that relativity (and Rorty makes this clear in more or less general terms applicable to information inquiry) needs to be given greater weight in how we approach the subject of informational reality

17 Dretske (1979, pp. 174-188) points to how in qualifying for cognitive attributes a given system “must be capable of occupying higher-order intentional states,” such states may be said, very loosely, to divide or to discriminate and select information “for special treatment...as the content of that higher-order intentional state that is to be identified as the belief.” We might take for our purposes here the lesson that “plasticity” is key to understanding how systems (machine or human) generate internal states about “distant sources” and refine or reify these as “semantic content.”

18 For a fuller explication see Rorty (1985).

and how we assess apodictic claims made in support of either general (ethical) or particular (hermeneutic or ontological) expressions thereof. To paraphrase Rorty's characterisation of the linguistic turn's contribution to the Platonic project and to give it an informational slant, through return to the specifics of information culture we are better placed to see through the putative "objectivity...necessity...reason and human nature" and to instantiate or embed pragmatic approaches that are constitutive of an approach that recognizes we are "a self-changing being" (Rorty, 1985, p. 104) and that we remake ourselves when we remake our linguisticity, or just as validly, when we remake our informational capability (our information culture).

The ability of scholars conversant with informatic culture (commonly understood as the interstitial space between information science and information systems) and related studies of informatically-informed studies of culture (the difference is slight but important) to help reveal how we find ourselves cast in the digital world, what this means for the realization of past aspirations (our own and the traditions we inherit) and what it means for the active representation of the self as an evaluating, interpreting, temporal being should, we believe, be more fulsomely understood. The particular—and global—vision that our contributors bring to these times of change, the insights into its paradoxical and cyclical nature, the role of values and desire, control and emancipation—how we conceal and reveal our information and the information of others, all of this helps to constitute a better understanding of the relationships between the unchanging social factors (limited as they may be) which exist in the information milieu and the changing paradigmatic areas of concern that require us to question moral or situational choice and interpretive method. Taken together we might see this as, in a sense, empathic understanding (*verstehen*): a variety of such *verstehen* that is unable to be separated from patterns that reflect our language, political choices and perhaps more than anything, our epistemic priorities.

While smooth connections between information practice and cultural practice are often easily made, the connections with the applied information disciplines and their theoretical bases can be tenuous, seriously diminishing the effective critique they propose to offer. We feel that allied to these information-oriented cultural practices is a collateral concept of understanding knowledge environments in this context that is sensitively and creatively engaged in by many of the chapters in this volume. While not all the chapters which follow look specifically at Capurro's work, most do refer to it in some way. They all, however, illuminate the search for the meaning of information practices and we believe will be of use to a range of readers working in a variety of specializations.

David Bawden and Lyn Robinson open the section on *Culture and Philosophy of Information*. They offer a critical yet, ultimately, sympathetic analysis of Capurro's contribution to information science. They are not convinced that the equivocal concept of information, which they describe as "the existence, on equal terms, of different concepts of information in different domains" as outlined in "Capurro's Trilemma" can be well-reasoned, or at least, adequately reasoned. Their argument hinges on the claim that merely finding relations through language is less robust than a category of "objective relations" understood *ab aeterno*. They are not in dispute with the need for an approach that is pluralistic enough

to encompass various uses of the information concept but they advocate for grounded means by which gaps in articulation can be resolved. They seek to resolve, or axiomatize, where Capurro seeks to uncover (or recover) the intentionality behind the expressions of informational reality. While their critique of a physicalist conception of information when coupled with Capurro's message theory is convincing, so is their support also for the ongoing validity of Popper's World 3 ontology—with one qualifier. If we only choose a single norm to instantiate our information ontology we already trespass violently on Popper's aim in propounding this Three Worlds ontology, which was to ensure monist or dualist approaches do not prosper. Apel's criticism of Popper's equation of "the possibility of philosophical grounding with the possibility of deduction" goes to a certain absence of "transcendental reflection or contemplation" (1980, p. 268). It would seem that there is an often unrecognized connection between Peirce's semiotic approach (sign, object, interpretant) and Popper's ontology; in the advocacy of an anti-Cartesianism¹⁹ both reject the intuitionist versions of a truth that is solely anchored to human construction of (informational) reality in favour of an approach that looks to understand knowledge as less mind bound than "subclass of our evolved artifacts" (Skagestad, 1993, p. 173). Bawden and Robinson's pragmatic information philosophy encourages us to look to the questions of the real in an increasingly virtually-oriented world.

For Joseph E. Brenner, the Heideggerian concepts of what it is to be an informationally-oriented human being, as defined by Capurro, are eminently relatable to what we might call a "scientific world-view." Through reference to what is *always and already* the social nature of meaningful information, Brenner explores how we act upon and are influenced by information as ontological ethical reality, inseparable from who and possibly what we

19 Rorty points to how the question of meaning and its relationship to its justification is convoluted. Rather than Descartes having misled us that epistemology is the foundation of all philosophy he, in fact, created the conditions for "an epistemological problematic." The resulting philosophy was a "metaphysics [which] made the world safe for clear and distinct ideas and moral obligations, and in which the problems of moral philosophy became problems of meta-ethics, problems of the justification of moral judgements. This is not to make epistemology the foundation of philosophy so much as to invent something new—epistemology—to bear the name 'philosophy.'" Rorty tracks an eminently simple trace of ancient and medieval *things*, early modern *ideas* and contemporary *words* as reflective of historical change in philosophical emphasis. Likewise, the ontology of information will have various expressions based on a set of considerations associated with the demands of the philosopher-theorists. What we should hope to avoid is the pitfalls of assuming foundational knowledge in discursive fields have eternal relevance (objectivist approaches that become scientistic) or, that if we cannot bed down a concept once and for all, the concept is irredeemably trivial or unimportant (relativist approaches that become nihilistic). Both tendencies make it difficult for us to engage in dialogue across science/scholarship and natural science/social science boundaries. We feel that, put in the most rudimentary way, the advantages of aligning the informational concept with philosophy rather than science far outweigh the disadvantages. In this there is a sense that Rorty's "cultural genre" brings back into focus the need to deploy the informational concept—as he does the philosophical concept—to center "on one topic rather than another at some given time not by dialectical necessity but as a result of various things happening elsewhere in the conversation" (1979, pp. 262-264).

are in the world. We can naturalize this process if we use the right logical tools (those able to describe complex, changing, real phenomena) and do so in the right setting (such as that offered by a process philosophy like the one outlined by Stéphane Lupasco). Brenner outlines how Lupasco's *logic-in-reality* provides a guide as to how to avoid getting lost in false absolutes and abstractions. Brenner's appreciation of the power of abstraction allows him to develop a complex yet clear argument to explain how naturalization, or what he calls "the bringing-into-science," operates to link domain, discipline and use for the edification of real people. Through a close reading of Capurro's work, Brenner provides one of the most lucid renderings currently available of the phenomenologically-oriented philosophical positions of Capurro's writing and ideas and of the relationship of ethics to digital ontology and the broader context of the philosophy of information.

Michael Eldred, together with Capurro, was one of the first to explore a hermeneutical digital ontology. In his contribution, *Turing's Cyberworld*, Eldred applies this ontology and explores the concept of the Universal Turing Machine as signifying the environment of the cyberworld. He addresses the cyberworld in terms of time and space, drawing together a philosophy for the cyberworld through the timeless nature of "copulating" bit-strings. Eldred's mathematical insight helps to contextualize the cyberworld as the newest incarnation of the historical search for a numerical blueprint of existence, an endeavour that stands on the shoulders of Galileo, Leibniz, Descartes, Aristotle, Plato and Pythagoras. He asks, what does it mean to exist within a digital matrix defined by numbers that manifest and interact with us not in terms of the reality they inhabit, but as fully abstracted objects, signifiers, messages incarnated in e-devices and webpages? In an analogue world, our phenomenological encounters embodied a face value that corresponded to an ontological constituent; the digital world, however, is removed from us. We live abstracted from the numbers that inform us, knowing only a picture of reality that is already an interpretation of it, even before we have brought our own horizons to bear in the search for understanding.

Matthew Kelly focuses on how we might see Rafael Capurro's role in promoting a hermeneutically informed information science, as it developed in the late 20th century. He does this through undertaking a close reading of Capurro's project, as outlined in *Hermeneutik der Fachinformation*, and looks at how Diemer, Henrichs and, especially Langefors, influenced this work's gestalt. This is supplemented with an engagement with two of the most significant readings of how hermeneutics in information science should be conceptualized, by Benediktsson and Hansson, in an attempt to come to grips with understanding the inertia that this project promised to overcome and to offer some preliminary insight as to its successes, or otherwise, and where further engagement with this body of knowledge may take information science.

Kelly argues that an interdisciplinary approach to the ontology of information science is important in line with the likes of Guarino who advocate for an approach which sees "philosophy and linguistics play a fundamental role in analyzing the structure of a given reality at a high level of generality and in formulating a clear and rigorous vocabulary" (1998, p. 3). Important to this process is that the result is transparent and that we have a good notion of the commitment that the ontology requires of those who willingly accept

its premises. Hermeneutics is one way to commit to an ontology of information. When approaching the problems that typically arise when dealing with information literacy or information behaviour, whether within the general community or among domain specialists, Kelly argues for an approach consistent with a pragmatic and hermeneutically-informed methodology. Taking a lead from Capurro's early work, he develops aspects of Apel's claim (associated with a critique of ideology which supplements the lessons of philosophical hermeneutics) that understanding is at the core of any approach to ontology and that this has significant implications to how we resolve the specific and global claims of epistemology. Kelly also believes that there are unresolved questions for information science in how we incorporate an objectivist approach to information which satisfies both our need for explanatory elegance and our desire to provide a socially based, historical and ethical formulation which incorporates our communal use of language and its analogue, information.

Capurro's *Epistemologia e Ciência da Informação* (2003b)²⁰ influenced Fernanda Ribeiro and Armando Malheiro da Silva to investigate how the custodial, historicist, patrimonial and technical paradigm of documentation/information science and its post-custodial, informational and scientific successor have become "rooted in different but complementary epistemological conceptions." In their search for a library and information science (LIS) practice that is more than just a descriptive and classificatory instrumentality, they outline how a cumulative or fragmented approach to the information disciplines can be contrasted with an evolutionary approach that is transdisciplinary, and increasingly scientific, in how it attracts the relevant bodies of knowledge into a more dynamic whole. Such a search for what matters to all will generate, in the words of Pombo

the advancement of scientific knowledge... prepared by those material structures, recognized by them in its novelty, legitimized, integrated in the already known, in the systematic whole... [what is established are] multiple relations of interdependence and complementarity, a kind of polyhedric articulation whose structured relationship is endowed of important descriptive and heuristic capacity. (2014, p. 165-166)

While Ribeiro and Silva's chapter could equally have been included in the section in this volume on information education, we feel that the methodological issues that they raise associated with, for instance, technicist approaches to prioritizing organization and representation of information at the expense of generative or communicative aspects that pertain to information use and behaviour are somewhat more oriented to the explicitly cultural and philosophical part of the volume. They emphasize how we face a number of unexpected perils when information "practice prevails over the study and the production of scientific knowledge" and how bringing a greater consideration of function to the design of our information (cultural) system, such that it readily allows a more collective appreciation of how the technical and disciplinary strands thread together to create a stronger, more

20 Originally in English as "Epistemology and Information Science" (1983): <http://www.capurro.de/trita.htm>.

resistant approach, enables the applied nature of our inquiry to be more firmly embedded within the broader scientific domains from which we draw our practice and orient our research endeavours towards.

Anna Suorsa and Maija-Leena Huotari's chapter brings the hermeneutic phenomenological viewpoint to the empirical study of knowledge and looks at how this is created in interaction. This research is a productive foray into creating a "theoretically consistent methodology for increasing understanding and examining empirically knowledge creation in organizational settings." They put forward a strongly argued outline of how Heidegger's concepts of *Being* and Gadamer's diachronic emphasis on understanding and experience can help to underpin a broad panoply of arguments, ontological and epistemological, to begin to identify the important meaning of knowledge creation as a phenomenon. Their methodology drills down to "the knowledge creating interaction as an experience and an event" and opens a door to this type of event as a practice worth studying in library and information science. The process-oriented nature of knowledge creation and its experiential nature demand more than a reductive application of a formula: *knowledge or information*. We might say that there is no entailment in the concepts here, there is update and there is revision. When "dialogue aims at removing some kind of unsettledness (or perplexity) experienced by the parties involved [in communication], through their reasoning" (Tsoukas, 2009, p. 3), and in a very real sense this is central to the notion of openness and authenticity that Suorsa and Huotari advocate, we find a significant space opening up for the role of reflection and for our lived experience as contextually and temporally bound.

Arun Tripathi seeks to tease out the importance of digital hermeneutics for the philosophy of technology and believes that this is fundamentally embedded in our material culture. An expert on the philosophy of Don Ihde, Tripathi uses Ihde's insights to inform his own pragmatic approach to cultural and technological hermeneutics and reinvigorates these themes with a call to philosophers and information scientists to engage with the embodied realm of technology, and information, and to delve deep within their traditions and their own practice to help reveal the "basic cultural and ethical conditions of technological and economic development." Tripathi also seeks a way that we can better understand how the technology/information horizon affects human existence and how human existence, similarly, affects the technology. Tripathi's analysis provides insight into how to bridge the divide between disciplinary methodologies in the natural and social sciences (the very worlds that studies of technology and information encompass) through phenomenological description of several sets of human-technology. Tripathi works with Irrgang's notion that the "adaptation of technology reveals a social and cultural status that is not inherently present in technology" and as he (Tripathi) has stated elsewhere (Tripathi, 2011, pp. 18-19), innovation, technology transfer and cultural transfer are not just simple stories of history but have terminological-methodical pathways that help to describe the shift which is taking place and, in so doing, speed up the changes underway. For theorists such as Irrgang and Tripathi, the means by which cultures assimilate and interact with the changing technological paradigm are key to how standardization and technology transfer work. Through coming to grips with *what is doing the mediating* in our understanding of

the relationship between humans and their technologies; through helping us to understand what we deploy as reality, experience and practice, Tripathi takes us toward a more perspicuous location where we can contemplate the self-interpretive patterns which emerge from such relationships. Similarly, he outlines elements of a productive logic which can help us to ascend to even greater heights of interpretive and integrated relations with the material and discursive tools which (should) enrich our experience of Modernity.

The volume's second section, *Information Ethics*, offers a critical examination of some of the foundational ethical concerns of digital cultures. John T. Burgess introduces the section. He outlines how ethical dilemmas in the context of professional practice, and the resulting polarization of attitudes that strongly held opinions can create, will often lead to factionalism with negative results for the community of practice. In the context of the library and information science (LIS) profession's own liberal versus conservative ideological schism, which plays out in debates between partisans of social responsibility and library neutrality respectively, Burgess outlines how a virtue ethics approach, were it to be better articulated in these debates, would help to ensure that there was a means by which both sets of values could be represented. His chapter investigates the functional and genealogical characteristics of professionalism (within which the LIS community is one representative among many with similar ethical conundrums) and clarifies how the ethical values that are developed within professions help to define how the profession identifies itself in relation to other professions and to the wider society within which it lays a claim to expertise. In a well-reasoned outline of how social responsibility and library neutrality, as motivating themes behind practice, can act to bring us better information environments, Burgess offers a solution for when the balance seems to tip too far in one direction (and, importantly for him, threatens to delegitimize the important consensus that builds up in shared values) by looking to how our decisions can help to bring a stronger sense of purpose for long term growth. He brings a strong argument forward to help resolve antinomies that can be debilitating for professional groups who have a medial role in working both for governments and for communities, that is who have dual roles to play in enacting policy-based work and work that is fundamentally socially connected.

Christian Fuchs explores the political economy of social media and surveillance through an information ethics framework which compares the respective approaches Capurro and Luciano Floridi have taken in attempting to address how we develop an equitable information society. While Capurro stresses a human social foundation to information ethics, deconstructing questions of social power through an emancipatory theory of information ethics where assumed moral codes are challenged, Floridi opts for a pan-informational approach to the information society that sees the human social sphere as merely one element among all constituents that make up an informational space, levelling the ethical landscape (for example through the trope of reducing entropy) such that moral accountability among informational *objects* might be said to play an equal part within its broader construction. Fuchs observes that the Capurrian theory remains a workable platform to understanding the very human-driven political landscape, while Floridi's model negates the possibility of defining a politico-information economy.

Soraj Hongladarom provides an overview of the concerns of intercultural information ethics. Hongladarom advances the view that while the internet was built on Western libertarian values it must adapt to differing idealisms in order to evolve and in order to lend itself to the cultural environment it finds itself in. Hongladarom does not hold to the common ideal of a universal intercultural information ethics but advocates for a more nuanced approach, one that ought to in his view, be more appreciative of the paideic qualities a particular culture brings in its engagement with global modernity. In his chapter he argues for the rejection of the search for a universal set of values for the internet and instead proposes that the search for universality be discarded in order to open up questions that ask which set of values serve the existing requirements of people in a particular time and place. Thus, instead of looking to determine what values represent a universal truth, Hongladarom asks instead which values are the most utilitarian in nature.

Illuminating the notion of responsible research and innovation (RRI), Bernd Stahl highlights instances of collaboration between Capurro and European institutions around ethics and technology. Recalling Capurro's part in the European Union's ETICA Project (Ethical Issues of Emerging ICT Applications), Stahl reminds us that much ethical discourse on technology is done after the fact, in retrospect, when it is often too late to change the parameters of what has already been widely established, the technology already having become embedded in normative functions. Instead, foreseeing as much as is possible the potential ethical implications of technology, the possibility of proactively addressing those issues should take precedence in defining the agenda. In order to grasp the nature of this type of prediction a number of emerging technologies were outlined as paradigmatical in the ETICA project. Stahl applies RRI methodology to the discourse around the examples used by ETICA, demonstrating the application of principles and how they relate to the values of European institutions. The key to understanding what an RRI framework enables, separate from the merely descriptive, is that it offers the "normative premise that research and innovation are subject to social intervention and that societal actors can legitimately influence the course of their development," and that this is ultimately related to an articulation of a set of values which are worth upholding. Stahl provides an outline of how RRI (which he describes as "a response to the dilemma of control") might be applied to affective computing as an example of an opportunity to ensure social priorities are also built into an emerging technology.

While information ethics is perhaps the most well known contribution by Capurro to the study of information, his evolution from the study of information to the study of message through angeletics is perhaps one of his most unique contributions. The next section of our collection, *From Information to Message*, includes a number of chapters which deeply engage with the philosophical foundations of communication theory. John Holgate examines (the Renaissance artist) Raphael's famous painting, *The School of Athens*, in a chapter which further develops his own angeletic perspective. Holgate, applies angeletics as a methodology in what is a radical new examination of the meaning behind the painting. Holgate looks to how *The School* is a vehicle for Raphael's heteronomic philosophy and utilizes insights from Capurro, Lacan and Žižek to underpin his analysis. For centuries the painting has

been a point of interest to artists, theologians and historians, acquiring, for the most part, an interpretation that neglects any in-depth analysis of the messenger, Diagoras of Melos, arriving amongst the central figures of Plato and Aristotle. Holgate seeks to revitalize an interpretive interest in *The School* in his claim that this *angelos* (messenger) is in fact central to the painting's message, and, along with the exiting figure opposite, Theodorus the Atheist, signifies the entry and exit of Greek philosophy into Raphael's contemporary European milieu. The key, according to Holgate, is that the entering messenger signifies an interaction with the ancient Greek philosophical system that comes from outside of the established Christian normative structure. Quite literally, this messenger represents an external subject from that which stands beyond the frame of the painting, implying the continuity of message, the very foundation, philosophically speaking, to *angeletics*. In a further development of his and Capurro's earlier collaboration, Holgate reinterprets the artistically rendered interpretation of the allegorical and structural elements of *The School* (and a number of other works) from a philosophical stance, and through doing so, reveals a very unorthodox possibility for the hidden meaning behind Raphael's work.

Fernando Flores Morador reviews Capurro's *angeletics*, providing the reader with an overview of Capurro's work bridging message and messenger. Flores Morador makes clear the relationship between information and intentionality, placing the Capurrian *angeletics* into a logic formulation, *p implies q*, to mathematically demonstrate the relationship between the objective and subjective character of information as message where the message affects changes at both ends of the given act of communication. Flores Morador expands on the recognition by Norbert Wiener that information is neither matter nor energy, picking up on Capurro's work to suggest instead that order, and information as the measurement of disorder, interact as intentionality to create certainty or loss of order. Such a process leads to a state of entropy. This understanding is what he entitles the rhythm of the communicative act. Flores Morador outlines a new clarity for the vision of *angeletics*, and we are sure that it will be interesting to see how Capurro responds.

Gustavo Saldanha's chapter draws together a powerful expression of horizons in time and space by placing Capurro in a 1980's Germany, offering a metaphor that ties together the developing, locally-influenced philosophy of Capurro with Wim Wenders's *Wings of Desire*, a film outlining the solitude of a divided Germany. Where *Wings of Desire* follows the activities of Damiel and Cassiel, two wayward angels who happen upon a silent and repressed Berlin, "Saldanha's Capurro" concurrently begins to put together the foundations for what would become, on one hand, the philosophy of intercultural information ethics, and on the other hand, the hermeneutical model of message and messenger, ultimately called *angeletics*. Saldanha skillfully weaves a narrative in which Damiel and Cassiel re-enact the story of Hestia and Hermes through the Greek understanding of *daimon*. He relates this to "a linguistic turning point in philosophy, a philosophy of culture in the socio-historical dilemma and, finally, hermeneutics and its ethics of alterity." Saldanha retells the mythology of demons and angels, relying on the metaphorical Judeo-Christian story of The Fall as descriptive of the loss of the ability to name the essence of things. Through the insight

provided by Saldanha's allegory the reader becomes an observer to a rich awakening of the many influences behind Capurro's hermeneutical *angeletics*.

It was pleasing that several contributors chose to present research on *Historic and Semiotic Themes* for the Festschrift. Bernd Frohmann's chapter is a complex investigation of how there are significant linkages between "the ethical and political dimensions of communication and message theory" and "the relationship between the human capacity of communicative rationality and both moral and political praxis." Frohmann contrasts Paulo Virno's analysis of how *topoi*²¹ function—as "conditions of the possibility of thought and language," with more traditional philosophical interpretations such as in Aristotle's rendering of them as "modes of argument." Virno, in seeking an emancipatory space where the *general intellect* cannot be captured, locates it in the *topoi* of the common place—a general condition. Frohmann also seeks this grounding, a grounding exempt from the zones of consumption and capture by the forces of capital, but he goes beyond this and looks also to the extension of it to *special places* and seeks to do so by emphasizing the rhetorical nature of such *topoi*. From the Aristotelian perspective on *topoi*, Frohmann makes a connection between orality and documentality and outlines the complexity with which "utterance can become object," and how virtuosity (a faculty of transformative political potential) has a unique capacity to commodify its products. The discussion of how humans and their machines find an illocutionary relationship that brings about a form of *social knowledge*²² poses challenges to how we conceive of our subjectivity, in communicative realms, as an appurtenance. It also, thankfully, has an alternative expression to which we may hoist our colors, that of the development of a scientific culture which is predicated upon a jointly determined practice, where:

an individual's scientific knowledge is made possible by that individual's social and cultural context, that is, it rests on the work of others as well as on social conventions of interpretation and it requires participation in practices of transformative criticism. (Longino, 1990, pp. 231-232)

Jonathan Furner discusses how information science can move from a search for its constitutive parts beyond just the foundational information concept and look to more tacit concepts such as data and document. He outlines how the concept of data (not only code but facts and statistics in the non-digital context) has traversed an interesting genealogical development and how its companion concept *document* has, through the movement of the same name, enjoyed significantly greater focus to recover the various meanings that can be associated with its use. Furner's chapter is a novel introduction to the ways in which we conceive of the interplay between data and document and makes the case for seeing data as much more limited in its application, but also as having a wider group of meanings (he takes Floridi's classificatory approach which recognizes four interpretations of data in its

21 Themes or topics.

22 Li, Lin & Lin (2014, p. 635) describe social knowledge as a combination of "user-generated content and non-content information." Quite obviously, the wiki is the best example we have so far.

taxonomy and adds another five). Furner describes how, current practice notwithstanding, it is not in fact the case that documents are made up of data, nor that the document is a species of dataset: rather, it is the other way round, in both respects. A dataset is made up of documents; and the dataset is a species of document. We are pleased to include the substantial original research which lead to these conclusions in this volume.

Joacim Hansson's chapter returns us to librarianship (with, of course, implications more broadly than that) and argues that there has been a long tradition of ethics that have been prescriptive in their orientation. He focuses on how these statements, and the documents to which they refer, can be mutually oriented. Hansson's argument is that at various times a class of document has provided a legitimacy to the profession and that these types of documents ensure that a prescriptive role is emphatically defined. Utilizing a series of examples that span the 15th-20th centuries, Hansson reveals how formal ethical codes in the informational space are not a new phenomenon but can be traced back through a history of prior attempts to prescribe how we should operate when faced with options for dealing with documents. Among the important discoveries are that while there are differences in how we instantiate identity, values and obligations, there are also commonalities that are plainly identifiable in terms of "legitimacy for the profession through their respective contemporary relevance." Hansson draws on Buckland's (1997) discussion of how it is the function—rather than the form—of the document which needs to be the semiotic factor that is prioritized in how we characterize mundane and foundational criteria. Those who organize artifacts need to be cognizant of what these disclose about the world that produced them and what the implication of this is for those who must define the meaning which recurs as a result of the process of signification and, as it is placed, as an *object-in-evidence*—especially as Buckland states in terms of "the way it is arranged, indexed or presented" (p. 808).

Vesa Suominen's discussion of Descartes's philosophy in information science is in good company with the likes of Brookes, Capurro, Floridi, Day, Budd, Hjørland, and Brillouin, who have, in some way, touched upon the vast topic of how we conceive of subject, object, self and informational entity previously. The routine way that Cartesianism is alleged to be the source of a fallacious modernism is at the heart of Suominen's chapter. He asserts that we face a representation of Descartes's thought which is neither thorough nor fair, or well-articulated. Those for whom the more prosaic calling of—being a "Cartesian"—would seem eminently reasonable are, it seems, by this cast of mind, propelled into an overall existential state which leaves them defined as ineffably misguided. Suominen, asks us to try to see Descartes's claims in the context of Gadamer's hermeneutic. While this is not immediately an obvious marriage of like minds, if we look to how "the foundation of our capacity to know and understand anything" is not absolute, then we can quite reasonably conceive of how in our knowledge and understanding any "overly self-confident attitude could approach arrogance," we should be better prepared to give up the pre-understanding that can equally be associated with the raw conceptions of the *cogito*. Similarly, we are asked to re-conceive the *particular rationality* of our information practice and how we might admit some room for (a historically contextualized) Cartesianism. Suominen's close read-

ing of Descartes helps us to define how we can bring a hermeneutically-oriented approach to understand how *moments of knowledge* interpolate with our sense of finitude, and of broader ontology and language use, to better inform our current information practice. The implied claim that historical justification might be the lesser of two evils (philosophy being the practice whose informational justification is most suspect) leaves us in need of a more phenomenologically-oriented approach to the philosophy of information.

Our next section, *Resisting Informational Hegemony*, incorporates a series of important arguments associated with markets, labor, autonomy and identity which look to what works, what is transparent and what should be transformed in terms of the cultural economy of information. In so doing, it extends the focus on information ethics into more explicitly critical realms. Thomas Hausmanninger's chapter provides a guide to the antagonistic (but potentially commensurable) nature of the relationship between internet and the market economy. Grounding his argument in what is implicit for a "message society" in Capurro's message theory, and in Habermas's theory of rationality, Hausmanninger looks to how cultures are formed in the gaps between technological structure and market, and in the "decentralized, diversified and rhizomatic structure" of the internet. Interrogating the rise of the liberal market economy for clues as to which way the wind will blow, he asks: can the market ever fix what is wrong, deeply and structurally wrong, with a system that has significant distributive entropy (lack of predictability)? When the cultural dynamic is that strategic rationality is all that matters (namely, I use the internet my way for my purposes which maximize my, largely economic, gains) we are left with a severely diminished information setting that might have promoted knowledge production rather than something much more mundane. While the economic exploitation of social networks is the perplexing, aporetic expression of this, it seems that we may be able to also rely on the creative and productive side of this strategic approach to rationality to help foster growth in "collaborative reasoning and knowledge production." Hausmanninger provides both a strong caution to where the endgame might take us but also a strongly argued ethic for how we can subvert the dominant paradigm.

Following the example of metaphor often employed by Capurro, Daniel Nagel and Juliet Lodge paint a colourful and complex canvas which illustrates the nature of deception, illusion and authenticity in cyberspace, building off of, and adding to, Capurro's understanding of revealing and concealing the self in a digital world. Exploring the particulars of interacting in a new ontological interface with others, the question becomes, very much so, one of authenticity. What is deception and what is self-deception online? In the early days of the internet, Capurro, tongue-in-cheek, suggested that we need all learn to lie in order to keep ourselves safe online. The implications of identity and authenticity have become immensely more complicated in recent years where we are forced to shape complex representations of ourselves. As online and offline lives blend, and the distinctions disappear, with further integration into digital Being we are faced with new questions of identity and self-identity. Where once we assumed a privacy that needed no particular protection, we now have to construct it. What is a lie by omission online? Are we justified in lying online? More importantly, does the nature of deceit itself change in digital ontological spaces?

Marco Schneider surveys Capurro's intercultural information ethics in relation to a Marxian theoretic, applying the legend of the Golem as a metaphor for looking at ideas of *living labor*, *dead labor* and the working class. Schneider contends that an intercultural information ethics can only work by way of a true understanding of the relationships between ethics, culture, information, technology and social class divisions. Taking a figurative leaf out of Capurro's book, Schneider claims that a universal ethics cannot exist if it disregards the rich and intricate variety of ethical traditions from around the world. Schneider does not believe that the confluence of technology and "the intercultural" is insignificant, rather, he maintains that the very synchronicity of the two, united in terms of ethics, insists on the impossibility of understanding one without the other.

Shaked Spier's chapter examines assumptions associated with the concept of information societies. He points out that the prevalence of the concept of "information overload" is a paradox since while the existence of information (as made clear through the Capurrian hermeneutical process) is the product of active selection by individuals, it is also inextricably linked with a commodification of information in terms of capitalist culture where information becomes, simply, a product of consumption. The illusion of information commodification is that while corporations ostensibly exist to serve the user of interactive information platforms such as social media, search engines and so forth, in fact, the paying customer of these platforms (the customers that actually keep said platforms in business) are not the users but rather the third party agents paying for information about the users. While Spier highlights how information is a commodification, one might also explore how information users commodify themselves. The very de-personalized concept of "user" signifies how users are a commodity rather than a more powerful, directive, choice-oriented group (customers). In the world of ICTs and the Internet of Things (IoT), the hunter becomes the hunted; the user is, eerily, no longer the customer.

In line with what we see as the pragmatic Capurrian agenda that is at once both optimistic—that is it is deeply influenced by the role of historically-effected consciousness²³ (its ability to know itself) and realistic—influenced by Marx's critical-satirical approach (confident that action can lead to social change), we have identified our closing section *Futures: Information Education*. Capurro offers guidance in *Beyond Humanisms* to how "the ethics of universalism can be transformed into one of openness and situatedness" and "instead of an ethics of moral imperatives coming from within and beyond the individual, we can develop an ethics of hospitality and care coming from in-between the plurality of humanities articulated in the 'here' of a shared world" (2010, Conclusion, para. 2). We think that there are significant opportunities for educators willing to engage in closer readings of Capurro's information-oriented ethics and angelic theory to provide new and challenging perspectives on the nature of the digital world.

In *Futures: Information Education*, we look to how a range of scholars are conceptualizing change in education for an informationally-rich and diverse world. We see examples of the importance of a global view of the way forward, but also how there are local issues and local

23 Translated from the German *wirkungsgeschichtliches Bewusstsein*.

emphases associated with information culture which need to be approached contingently and with appreciation of what helps people to integrate praxis into their communities. The contribution from Juan-Carlos Fernández-Molina and Enrique Muriel-Torrado has a significant focus on both ethics and its application for information science education. They investigate how university students understand and how they warrant authorial rights in the digital setting and they investigate the various ways in which the use of digital information comes up against “complex and restrictive” legislation. Fernández-Molina and Muriel-Torrado advocate for advancing copyright education in conjunction with other information literacy standards and outline how libraries need to deepen their chaperoning role: both regular graduates and researchers need to be better prepared to enable them to operate in a professional and social context that involves navigating a more complex information environment and deploying strategies that facilitate their leadership in these domains. They present a draft for a training program underpinned by a focus on information literacy standards that looks at integrating education on copyright law, plagiarism and academic standards and, also, how the copyleft approach brings an alternative interlocutor into play.

Lena Vania Pinheiro outlines how Rafael Capurro’s work on information paradigms, ethics and angelics has influenced the information science community in Brazil. Through a citation analysis focusing on Brazil’s National Meetings of Research in Information Science (ENANCIB) and the working groups of the Brazilian Association for Research and Graduate Studies in Information Science, Pinheiro reveals how Capurro’s research has been progressively taken up over the past decade by Brazilian scholars and is having its strongest influence on those who are focused on historical and epistemological studies in information science. With first-hand knowledge of Capurro’s passionate interest in all elements of information and ethics, and the growth of a dynamic regional research culture, Pinheiro relates an important part of Capurro’s journey from, and back to, South America.

Chaim Zins and Placida L.V.A.C. Santos’s chapter is a laudable, and practical, attempt to outline how we can improve academic education in the field of library and information science. Through “structuring the curricular and pedagogical reasoning,” which makes educational programs what they are, we are offered the chance to influence the future scholarly directions which result therefrom. The significant and extended research project reported here for the first time involved two methodological phases. The first outlines a Critical Delphi study that brought together 21 leading information science scholars from Brazil to help understand what should be the significant elements of undergraduate education in information science. Zins and Santos followed this up with an evaluation of the content categories which emerged from the inquiry which was based on a grounded theory study of more than 100 programs worldwide. What resulted was a model that they quite plausibly claim has universal applicability to inform how these degree programs are designed, regardless of the location of the program. Their approach is systematic and incorporates a four step developing process; it comprises a structured plan of 288 potential content categories. We feel that we can confidently say that we expect that it will be influential globally as a model for pedagogical design and we are pleased that it has found a place in this Festschrift given Capurro’s unrelenting push to bring informational awareness to

students the world over. We believe that it is important to emphasize that it is only through better information science education that the information ethics goals that Capurro has so strongly advocated for (namely, accessibility, equity, transparency, coherence, veridicality) can be capable of their fullest expression in all parts of the world (and not only in those states in which these freedoms are articulated in challengeable legal frameworks).

Rachel Fischer, Johannes Britz, and Coetzee Bester are educators with a deep knowledge of, and empathy for, Capurro's work in intercultural information ethics. Their chapter provides an introduction to the work of the African Network for Information Ethics and the African Center of Excellence in Information Ethics. They chart a fast-moving progress from humble beginnings in 2005 through significant progress in both scholarly collaboration, publication and teaching, spanning many regional African chapters of the Network and the Center of Excellence. They fittingly close our Festschrift in honor of Rafael Capurro with an outline of his commitment to progressive social change and intercultural comity in the African context.

The way that information and ethics are intertwined will, it seems, forever be issues of global concern encompassing the interests of all humanity (or their robot delegates!). How we define the particular, personal and professionally-oriented aspects of this relationship and how we understand the global and (dare we say) timeless aspects of how we understand it—how it changes us for the better or chains us to forms of being that diminish what it is to be human—are yet to be meaningfully played out. As Capurro's life's work has touched upon many of these themes we hope this volume will serve to enlighten and further stimulate debate on these topics. We also hope that it will further stimulate broader interest in the relationship between information and culture to align with Capurro's (2015) search for how we can understand this relationship as less apophantic than hermeneutical, as less *simply declarative* and more *content driven*. In an informationally-rich world mediated by digital infrastructure it is important to discuss the concept of information in the same way that philosophers have attempted to clarify the concept of language; we need to "invoke the nonpropositional, the inner dialogue" (Grondin, 1994, p. 147). Just as for millennia our social desire to "understand a writing" has been "no indifferent, pure epistemic process that occurs between a subject and an object [but] a self-understanding that bears witness to the fundamental uneasiness and way of being of a *Dasein* who strives after meaning," (1994, p. 139) it seems pertinent to observe how the same desire to understand information will undergo a similar transformation. Capurro has been the philosopher, and the information scientist, who has led us to remember this.

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Culture and Philosophy of Information

Super-Science, Fundamental Dimension, Way of Being: Library and Information Science in an Age of Messages

David Bawden and Lyn Robinson

Abstract

This paper examines some conceptual issues for library and information science (LIS), with a focus on how they have been treated in the scholarship of Rafael Capurro, based on a selective literature analysis. Three topics are examined. First, the concept of information is considered, with particular reference on the value of theoretical approaches for LIS, and with emphasis on a comparison of Capurro's approach with those of Popper and of Floridi. Second, the nature of the information-centric disciplines is considered, with particular reference to Capurro's conception of a conjoined LIS discipline, rooted in the humanities. Third, Capurro's ideas of digital ontology and digital hermeneutics are outlined, with emphasis on their value in providing a theoretical background for studying the new generation of immersive multisensory documents. It is concluded that the kind of rigorous study of foundational issues which characterises Capurro's work will be of even greater importance for the LIS discipline in the future.

Rafael Capurro's body of writings encompass a wide and diverse set of issues of importance to information science, but within them one may identify a number of recurring themes. In this paper we identify and discuss three of these themes, basing our analysis of some of Capurro's own writings and on a highly selective review of recent literature. We first, and at most length, consider the nature of information itself, following Capurro's insistence on the importance of a clear understanding of this foundational concept, and focusing on epistemological aspects. We then examine the nature of the disciplines which have this concept as their focus, and examine Capurro's advocacy of a conjoined discipline of library and information science (LIS). Finally, we look briefly at the way in which this discipline may develop in the future, again following Capurro's imaginative and forward-looking ideas. It has to be said that Capurro's ideas are not always easy to come to grips with; but as Luciano Floridi, with whom Capurro has had a somewhat combative relationship, has pointed out (Floridi, 2008), there is much of value to be found there, even for the less-philosophically inclined LIS scholar or student.

The Nature of Information

A constant theme running through Capurro's writings has been that of the value of a clear understanding of the idea of information, as he sets out to "undertake the task of exploring the past, present and future of the concept of information" (Capurro, 2009, p. 126). This recurs in a number of his publications, but is particularly focused in an influential review, *The Concept of Information*, which had been cited over 100 times by mid-2015 (Capurro & Hjørland, 2003) and in an article derived from it (Capurro, 2009).

The concept of information is widely, and increasingly, used in a variety of disciplines, many far removed from LIS. Capurro and Hjørland (2003) argue that it is important for LIS to consider the way the concept is used in different disciplines, not least because many of the theoretical approaches in LIS have their origins in other subjects.

Capurro is in company with a number of other authors in noting the ways in which the word "information" has been used over time; see, for example, Schrader (1983, 1986), Bawden (2001), Díaz Nafria (2010) and Furner (2013). A detailed analysis of the linguistic roots of the term, and of the usage of the concept since classical times, shows a change in its meaning, and in particular of a continuing duality between an objective and subjective implication of the term (Capurro & Hjørland 2003; Capurro 2009). This complexity in meaning has led to what has been termed "Capurro's Trilemma," with three options for understanding the idea of information (Capurro, Fleissner & Hofkirchner, 1999):

- univocity: the concept of information has the same meaning in all contexts
- analogy: the concept of information has an original meaning in a specific context, and is applied as an analogy in other domains
- equivocity: the concept of information has different, but equally valid, meanings in different contexts

The implication of this is that a truly unified theory of information is impossible, since, whichever of these options is adopted, no satisfactory theory can result (Treude, 2015). The first option loses all sensible distinction, so that biochemical processes and the composition of an email are "the same"; the second relies for unity on loose and perhaps anthropomorphic analogy, such that we may say that molecules "talk to each other" in a manner analogous to that which people do; and the third abandons from the start any intent at unification.

In assessing the trilemma, almost twenty years on from its first formulation, it still appears to capture much of the difficulties of understanding the concept of information. The first option appears so reductive as to be of no value, and yet it is, presumably, the one which would have to be pursued in setting any single theory of information for all domains, at least in any scientific sense of "theory." We must agree with Furner (2010) that the prospects for any such "one size fits all" theory of information are not good. The second is undeniably true: there are original and clear meanings of information in specific contexts—the Shannon measure most obviously—and such meanings are indeed applied analogously or metaphorically. But analogy and metaphor, though they may aid understanding, are

hardly components of any theory worth the name. The third, while defensible, necessarily ignores valuable insights into similarities between differing concepts of information, and results—at best—in a multiplicity of theories of information, all resolutely separate, and without hope of any cross-fertilisation.

One solution could be to declare one concept of information to be primary, and require all others to relate to it; essentially option two, but with the relations being more than analogies. Capurro rejects this idea, and prefers to accept, in option three, the existence, on equal terms, of different concepts of information in different domains, and then to establish their relationships through a Wittgensteinian language game approach, seeking family resemblances (Treude, 2015). More specifically, he recommends a concept of information that “connects, without leveling [sic] differences, human and non-human angeletic phenomena” (Capurro, 2009, p. 137), “angeletic” implying some form of message. He notes that this has some commonality with, without being the same as, Brier’s “cybersemiotic” approach to a unified theory of information, which also emphasises communication and meaning (Brier, 2008, 2013).

This approach, while attractive in many respects, is limited to finding relations through use of language, and is therefore far from establishing any objective relations. The focus on messages is also not self-evidently appropriate in all contexts. While Capurro (2009) shows convincingly that objective measures of information, such as that of Shannon, may be understood in terms of messages, his suggested extension to thermodynamics, via the ideas of Weizsäcker, do not seem fully convincing, other than as analogies. There is a good deal to be said about the relation between information and entropy, complexity and similar physical concepts (Bawden & Robinson, 2015a, 2015b), but it is not yet evident that this is best expressed in terms of messages and messengers.

A rather more general approach has been outlined by Robinson and Bawden (2013). This involves accepting, as in option three, the distinct information concepts in different domains, and then seeking to find relations—to bridge the gaps between concepts—by more than simply linguistic means. There are, it seems, two kinds of gaps: those between the concepts; and those between scholars who think it worthwhile to try to bridge such gaps and those who do not.

Two examples can be given of such “gap bridging” attempts. Stonier, taking a general view of information as an abstract force promoting organisation in systems of all kinds, proposed evolutionary links between information in the physical and biological domains, and then between information in the biological and social realms (Stonier, 1990, 1992, 1997). Bates, again claiming an evolutionary perspective, related five information-like entities in the physical, biological and social domains (Bates, 2005, 2006). She categorised these as:

- Information 1—the pattern of organisation of matter and energy
- Information 2—some pattern of organisation of matter and energy given meaning by a living being
- Data 1—that portion of the entire information environment available to a sensing organism that is taken in, or processed, by that organism

- Data 2—information selected or generated by human beings for social purposes
- Knowledge—information given meaning and integrated with other contents of understanding

While it is fair to say that neither of the approaches of Stonier or of Bates has met with general acceptance, they are an early indication of the kind of gap bridging that may be possible.

A gap bridging exercise of a rather different nature is Floridi's Philosophy of Information. Starting with Shannon's theory as a basis, this develops, by philosophical analysis, a general theory for biological, environmental and semantic information (Floridi, 2010, 2011). Floridi's ideas will be mentioned later, as the only current general model of information directly applicable to the concerns of LIS.

Despite his interest in other disciplines' use of the information concept, Capurro invariably returns to a focus on how LIS should view the idea. This has involved a restriction on the scope of the information concept:

one thing seems to be clear: the notion of information in our field is explicitly referred and restricted to the human sphere. This means a(n) (implicit) rejection of information science in the sense of a super-science whose object is information at all levels of reality. (Capurro, 1991, p. 83)

The most important concept within information science is not information itself, but the human being: information is a "fundamental dimension of human existence", and its use to share knowledge is a "way of being" (Capurro, 1991, p. 83). Information is what is informative for a given person, and the most important perspective for LIS is to view information as a constitutive force in human society (Capurro & Hjørland, 2003). This is very much in line with the ideas of Hjørland, who argues forcefully against the relevance of objective conceptions of information for LIS, and hence against gap bridging models which incorporate such conceptions (Hjørland, 2007, 2008).

Capurro has been generally critical of all the conceptions of information commonly used within LIS; this tendency to challenge common assumptions and models is one of the more intellectually pleasing aspects of his scholarship. Ma (2012), for example, identifies three leading foundational theories of information of relevance to LIS: the quantitative information theory developed by Nyquist, Hartley and Shannon; Popper's Three Worlds epistemology; and the data-information-knowledge-wisdom hierarchy. Capurro has found reason to criticise all of these at some time.

Capurro and Hjørland (2003) noted, seemingly approvingly, the overall tendency to regard the mathematical theory of information as a blind alley for LIS; and indeed Shannon's objective conception of information sits ill with Capurro's focus on human information, although he does, as noted above, include Shannon theory within his message-centric approach to information (Capurro, 2009).

As regards the well-known data-information-knowledge-wisdom hierarchy (Rowley, 2007), Capurro regards it as problematic, since it is unclear how each level emerges from the one below (Treude, 2015). Similar criticisms have been made by others, such as Frické

(2009), and Randles, Blades and Fadlalla (2012), who regard it nonetheless as a valuable metaphor.

The third foundational theory, Karl Popper's Three Worlds ontology, stems from his ideas of "objective epistemology" and "knowledge without a knowing subject" (Popper, 1979). This holds that all information-related entities, and for that matter everything else in the world, falls into three categories, which Popper terms "Worlds":

- World 1 is the physical world, of people, books, computers, buildings, etc.
- World 2 is the internal, subjective mental state of an individual, including their personal knowledge
- World 3 is the world of objective knowledge, which may be communicated between people by means of information stored in documents.

This framework was adopted enthusiastically by Brookes, who announced it as the most appropriate philosophical foundation for the information sciences (Brookes, 1980). The task of the information sciences was to understand World 3 of objective knowledge, as instantiated in World 1 objects—documents of all kinds—and its interactions with the cognition of the user, Popper's World 2. Popper's views were criticised, in philosophy generally and in their LIS application specifically, as an unnecessary "mystification," introducing spurious and unnecessary complexity: see, for example, Neill (1982) and Rudd (1983).

Capurro (1991) and Capurro and Hjørland (2003) support Rudd (1983) in arguing that Popper's World 3 is not needed to explain information processes. They note an overall tendency in information science to prefer Peirce's semiotic viewpoint to Popper's meta-physical pluralism; informative objects are signs (World 1 phenomena in Popper's terms which trigger responses in other World 1 objects).

However, attitudes seem to be changing: as Nutturno (2000, p. 139 and 145) says "most contemporary philosophers regard World 3 as an unfortunate product of Popper's old age: as incoherent, irrelevant and perhaps, if the truth be told, a bit ridiculous ... [but] .. most philosophers who reject Popper's theory of World 3 simply do not understand it." Popper's ideas have been shown to have value for LIS purposes (Bawden, 2002, 2007; Abbott 2004), and are cited as foundational for LIS in recent textbooks and reviews (Davis & Shaw, 2011; Ma, 2012; Bawden & Robinson, 2012). There is also a considerable similarity with the influential framework of Buckland (1991), which distinguished three aspects of information:

- information-as-thing, where the information is associated with a document
- information-as-process, where the information is that which changes a person's knowledge state
- information-as-knowledge, where the information is equated with the knowledge which it imparts.

These have evident similarity with Popper's Worlds 1, 2 and 3 respectively (Robinson, 2015a). It therefore seems that Capurro, with other commentators, may have underestimated the value of Popper's ontology as a natural conceptual framework for LIS.

Capurro (2008a, p. 170) also criticises Floridi's idea of the "infosphere" in much the same way, describing it as "a kind of Popperian 'immaterial world.'" While Floridi tells us that Popper's objective epistemology was an initial inspiration for this philosophy of information (Warburton, 2015), the two are hardly the same. And it should be noted that Floridi himself dissents from much of Capurro's commentary on Floridi's information ethics, and on his philosophy of information generally (Floridi, 2008, pp. 199-201). However, it is worth noting that Capurro is able to fit Floridi's "informational objects" within his message-centred idea of information (Capurro, 2009).

Floridi himself claimed a close relation between his philosophy and LIS, which he described at one point as "applied philosophy of information" (Floridi, 2002). Although this idea met with some resistance, various authors have suggested that Floridi's philosophy may indeed provide a valuable theoretical underpinning for LIS: see, for example, Robinson and Bawden (2013), Furner (2013), Compton (2015) and Dineen and Brauner (2015). Van der Veer Martens (2015) makes similar points, and further suggests that LIS may have contributions to make in developing the philosophy of information; a pleasing prospect for those who feel that LIS should be as much a lending discipline as it is a borrowing one.

In short, Capurro has provided analyses of the information concept, especially as it applies to LIS, which offer different perspectives and insights from anything else available. It would be particularly valuable if some clearer reconciliation between his viewpoint and those of Popper and Floridi could be obtained, as this could provide a valuable theoretical impetus for the LIS discipline.

The LIS Discipline

The nature of the information disciplines, and LIS in particular, has been another recurring theme in Capurro's writings, often closely linked to his thoughts about the concept of information.

He has, as noted above, argued that the central concept of LIS should not be information, but the human being. He does not suggest that a concept of information may not be essential for LIS, if we have adequate concepts of data, meaning, relevance, collection, access etc., as does Furner (2004, 2015). However, he does suggest that the concept of information for LIS cannot be considered in isolation, but must be related to other important concepts, such as documents and media (Capurro & Hjørland, 2003). This viewpoint may be seen as linked with another of Capurro's concerns: that LIS should have a strong awareness of its historical roots, and embrace a historical continuity of development (Capurro & Hjørland, 2003). He equates information science, library and information science, and documentation as disciplines which all grew from the application of the computer to bibliography, and particularly scientific bibliography, especially in the Anglo-Saxon world (Capurro,

2009). This might be seen as an endorsement of a focus on documents and documentation as a central concern within LIS, although Capurro does not seem to have made this link explicitly. Capurro and Hjørland (2003) note that information science, or documentation, was originally based more on specific subject knowledge whereas special librarianship relied more on education and training in schools of librarianship. They identify chemistry as having played an especially important role in the development of information science; this is undoubtedly true, and one might add also the pharmaceutical sector (Bawden & Robinson, 2010). Nonetheless, Capurro has never sought to privilege the information science approach, but rather to argue for a conjoined LIS discipline. Information science should increase its awareness of social questions, and free itself from what Capurro sees as a one-sided focus on information retrieval technology. Joining with the tradition of library science, it should investigate the social phenomena associated with the communication of recorded information (Treude, 2015).

As to the nature of this conjoined discipline, Capurro and Hjørland (2003) note that LIS is only one of a number of disciplines which are related to technology, systems and processes in the communication of information, and that further clarification and strengthening of the specific identity and goals of LIS is desirable. More than ten years on from publication of this view, the need for such clarification seems equally apposite; see, for example, Dillon (2007), Buckland (2012), Lugya (2013). Capurro has consistently sought to attain clarity by arguing that information science should be a hermeneutic-rhetorical discipline, centred on human beings rather than on technology or on an objective conception of information, and focused on the communication and interpretation of meaningful knowledge (Capurro, 1991).

The focus of this discipline should be the production, collection, organisation, analysis, interpretation, storage, retrieval, dissemination, transmission, transformation and use of information (Capurro & Hjørland, 2003; Truede 2015). This has been described, though not by Capurro specifically, as the information communication chain, presented over a long period, and expressed in various ways, as the central focus of the LIS discipline and profession: see, for example, Borko (1968), Duff (1997), Robinson (2009), Bawden and Robinson (2016).

It is, of course, clear that LIS is by no means the only subject with an academic and professional interest in the components of the chain: computer science and information systems, publishing and journalism, communication and media studies, and digital humanities are only some of these. Capurro and Hjørland (2003) argue that LIS's distinctive contribution is provided by a social and epistemological approach to the information chain. The computational aspects of all the components are primarily the concern of computer science, although clearly there are overlaps.

Also interested in most if not all of the components of the chain are domain experts: doctors, for example, will be experts in the interpretation of health information, while chemists will have a particular insight into retrieval of chemical information. Capurro and Hjørland (2003) express the distinction here as one of LIS professionals, even subject experts, working in top-down mode from a knowledge of information sources in general, while domain experts must work in a bottom-up mode, from a specific knowledge to a

more general understanding. This is helpful in clarifying matters, as more disciplines and professions become evidence-based and information-intensive, and take on a different relation to the LIS profession.

Capurro's analysis of the nature of the LIS discipline is convincing, in particular his emphasis on the conjoining of the information science and library science perspectives, on the value of the historical perspective, and on the need for a continuing re-evaluation of what is needed for the discipline to have a distinctive stance and value. His disentangling of the LIS/computer science relation by avoiding a focus on what each discipline is "interested in"—very much the same things, in many cases—but by considering their respective perspectives, is also helpful.

However, his insistence on a hermeneutic-rhetorical basis for the discipline with a central focus on the human, and hence a firm location of LIS within the humanities sector, seems less helpful. This location for the discipline is probably the most common one, and can be seen as placed most appropriately within cultural studies (Furner, 2015). However, Capurro's categorisation seems somewhat restrictive, inasmuch as it precludes some seemingly valuable approaches. It may perhaps be better to regard a conjoined LIS as a field of study focusing on recorded information and knowledge, an approach more open to the variety of techniques, perspectives and forms of knowledge needed to deal with the complexities of its subject (Bawden 2007; Bawden & Robinson 2012, 2016). Compton (2015) makes a similar point, suggesting that LIS will best survey changing times by maintaining its interdisciplinary character. If this means that LIS finds it difficult to establish a fixed position within the academic structure, as evidence shows to be the case already (Bawden & Robinson 2016), then so be it.

The Future of the Library/Information Sciences

A theme which Capurro has developed more recently is the need for a theory of digital ontology and digital hermeneutics, to facilitate understanding of the nature and consequences of the move to a digital world; a theme which has implications for the future of LIS, among much else. This overlaps considerably with Floridi's "philosophy of information" and "infosphere" concept, and has led to robust debate (Capurro, 2008a; Floridi, 2008). Another notable similarity between the approaches of these two scholars is that both see ethical and moral issues as emerging as a natural and important consequence of their philosophies of information; see, for example, Capurro (1985, 2008b) and Floridi (1999, 2013).

Compton (2015) has analysed the differing ontologies of Capurro and Floridi. He characterises Capurro's as continental, Heidegger-influenced, and oriented towards phenomenology and hermeneutics, and Floridi's as analytical and formally logical, and concludes sensibly enough, that both perspectives are helpful. Floridi, who identifies his philosophy of information as spanning the analytic/continental divide (Søraker, 2012), explicitly notes how Capurro brings the tools of continental philosophy to bear on information concepts, and how these are potentially enriching for the field (Floridi, 2008). This has been, until

recently, an approach largely ignored within the information sciences (Cronin & Meho, 2009; McKechnie, Serantes & Hoffman, 2012), and it may be that calling attention to the value of this approach, over a long period, may come to be seen as one of Capurro's longest-lasting contributions. Its significance was noted at a relatively early stage by Day (2005). The intention of the chapter authors is not to join in a technical philosophical debate, which they are ill-equipped to do, but rather to draw attention to the importance of these theoretical issues for the future of LIS.

Capurro emphasises that cyberspace is not separated or independent from the physical world, but on the contrary, is present in all areas of life (Treude, 2015). It is part of the everyday life of millions of people and integrated into their bodily existence, bringing great changes in spatio-temporal social experience, and moving participants further and further away from their familiar "life-world" (Capurro, 2010). And, at a relatively early stage, Capurro (1999) was recognising that these changes required a careful analysis of what is real, and what "real" actually means.

While these considerations may seem entirely theoretical, perhaps even "academic" in the worst sense of the word, we suggest that they will impinge on some very practical concerns for LIS in the near future. An example of immediate impact is the issue of information literacy (or digital literacy), which currently assumes considerable importance in the practice of LIS. Capurro reminds us that it is not sufficient to think of this simply as a matter of imparting a set of information skills; there is a need to base the development of information literacy on a rigorous examination of the nature of information and its role in, and effect on, the lives of people (Treude, 2015).

More fundamentally, as the digital environment develops, and as ubiquitous media systems become commonplace, this combination of pervasive information technologies, fully multimedia and multisensory interfaces, and increasingly interactive systems will lead to the development of immersive environments. These will offer their users, or rather participants, individual immersive and interactive experiences, whether for recreation, training, aesthetics, or purposes so far unimagined. If recorded and stored, such environments will be a new form of immersive document, potentially generating new forms of immersive behaviour (Robinson, 2015a, 2015b, 2015c). These will become the concern of LIS, as has each new form of document in its turn. To deal with these effectively will require a sound theoretical understanding, and this in turn will mean that we address exactly the questions which Capurro posed: what is real, and what does real mean? Capurro, and also Floridi (2014), remind us that this new, and fully digital, environment, brings new questions: practical, conceptual and ethical. There are as yet no definitive answers, but it seems likely that these philosophical arguments will have real practical value in dealing with these questions.

Conclusions

"Ghostly technology is dreaming us ... reality is vanishing" wrote Rafael Capurro some years ago (Capurro, 1999, p. 8). Dramatic, and even far-fetched, though this may sound, it may come to be seen as a realistic description of a new information age, characterised by immersive documents of an entirely new kind.

If so, the kind of rigorous and imaginative conceptual analysis which has been a characteristic of Capurro's scholarship will be of great value in helping LIS cope with this new environment, without, as Capurro reminds us, losing sight of who we are and where we came from. This stands, regardless of the ultimate place of hermeneutics and angeletics in the conceptual bases of LIS. If the LIS discipline is to retain its unique values and perspectives in the future, it will have to draw theoretical strength from the contributions of scholars like Capurro, while remaining open to those who, like Floridi, advise us from outside.

"Maybe" wrote Capurro (2009, p.137), "we are in the process of leaving the age of the book by going through the information age towards the age of messages and messengers." If so, his concept of information, and the information communication chain, expressed in message terms, may be his most lasting contribution.

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The “Naturalization” of the Philosophy of Rafael Capurro: Logic, Information and Ethics

Joseph E. Brenner

Abstract

The philosophy of Rafael Capurro is analyzed using the extension of logic to reality made by the Franco-Romanian thinker Stéphane Lupasco (Bucharest, 1900 – Paris, 1988). From this dynamic logical perspective, Capurro’s critical Heideggerian concepts of human existence can be naturalized, that is, brought into a non-reductionist relation to science. Lupasco’s ontological approach to nature and ethics supports the information theory and information ethics developed by Capurro. Both can be seen as part of the current convergence of science and philosophy which is directed toward a revitalization of the concepts of the commons and of the common good.

The last fifty years have been defined by the explosive development of the information and communication technologies and their current ubiquitous influence on our daily lives. In parallel, new fields of the nature, science, philosophy and ethics of information have emerged. However, there are enormous disparities in the attempted definition and characterization of the phenomenon of information, apart from its instantiation in electromagnetic, mechanical or chemical processes.

This paper will discuss the pioneering contribution of Rafael Capurro to these fields based on his unique philosophical perspective of the position of humankind in the world and historical analyses of ethics and information. For Capurro, the field of information ethics defines the essentially *social* nature of meaningful information. In his formulation of a digital ontology (2006), Capurro emphasizes that our ways of understanding ourselves and the world cannot be separated from the effects of the world on us but are radically grounded in them. He is in effect saying “Ontology is not a discipline distinct from ethics; it *is* ethics in its original sense” (Capurro, 2006, *On Digital Ontology*, paragraph 4). In today’s world, ethics and information ethics cannot be considered independently of one another.

In 1986, at the same time as Capurro’s publication of some major papers (Capurro, 1986b), the Franco-Romanian thinker Stéphane Lupasco (Bucharest, 1900 – Paris, 1988) applied his non-standard logical system to ethics in a last book, *Man and his Three Ethics*

(*L'homme et ses trois éthiques*) (Lupasco, 1986). This system, which I have up-dated and made available in English as Logic in Reality (LIR), (Brenner, 2008) is an extension of logic to real phenomena, grounded in physics, and enables inferences about the evolution of real processes at higher biological, cognitive and social levels of reality. Lupasco's "three ethics" are related respectively to the coexistent macrophysical, biological and cognitive processes in human beings. I propose here that the impact on science and philosophy of Capurro's work can be increased by comparison with that of the comparatively little known Lupasco.

In this perspective, Capurro's critical Heideggerian concepts of human existence can be naturalized, that is, brought into a non-reductionist relation to science. Lupasco's ontological approach to nature and ethics then supports the information theory and information ethics developed by Capurro.

1 Naturalization: Strategy and Method

Why is a naturalization of the philosophical work of Rafael Capurro desirable and feasible? The domain of naturalization is, for the time being, that of the philosophy of science, and there are several important examples of this approach. I recall that its simplest definition is that of a "bringing-into-science" from a domain, philosophy, that can be defined as a set of disciplines—logic, ontology, metaphysics, epistemology—and their use *via* reasoning and analysis to arrive at a viewpoint about what it is for human beings to be alive and think. Science is to be understood here as some reasonable degree of order and rigor in the presentation and interpretation of philosophical concepts. A well-known example is the naturalization of epistemology of Quine (1969), but his discussion seems to me limited to linguistic logical elements. Another recent example that has not yet, in my opinion, been sufficiently exploited is the naturalization of metaphysics by Ladyman and Ross (2007). I also note the application by Petitot-Cocorda (1992) of his catastrophe theory to the naturalization of phenomenology, as well as a major compendium on the subject (Petitot, Varela, Pachoud & Roy, 1999) (The "naturalization of phenomenology" might be considered an oxymoron to the extent that phenomenology was designed by Husserl to exclude physical reality. Here and in the remainder of this paper, "reality" will be taken to be the world independent of our thought processes [which nevertheless, it is acknowledged, is a part of it and without which it would not have meaning]. I follow here the weak objectivity of D'Espagnat [1979]).

The precursor to naturalization as a process (Feldman, 2012) was "scientization," defined as the incursion of empirical science into areas of knowing previously the purview of theology and philosophy. An example of this is the attempted naturalization of intentionality (Jacob, 2014), which has been only partially successful. If one looks explicitly for precedents of the naturalization of philosophy *tout court*, one finds that the term is generally used to describe a kind of grafting of philosophy onto science studies. This conceptual dead end suggests that the entire domain requires reconceptualization.

The starting point of this essay is that philosophers have something important to say about the reality of our world as well as about appropriate moral rules for living in it. It has been possible to challenge that importance from the standpoint of standard science and the classical binary logic that supports it. My strategy is thus to apply tools that address the weakest point in philosophy, namely, its capability of describing *complex, changing* real phenomena. The best tool I have found is the non-standard, non-truth-functional extension of logic developed in the last century by Stéphane Lupasco. An overview of the Lupasco theory is thus essential.

2 **Stephane Lupasco and the Dynamic Logic of Reality**

2.1 **The Logic of Lupasco and Logic in Reality (LIR)**

Standard logics based on a standard propositional calculus have little to do with ethics and morality. Even deontic logics of obligation are about the propositional actions of agents, generally in game-like situations involving bivalent logics. These are consistent logics of winning and losing, basically, of selfishness, while ethics is about inconsistent real behavior, compromise and altruism, which may mean losing. Does this imply that there is no other sense in which ethical relationships and behavior are logical, hence scientific?

The major contribution of the Franco-Romanian thinker Stéphane Lupasco was to propose an extension of logic to thinking and reasoning as real physical phenomena beyond their strictly linguistic properties (Lupasco, 1951/1987). Logic in Reality (LIR) refers to my up-date and extension of this logic. It implies both (1) that the principle of change according to which reality operates is a logic embedded in it, *the* logic in reality, and (2) that what logic really is or should be involves this same real physical-metaphysical, but also logical, principle. This logic is further summarized in Brenner (2010) and other articles. Briefly, its fundamental postulate—the Principle of Dynamic Opposition—is that (1) every real complex process is accompanied, logically and functionally, by its opposite or contradiction, but only in the sense that when one element is (predominantly) present or actualized, the other is (predominantly) absent or potentialized, alternately and reciprocally, without either ever going to zero; and (2) the emergence of new entities at a higher level of reality or complexity can take place at the point of equilibrium or maximum interaction between the two. Lupasco expressed this postulate in a “calculus” in which the “logical” operations of inference, conjunction and disjunction (etc.), are viewed as real energetic processes.

LIR should be seen as a process-ontological view of reality, applying to theories, to trends and tendencies, rather than to “objects” or the steps in a state-transition picture of change. LIR does not replace classical binary or multi-valued logics, but reduces them for simple systems and situations. The critical categorical feature of the LIR process ontology is the non-separability of opposing phenomena, for example, two theories or elements of phenomena, syntax and semantics, types and tokens.

LIR differs in its treatment of the subject-object duality from all of the vast discussion of this topic, including that of standard phenomenology, and can be characterized as a non-naïve dualistic realism. The LIR view, critical for the discussion of free will and the origin of moral responsibility, is that the world is ontologically deterministic and epistemologically indeterministic, in the contradictory relation suggested above.

2.2 The Logic and Ontology of C. S. Peirce

The foundation of the Lupasco system in modern physics brought his conceptions of the fundamental structure of both the world and language into direct conflict with those of the still influential C. S. Peirce, or any system in which discontinuity is not just as fundamental as continuity. The complex ontological commitment of Lupasco provides additional tools for inference that the self-imposed limitations by Peirce of his theory to linguistic entities prohibit. In contrast to Lupasco, Peirce explicitly excluded any ontological commitments, and his system, although extremely complex, ultimately reduces to sets of classifications (Brenner, 2011).

Peirce and Lupasco (and this writer) agree on the impossibility of the “absolute completeness of logical analysis...Carry it as far as you please, and something will always remain unanalyzed” (Peirce, 1902, R 1454, cited in Bellucci, 2013, pp. 178). Lupasco, far from accepting this situation as a fatality, saw it as an important expression of the basic antagonistic or contradictory nature of reality, in which incompleteness, as in the work of Goedel and uncertainty, as in Heisenberg, are as important as their positive counterparts. Absolutes, and the abstract limits of truth-functionality of standard logic, on which Peirce’s own logical system also depends, have no role to play.

2.3 Man and His Three Ethics

In the conception of Lupasco (1986), the three types of ethics in the individual human psyche are dependent on the relative predominance of three kinds of substance—inorganic, biological and neuropsychical—in association with a predominant movement toward identity (homogeneity) or diversity (heterogeneity). Each ‘substance’ in this hierarchy of levels of reality is itself constituted physically by the one or two prior levels. To the extent that each level instantiates the above logical Principle of Dynamic Opposition by following not identical but isomorphic laws, there is a corresponding set of principles that is the logical expression of those laws in reality and govern man’s ethical behavior (morality). Clearly, any absolute theoretical separation between the three Lupasco ethics and the more familiar ones is impossible. They are different perspectives on the same real states-of-affairs, and I contend that they inform and illuminate one another.

The consequences of the corresponding cognitive processes are seen in patterns of behavior and ethical and political orientation:

- Macrophysical (Inorganic) ethics: The major impact of this form of ethics is due to its homogenizing influence, in the educational system and in the so-called Ideology of the Left, based on the dialectics of Hegel and Marx. Hegel refers to contradiction, as does Lupasco, but it is as part of classical binary logic.
- Biological ethics: Lupasco saw an excess of "biological ethics" as leading to a drive to over-diversify one's existence at the expense of others, leading to uncontrolled capitalism and individualism.
- Neuropsychical (Cognitive) ethics: Lupasco saw cognitive processes as largely emergent from the opposition of the previous two, primarily in the interior of the individual, and involving additional levels of reflexive self-reference, to which he ascribed a function of "control." This is what today would be referred to as downward causation. A normal psyche, for Lupasco, is one that is close to the center of this opposition, from which all complex mental process structures emerge, for example, the imagination. These states are also subject to pathologies of which schizophrenia and bipolar disorder are the major examples.

Lupasco pleaded for inclusion of all three types of dynamics in ethics to avoid reduction of human behavior solely to physical laws and biological processes. Freud, in contrast, conceived of conscious and unconscious structures but failed to relate them to their energetic substrates operating at the level of afferent and efferent systems. Lupasco further related the three ethics to a parallel concept of three types of causality, all dependent on and following the logical principle of antagonism or opposition which will not be discussed further here. I will simply note Lupasco's comment: "Man's thinking must be occupied with these three ethics; he must be conscious of them and use them throughout his existence and the accomplishment of his destiny" (Lupasco, 1986, p. 53). In Peirce's classification of phenomena in terms of "Firstness," "Secondness" and "Thirdness," there is no physical justification for either the difference between the epistemological domains or their arbitrary overlaps ("Firstness in Thirdness," etc.). There is only a formal similarity with Lupasco in that three domains are identified in both doctrines.

In summary, the Lupasco system, in contrast to linguistic bi-valent or multi-valent, modal and doxastic logics is thus not topic neutral. The same logical principles which apply to physical changes apply to the foundation and expression of human values. Human values mean values, hence information, shared with other human beings in the sense of the German *mit-anderen-geteilte Welt* (Capurro 2000a, *Informationshermeneutik*, paragraph 12). Information is a meta-concept that defines both the environment and the individual, which cannot be separated from it, and LIR supports this ontological turn in hermeneutics. For me, as for Heidegger, hermeneutics is ontological. LIR is about the most fundamental properties of man's *becoming* in the world. For Heidegger, hermeneutics is about the most fundamental conditions of man's *being* in the world, but being is becoming. LIR provides way of seeing that being and becoming are both the same and different (two terms) at the same time. Ethics emerges when more than one conscious entity stands in an operative (dialectic) relation to another, and information defines the non-separable physical inter-

active relation between them. One application of the Lupasco system to ethics, which he did not make explicitly in the cognitive domain, but which I believe is pertinent to this discussion, is the interactive relation between self and other.

2.4 Self and Other

The origin and dualistic character of individual and collective moral responsibility to other human beings and the world begins with the awareness that we are individual entities, apparently separate from but also dependent on the world and others. Logic in Reality postulates that the differentiation, which is not and does not need to be total, ultimately has the same dynamic origin in the oppositions in the physical and the biological substrates of which we are composed. The corollary is that resistance to and refusal of the other (seeing him or her as totally external) is also part of the human genetic endowment. No purely neural network theory of morality on the one hand nor transcendental conception on the other can completely override this basis of behavior, although childhood environment can obviously change the degree to which ethical or non-ethical, social or anti-social behavior is expressed.

E. O. Wilson's model of social evolution (Wilson & Wilson, 2007) based on insect, animal and human data accounts for most of the dynamics of individual and group selection. It describes the origin and relative evolutionary success of altruism or groups in which altruistic individuals predominate. His theory clearly acknowledges the dialectic character of the situation in his dictum: "Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary" (p. 335).

LIR offers a basis for a culturally independent individual and collective moral responsibility that does not require that human intentionality or agency be "free" in some absolute sense. My view is that free will exists, but only as an appearance in the conscious mind of an individual in opposition to and because of one's predominantly unconscious knowledge of one's lack of total "freedom," that is, isolation from other individuals. The issue of compatibility (compatibilism) with a deterministic universe is therefore a false problem (Kane, 1998); individual responsibility for one's actions does exist, but its source does not lie in free will, or the absence of it. There is a reciprocal mutual instantiation of appearance and reality that corresponds to the contradictory, LIR interpretation: appearance and reality can never both be fully actualized at the same time. The idea of a completely free agent is a (particularly strong) intuition that is not unrelated to ultra-conservative libertarian ideology.

In the LIR epistemology, there is the same form of energetic interaction between knower and known; each shares some of the aspects of the other. Lupasco, from a very different background and culture, came independently to the same conclusion as Heidegger, to which Capurro calls attention (2000b). We as knowers are not totally external to what is known by us and not completely different from it. I must know, then, that if there are other knowers, as there are, they must be part of my known and vice versa. The source of human dignity *is* in ourselves as knowers, but if we avoid the error of solipsism, the origin of the

sense of moral responsibility can only come from the relation to other knowers, in other words, all human beings, and by extension, other beings and perhaps even, as suggested by Magnani (2007), certain non-living entities.

A contrario, one cannot find responsibility in oneself as an isolated agent. Since we are both “not-other” and “other” at the same time, a self-interest argument for morality holds. Two or more human individuals and their relations constitute interactive systems in the LIR categorical sense of non-separable subjects and objects, sharing in part one another’s characteristics. An individual is no more isolated logically, psychologically or morally than he or she is economically. In this picture, it is thus because our will is not free that we must try to ensure the viability of the environment. With this background, let us look in more detail at the work of Capurro himself.

3 Positioning Capurro as a Philosopher

Capurro’s approach to philosophy is something like that of the oracle at Delphi: *she* neither affirms nor denies, but suggests. One might say she produces a “weak message” (*schwache Botschaft*) (Capurro, 2002). Capurro’s work is not a thesis or argument but suggests better ways to think and live. It constitutes an ethics and that constitution is an act of morality as I will discuss in further detail below.

In his paper, *Toward a Comparative Theory of Agents* (2012, p. 487), Capurro states:

Our bodily existence as embodiment in a common world together with natural and artificial beings is, in itself, a weaker but maybe today more plausible foundation for an ethics of care and for respect towards human and non-human agents than of the foundations of Aristotelian and Kantian metaphysics.

This stance is in opposition to the position of Peirce that places mind at the top of his ontology. Embodiment in Capurro implies the form of dynamic relation between two entities that, as an expression of the underlying dualism of the world, is also the basis of their evolution.

Rather than using the concept of “blurring” between noumenal and natural, or even between two forms of metaphysics of substance and subject, Lupasco sought to identify the interactions between them, and found a functional interdependence that does not require that the identity of either term be totally lost. It is a “naturalization” of ambivalence, for example that of Kang to which Capurro refers “when she oscillates between body and embodiment” (2012, p. 487). I also recall here the work of Lakoff and Johnson (1999) to which LIR brings, also, a physical dimension.

3.1 Postmodernism, Post-Postmodernism and Science

Capurro defined himself as a philosopher in the *Angeletics* compendium (Capurro et al., 2011a; Capurro & Nakada, 2011). In calling himself hermeneutic and not postmodern, he not only rejects the eclectic but also anti-scientific Western thought of the late 20th century but also many other presuppositions of standard modern philosophy. As Capurro puts it, hermeneutic thinking opens the possibility of a dialogue with tradition or, better, with traditions and orders of values beyond the wrong opposition between eclecticism and fundamentalism. Capurro goes on to apply this approach as a basis for his *Angeletics*—or message theory (the analysis of the conditions of message announcement and transmission); following Gadamer he states, “Hermeneutic brings a dialogical and dynamic perspective into the world of static texts” (Capurro, 2011a, p. 150).

3.2 Speculative Realism: “Ends”

The new trend in philosophy called Speculative Realism by Tom Sparrow (2014) and others makes a necessary critique of certain idealistic aspects of “modern” phenomenology. Sparrow talks about the “end” of phenomenology, stating in essence that phenomenology does not establish the connection to reality necessary to ground science. His Speculative Realism attempts to solve the problem by replacing subject-object correlationism by a form of reasoning that emphasizes the correlation between thinking and being. Speculative Realism avoids positioning phenomenology “underneath the natural sciences” as they are naïvely understood in order to safeguard the philosophical primacy of the former.

Speculative Realism possesses its own set of weaknesses, which can be ascribed in a general way to its retention of concepts embodying classical binary, truth-functional logic. These include an ontology of “things” rather than processes as the furniture of the world, a logic of non-contradiction and a ground of existence that has reason and value. The possibility of a ground of existence that includes incoherence and contradiction is excluded. This doctrine, further, which predicts the end of phenomenology as a “science,” is also revealed as profoundly anti-scientific, involving a return to outmoded physical concepts of consciousness. From my point of view, the argument is trivial. Phenomenology should never, *pace* Husserl, have been conceived of as being a science in the first place.

If philosophy, as opposed to phenomenology, wishes to gain our confidence with its allegedly realist objectives, while retaining some transcendental aspects as essential to its existence as a domain of knowledge, many concessions to well-known satisfactory aspects of the scientific paradigm may have to be made. The basic concept of this paper is that such a philosophical stance¹ is augmented by inclusion of the logic of Lupasco outlined above. One of the consequences of my interpretation it that it becomes otiose to talk about

1 In Section 4, I suggest that Capurro’s term of “casting” may be more appropriate as being less static.

the “end” of phenomenology, like Sparrow, or even of the end of philosophy, as Heidegger famously did. If there is an “end” to something, it is the splendid isolation of philosophy from science that amounts to a simplistic idealistic position. Philosophy retains its specificity as a discipline within a transdisciplinary framework of which science and LIR are a part. Its categorical feature of non-separability denies the traditional philosophical division between theory and practice and looks for ways in which they overlap and inform one another. This process, and the mental movements it entails, are similar to those which take place when a logic—LIR—is seen to be part of knowledge as a whole, including science, in what I have called the “logical rejunction” of logic with knowledge initiated by Lupasco (Brenner, 2010a).

3.3 The Capurro Realism

Capurro emphasizes Heidegger’s postulation of the temporal and conceptual primacy of hermeneutic or pragmatic understanding over theoretical interpretation. In this “pragmatic turn,” choice rests upon a pragmatic pre-understanding of our existential needs. Understanding means originally this very fact of being able to answer to possibilities or, as Capurro suggests, to the messages necessary, simply, to stay alive and to construct our lives. In a second, later stage, one is capable of making an explicit (linguistic) interpretation of such a pragmatic understanding.

In the complex state of pre-understanding, like children, we are conscious, perhaps more clearly than we are later in our adult lives, of a dialectical relation to the universe that is potentialized. In this problematic situation, anything that helps maintain the interactive relation both intra- and inter-levels of reality and complexity is to be welcomed. For example, if we accept the concept of a message as a second-order category, Capurro thinks we may be able to avoid reductionism and to look for the complexity of the message phenomenon. It is the role of LIR to assist in such active dialectical development of understanding, that is, from non-understanding and the hierarchical interaction between information and message (see Section 5).

Lupasco did not use the term hermeneutics but coined a neologism—“dialecticomethodology”—for his dialectical methodology; he meant by this looking for, in any process in progress, the real elements in interactive opposition or contradiction and using their degrees of actuality or potentiality to make inferences about the direction of the evolution of the process.

3.4 The Hermeneutic Circle: Figure and Ground

In the Heidegger-Gadamer tradition, the hermeneutic circle is defined as the reciprocity or reciprocal relation between text and context. This is for me a special case of the broader relation between figure and ground, a well-known concept of Gestalt psychology. For Lupasco, phenomenological shifts in perception are real, physical and dynamic processes.

The figure/background reversals discussed by Deacon (2012) in his new dynamics of the emergence of mind from matter pay attention to what is *not* present or predominant in a phenomenon. These different aspects of the absence-presence duality are critical to his accounts of organization and the ascent from matter to mind. LIR calls attention, in this connection, to the importance of seeing the movement from absence to presence as an equally essential aspect of the dynamics of change. Logic in Reality explicates the alternating emphasis on one or the other aspect of the phenomenon and the mental change that accompanies it. Another example of the same dynamic processual view is the duality between appearance and reality referred to above.

3.5 Science

Capurro and his associates have sought to formulate the essential insights of, especially, Heidegger in a way that makes possible other forms of inquiry in which “progress in philosophy” becomes as important as progress in science. They avoid the hubris of a purely scientific *Weltanschauung* that claims that progress may only be made through and with science independently of thought about science. In such a doctrine, relation to ethics is always natural and present. It “is” ethics, a doctrine whose implementation as a moral program in the social arena might be facilitated if its compatibility with science were more visible.

The standard anti-realist view is that science cannot put us into direct contact with reality due to our physical limitations and consequently cannot be validated. In contrast, Heidegger’s view of science as developed by Capurro is that science is a valid method of inquiry, provided it is not allowed to contaminate our thinking with its Promethean programs. Until now, these concepts have been part of phenomenology which, as discussed in 3.2 above, still contains references to a subject-object duality (correlationism) which is *prima facie* unable to establish a satisfactory relation to things in themselves.

In discussing Heidegger’s concept of science, in particular modern science, Capurro assigns its ontological ground as human being-in-the-world rather than a transcendental constitution in subjectivity (Capurro, 1992). I claim simply that Lupasco, carefully considered at this level, makes the question moot. When “subjectivity” is part of a dialectical ontological ground of subjectivity and objectivity, as it is in the Lupasco and LIR systems, there is no relation of exclusion required, for any physical reality. LIR supports Capurro’s concept of weak or open constructivism against the Maturana and Varela concept of *autopoiesis* of which the paradigmatic diagram is the visual paradox of Escher of two hands drawing one another. Both visual and linguistic paradoxes are energetically inert, incapable of conveying new information once the fact of their existence is acknowledged. In fact, Varela accomplished a kind of *reductive* closure that restricts the number of conceptually accessible states. For Gerhard Luhn, working to increase this number should be the real, moral obligation of human existence, since it is that of the universe itself (Luhn, 2012, 2014).

Heidegger calls “world” the perspective that allows us to see things as contextualized tools. But the formula being-in-the-world characterizes the mode of being of human beings

in which we share a world and have a pragmatic objective view of things as tools. Heidegger does not negate or devalue the objective view but makes the key statement, for this comparison with Lupasco, that “being able to switch between the two modes makes manifest our capability of going beyond both, tools and objects” (Capurro, 2008a, *Interpreting the Digital Human*, paragraph 8).

In the epistemology of Lupasco, it is the switching of perspective that is the expression of the underlying dynamic antagonistic processes that result in one or the other mode being alternatively predominantly actualized and potentialized. Only minor emendations are required to bring the two approaches into concordance: 1) in the Lupasco logic, the two modes must coexist, with neither being totally absent at any time and 2) the capability of “going beyond” defines a concretely existent state of “having gone beyond” that can emerge from the contradictorial processes that preceded it.

Thus Heidegger’s tool analysis does not describe literally the phenomenon of modern technology but does something more important. It does not oppose either a theoretical or objective view of science but looks for its existential foundation and that such an existential foundation is consistent with the dualistic ontology of Lupasco.

3.6 Time

One task of philosophy is to help us disentangle ourselves from our being as a part of the universe, as a product of the evolution of the universe that is able to, a posteriori, make an abstraction from it and make something abstract out of it. The problem of our being is that it apparently necessarily follows a time strictly determined by our mortality. If, as Capurro suggests, following Heidegger, one should speak of being-AS-time then time cannot be separated from being. This conclusion is in agreement with the latest views of physics that the concept of an independent background space-time is false or incomplete.

Understanding Heidegger’s philosophical analysis is easier for us today since quantum mechanics “introduced” a non-reversible concept of time that implied necessarily our “contribution” as human subject. This belonging together of being and (human) time means that there is (was and will be) an independent reality, even if it is only we who speak about such a reality-without-us, otherwise, in Capurro’s terms, neither we nor it could speak at all.

As Capurro suggests, the openness of three-dimensional time is our part in the “constitution” of “reality,” time has no independent reality and it is not, as Kant postulated, a kind of inner-psychical a priori structure, it is just the way of human interplay. The problem arises when one wishes, like Heidegger, to position the concept of *Dasein* as a “play” involving taking care of oneself/others and the world within the context of the world. At this point, the world has lost both its groundlessness (read: physics) and senselessness, through our existence on these terms, and the origin of ethics begins to be apparent. I thus understand intellectually why the concept of “groundlessness” is attractive to some people, but argue that a principled ontological grounding, such as that of Lupasco, must also be taken into account.

In thinking about our being-situation recursively, in a next “iteration,” Capurro says that we have to deal with being exposed to the “totality of the world” without being able to grasp it as a totality but just “casting” it (see below, 4.4 Digital Casting) in different ways. He in fact suggests that the logical aspects (the physics) of reality, is what Lupasco probably meant by “logic,” that is when a human logos comes into play binding itself to and at the same time keeping a distance to other beings.² This way of interplay with the world is what, according to Heidegger, characterizes our human way of being in the play as different from other non-human entities, inorganic and animal.

Capurro shows that these (lesser-known) ideas in the later Heidegger are a complement to those in *Being and Time*. They look toward a wider view of *Dasein* to include physics and metaphysics and their operation in the uniquely human subjective cognitive phenomena such as boredom and the feelings of loneliness and finitude, questioning: What is the world? Most importantly, the relation of all this to human logos is an explicit one as is the way in which the whole *is* and “interplays” with us. By providing a method for seeing such feelings as real, logical processes, the approach to Lupasco gives a further “casting” of ourselves as physical beings characterized by predominantly continuous change.

4 Ethics and Information, Digital Ontology and the Philosophy of Information

4.1 Identity, Invariance and Information Theory

Lupasco’s Principle of Dynamic Opposition, applied to the mental structure of human beings, led him to its description as their having a conscious preference for certainty, consistency and non-contradiction—identity and identities versus their opposites. In 20th century science, this resulted in the very fruitful search for invariants in physics. However, phenomena that were characterized by change, diversity, inconsistency and contradiction were relegated to lower ontological status.

Applied to information, such approaches were expressed in a search for either a single, all-powerful “definition” of information or a milder Unified Theory of Information. The best formulation of this process in my opinion has been by Hofkirchner (2013), precisely because it does not exclude some of the contradictorial aspects of information in the broadest sense. The way in which Capurro has avoided the standard aporia of information is of direct relevance to his theory of ethics and information ethics.

2 Private communication (2014).

4.2 Capurro’s Approach to Information

The basic writings of Capurro are to be found in his introduction to the concept of information (*Einführung in den Informationsbegriff*) (Capurro, 2000) and in his discussion of the foundations of information science (1992). His overall orientation in these texts might be summarized as the avoidance of any reification of information. This is illustrated by his suggestion of information as a “shape,” to wit, the shape of knowledge at the end of modernity. The three key characteristics of this process, stated to be core discoveries of Husserl, are the abandonment of: a) the concept of rational, scientific thought as qualitatively superior to other forms of discourse; b) the idea of a simple opposition of human subjectivity and objectivity; c) the (Platonic) idea of the separation of the knower and the known. While Capurro, in this text, refers primarily to its instantiation in technology, it is a core point, as indicated above of the Lupasco theory of knowledge with which it is compatible.

In *Software Development and Reality Construction* (1992), Capurro makes a major necessary change of perspective by changing the question “What is information?” to “What is information for?” enabling information to now be understood also as information science. This implies a cognitive but also pragmatic or ontological turn. Capurro accomplishes this by introducing necessary hermeneutic concepts, in particular, that of information as a process of sharing a common world. While it is not possible to reproduce Capurro’s entire development of this idea, it is pertinent to mention briefly two further statements that are logical in the sense of the Lupasco logic:

- Information (knowledge shared positively) and misinformation (knowledge shared negatively) are interwoven dimensions of human existence, and information science is their science. In Lupasco and LIR, also, the negative dimension is assigned an appropriate dynamic ontological value, and the alternation of (predominant) actuality and (predominant) potentiality is the form, if I may, of their interwovenness.
- Information science, “conceived of as a sub-discipline of rhetoric, implies a double-bind methodology. It must accomplish a self-reflection in a formal-interpretative as well as in a cultural-historical way.” (Capurro, 1991, III. Information Science as a Hermeneutical-Rhetorical Discipline, paragraph 8). In place of the term “double-bind” which reflects its origin in the psychology of the Palo Alto school, I might suggest the Lupasco language of states of dynamic opposition that can exist between doctrines and theories, as they are being cognized, of course.

4.3 Ethics and Information Ethics

As an introduction to Capurro’s discussion of ethics per se, it is worth observing that part of Capurro’s philosophical doctrine is closely dependent on Kant. Kant expresses the appearance of the obvious difference between human beings and the rest of the world (“two separate worlds”) and the dualism between natural laws and the autonomy of human

freedom. Humans are autonomous and heteronymous beings at the same time, a phrase with a distinctly Lupascian flavor. As natural beings they are confronted with the fact of the moral law or the call of moral conscience coming from their “true selves.” Moral law comes from beyond the sensory nature, but it does not come from a god. It comes from the noumenal nature of humans. This “beyond” is “inside” our selves (“the moral law within me”). It is possible, using the approach of Lupasco outlined above, to emend this doctrine and reduce the unnecessary separation between humans and the world while retaining the consequences for morality of their joint, interactive existence.

In Capurro’s conception, ethics and information ethics emerged together from early processes of communication (message exchanges) between autonomous humans and their subsequent “problematization,” that is, conversion to a set of rules or norms. Information ethics today manifestly applies to the vast increase in the volume of digital messages. The ground of morality is thus not a transcendental metaphysical property but the fact itself of living in the world with other embodied human agents taking care of themselves and others. This “immanent stance” is that of Lupasco, despite the fact that he deviates from it himself in assigning non-logical, transcendental properties to affect.

As Capurro (2006) says, “Information ethics is therefore concerned not only with the question of an ethics in the ‘infosphere’ (Floridi, 2013) but basically with an ethics of the infosphere” (Towards a Foundation of Information Ethics, Paragraph 9). Without pushing the parallel too far, this position is similar to that of LIR, the two interpretations indicated in *Section 2* above. LIR has the spin-off benefit of clarifying the debate between Capurro and Floridi. Capurro feels that Floridi’s digital ontology is a metaphysics (Capurro, 2008b), which Floridi attempts to counter by saying that his ontology is one of structures (“the ultimate nature of reality is structural”). As I have discussed myself elsewhere (Brenner, 2010b), Floridi’s concept of structure in fact deserves Capurro’s critique of it as metaphysical since it embodies the concept of levels of abstraction which in fact are neither more (nor less) than epistemological stances.

For me, following Lupasco, structures are themselves always dynamic informational processes, involving (we can say today) all the contradictorial properties of information, expressed in their evolution. But I argue that it is impossible to totally separate Being (an ontological concept) from Being-of-beings (a metaphysical concept). The former is the basis for Capurro’s ontocentric information ethics and the latter of Floridi’s digital information ecology. The two perspectives complement and inform one another in thought and in debate, emphasis being alternately placed on the one (actualized) versus the other (potentialized).

4.4 Digital Ontology and Digital Casting

Digital ontology³ is an additional philosophical concept that gives (Capurro, 2006) a value to the existence of digital phenomena as such as “being”—rather than only a metaphysical

3 Luciano Floridi correctly criticizes the term digital ontology used in a narrow, computational sense (Floridi, 2009).

value of their “Being-of-being.” That digital ontology is today’s pervading “casting” of being is of more significance than that digital ontology pervades, also, as metaphysics, society as a whole including scientific methods and philosophical reflection.

Digital casting is one translation of Capurro’s difficult term (*digitaler Weltentwurf*) which he uses to describe our being in our current interactions with the world (Capurro, 2002). This term contains both active elements, casting in the sense of our designing, proposing, drafting and suggesting, but also passive elements—being cast. The digital casting of being concerns not only the fact that we deal with digital beings, but that we are able or unable not to understand reality from a digital perspective. *Weltentwurf* goes beyond an attitude or stance but is something to which we have a basic ethical relation. It is a surpassing of a modern or postmodern subjectivity, part of the “third globalization” of the entire sphere of human knowledge—or better—“knowledging” of reality.

Digital casting is about understanding being, and Capurro talks about *how* “we beings understand the casting in *its* being” (2002, 1. *Umriss des digitalen Weltentwurfs*, paragraph 7). There is a point here of extraordinary resonance with Lupasco. The form of the continuous digital availability is a virtuality, which is an actuality, a continuous presence which Capurro differentiates from the Aristotelian potentiality which refers to becoming. Lupasco showed that actuality and potentiality cannot and do not need to be separate, but are related dialectically. Heidegger’s concept that by asking the question of the nature of being, we can free ourselves, at least partially and occasionally, from our historical conditioning, through an internal dialectic relation receives a logical validation in Lupasco.

In a sense, as we evolve in our digital being-in-time and being-in-space, we are alternately near and far from the world, spatially “here and there at the same time.” LIR provides a framework in which this phrase can be understood and given the proper physical dimension. Thus to the “digital divide” which for Capurro signifies a split away from the physical, can be better applied the term of alternating relation, that is the predominant actualization or potentialization of the digital and non-digital categorial features of the experience, an *ethische Doppelbewegung*. From my perspective, then, existential world castings do follow logically, in this logic, the historical and also the (currently) physical evolution of our being.

Capurro recommends a process of disengagement from the strictly technical characteristics of electronic networking or interaction and its destabilizing effects on the individual. He speaks of a careful composure that enables one to behave in the digital world with a certain “art of living” from which “new traditions” can be developed. Critical components of such a sensible (*besonnen*) stance are the capacities for the appreciation of art and a sense of humor. These do not have to be mysterious; in LIR terms, they are high-level, emergent cognitive processes. The recognition and positive acceptance of the necessary incompleteness of our knowledge, rather than incompleteness *per se*, can become part of the basis of an ethical stance.

4.5 The Philosophy and Metaphilosophy of Information

The major contribution to the philosophy of information of Wu Kun over the last thirty years is just now beginning to emerge from behind the language barrier. In his *Basic Theory of the Philosophy of Information*, Wu Kun⁴ positions information as a critical component of all disciplines, beyond the formal content specific to them and hence as a metaphilosophy. At the heart of Wu's theory is a necessarily alternative worldview that emphasizes its relational and process aspects in the spirit of Lupasco's (*tout est relation*; everything is relation). We move from a quantitative, "technological" conception of information to what may fairly be called a transdisciplinary one.

In Wu's theory, the weaknesses of modern philosophy starting with Husserlian phenomenology become apparent. It is the existence of information, even more than, but in concordance with, Logic in Reality, which breaks the traditional absolute separation of subject and object. Although Husserl found a way of beginning to describe the reality of consciousness, his one-dimensional phenomenological reduction maintains, in another form, the disastrous (for human society) polarization of standard bivalent logics. From the standpoint of Wu, Husserl's bracketing is thus fundamentally flawed as a hermeneutic process.

In place of standard phenomenology, Wu proposes an informational ontology in which we as humans have (self-evidently) access to "things-in-themselves." He emphasizes that his philosophy of information and logic in reality are not phenomenology because phenomenology is the subjective intent of interpreting the structure of the world. We live, rather, by adhering to a route on which "the natural noumenon's own movement explains the world" (Wu & Brenner, 2013b, p. 2).

The most recent contribution of Wu has been in focusing on an impact of information on philosophy and science that leads to toward their convergence without conflation (Wu, 2013). This concept is closely related to Capurro's description and should be considered as another expression of the same overall paradigm.

5 Angeletics

5.1 The Move to Angeletics

Rafael Capurro and his colleagues have moved from a concept of information to one of messages and messaging to describe exchanges between, especially, human beings. The finality of this movement is a more perspicacious grounding of the philosophical and ethical implications of those exchanges. Capurro has defined Angeletics (or messaging theory—John Holgate's preferred term) as the study of messages and messaging and pro-

4 A summary of his views in English can be found in (Wu & Brenner, 2013).

posed that it can play a paradigmatic role in 21st century science and society. As Capurro stated in *Messages and Messengers: Angeletics as an Approach to the Phenomenology of Communication* (Capurro & Holgate, 2011), the objective of Angeletics is to further both a philosophical and a hermeneutical debate about this phenomenon. Angeletics offers a conceptual space for reflection in which the foundational relationships between messages, their senders, messengers and their receivers can be explored in a way that goes beyond the foundations of standard communications theory.

Is Angeletics a “science,” Capurro asks? Capurro distinguishes between an “angeletic philosophy” and “philosophic Angeletics,” where, “Once the phenomenon of announcing (messages and messengers) AS such is established and explained, normal science can start” (Brenner, 2012, p. 716). No particular metaphysical doctrine or model of the world is required other than that it should include both realist and anti-realist aspects, also in a dialectic interaction that is itself grounded in the non-separable objectivity and subjectivity of a non-separable physical and “psychic universe” (a Lupasco term).

Logic in Reality enhances the utility of Angeletics by offering alternatives to certain dichotomies and *distinguo*s it has retained. Angeletics for me is, in the narrower and wider senses of Capurro, both, “A science in its own right—an anthropology of messengers and messaging, and an epistemological or philosophical stance defining an attitude toward messages and information theory and science” (Brenner, 2012, p. 716). The two are in a dialectical relation that alternately emphasizes one or the other, without conflation or “fusion,” depending on the perspective chosen and in which interactive relations and overlaps are as important as the differences.

5.2 The Angeletic Spiral

Following the late Heidegger (Capurro, 2011a), Capurro suggests that the “hermeneutic circle” is in fact an *Angeletic circle* insofar as it concerns the relation between senders, messengers, messages and receivers. As seen from the “uncanny” perspective, being is sender and receiver insofar as a world is always a potential perspective for understanding. Heidegger (1975, p. 150) writes: “The messenger must already come from the message.” But he must also already have gone towards it. In the logic of energy of Lupasco, this is a logically as well as philosophically acceptable statement.

I have mentioned above the hermeneutical circle from the LIR process standpoint that challenges and ultimately rejects the notions of circularity. I have suggested replacing it, for all real systems and systems theory, such as that of von Foerster, with a notion of spirality to recognize the fact that no real dynamic process returns to exactly the point from which it originated, and its elements are not totally independent of one another. I extend this notion to Angeletics. Heidegger’s statement is thus to be understood as reflecting the dynamic non-separability not only of messenger and message, but of an interaction that at any point in time is, literally, “both coming and going at the same time,” one direction being more actualized than the other and vice versa.

6 Conclusion

The knowledge of how human beings should behave ethically to one another, together with the fact that they do not, is as old as the species; this knowledge is obviously both necessary and insufficient. For progress (or perhaps even just not to totally regress), it must be, practically, reinterpreted with each major change in society. Rafael Capurro's work provides such a grounded reinterpretation for the current "Digital Age," in which a digital ontology is the paradigm in which the mass of humanity uncritically lives.

I have nevertheless presented a picture of Capurro as a philosopher of transition, of transition to a form of knowledge whose outlines to me are neither clear nor determined. This paper suggests, however, that a further process is necessary but also feasible—what Pedro Marijuan calls, in another connection the recombination of knowledge (Marijuan, 2013). In this case, the recombination suggested is of information ethics with science, following the logic and principle of dynamic opposition of Stéphane Lupasco. A final comparison with Capurro is possible here:

- Capurro: science is a kind of ethics as it is a kind of relationship to the world, so that there is no opposition between two different things, ethics versus science. In this case science becomes ethicized and ethics fully accepts science as a philosophical "equal."
- Lupasco: ethics is a kind of science that is achieved.

I thus see the oeuvre of Capurro—his philosophy, ethics and information theory—naturalized by an association with science and the Lupasco logic or Logic in Reality. It is part of the convergence under the influence of information science and philosophy as proposed by Wu Kun (2013) and others. From this convergence and recombination, new tools for defining rights and duties in the information society may emerge which will permit a new basis for the development of an information commons (Hofkirchner, 2013).

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Turing's Cyberworld

Michael Eldred

Abstract

Through a lengthy e-mail conversation in 1999, Rafael Capurro and I undertook the maieutics of a hermeneutic approach to a digital phenomenon that we dubbed digital ontology. The present paper employs this ontology to deepen discussion of the idea of the Universal Turing Machine, which serves as the ontological blueprint for the basic unit of today's artificial cyberworld. Its way of working therefore also serves as a guide to investigating the spatiality and temporality of this artificial dimension to which humanity is today more than willingly exposed. In particular, an investigation of the Turing machine's linear, logically causal 'temporality' shows up a contrast with the three-dimensional, 'ecstatic' temporality of the world shared by human beings. Properly speaking, a Turing machine is a contraption for copulating bit-strings timelessly; hence a digital 'copulator.' Only by virtue of being nested in the existential world of human beings is the cyberworld in time.

(In)calculable Cyberworld

Alan Turing did not live to see it, but he is one of the immediate fore-casters, casting in advance today's artificial cyberworld. More distant fore-casters of this now global technical marvel include Galileo, Leibniz and Descartes, Aristotle, Plato and Pythagoras. The fascination with the possibility that the world could somehow, in its deepest ontological structure, be based on number has a distinctly Greek ancestry. Now we have managed to actually make an artificial world inhabited entirely by numbers that owe their existence to the laws of electromagnetism, a progeny of mathematical physics associated in particular with the name of James Clerk Maxwell. Electrical and electronics engineers have built a global electromagnetic network in which digital numbers, i.e. strings of binary digits, copulate and circulate.

Here, cyberworld is supposed to signify more than an artificial, engineered network known as the internet, namely, an artificial dimension in which, or through (*dia*) whose

medium, we human beings exist in an historically hitherto unknown way. A certain historical trajectory has attained its consummation with numbers themselves inhabiting their own artificial, physical realm, and we humans, mostly unknowingly, have intimate relations with them. Although numbers have always been written down and thus have achieved a physical presence in a matrix such as paper which could always be taken up again and read, the digital numbers circulating in the dimension of the cyberworld do not always patiently wait for us to read them as such, but unfold their effects independently of our immediate involvement. These effects are anything but merely numeric, like those of the abacus or the trusty pocket calculator. For an electrical engineer or a computer scientist, the cyberworld, comprising not just the internet, but the entire, global, more or less well-connected, patched network of digital devices of all kinds, including portables, wearables and implantables, is populated by strings of digital bits energized by electromagnetic fields and electric currents.

For the rest of us, however, these denizens of the cyberworld assume guises as little messages, entire books, photos, movies, games, etc., etc. They look quite homely and familiar because the computer scientists have worked hard to make them look and sound that way. We users of digital devices interfaced with the cyberworld need know nothing of what enables the familiar, recognizable, 'as-if' entities we encounter there everyday, such as news articles or interesting digitized broadcasts or a new song. Nevertheless, all these familiar entities have been dissolved into bit-strings that are kept energized in their own, special, artificial, electromagnetic matrix, whether it be, say, the hard disk in a server or a little electromagnetic stick or a small disk.

How did this digital dissolution of entities come about? By testing and coming up against the limits of logic in the sense of showing what can and cannot be computed by a stepwise mechanical procedure. This was Alan Turing's forte and unique contribution. Already 150 years earlier, Leibniz had dreamt of a "Machina Panepistemonica" (Leibniz, 2003) for a combinatorial calculus of justice. Turing was more modest, and negative. He demonstrated in his famous 1936 paper (Turing, 1936-1937), that there are formulae in functional calculus whose provability or non-provability cannot be decided by a machine working stepwise through an algorithm.

On the positive side, however, Turing constructed in mathematical detail his Universal Turing Machine that serves as the blueprint for programmable computers of all kinds that is still used in today's computer science theory. The Universal Turing Machine casts (ontologically) the *being* of a computer, not merely a design for making one. Any particular Turing machine computes, binary digit for binary digit i.e. a finite binary number (bit-string) input into it literally bit by bit on the basis of a finite set of instructions (the program code) that, depending on which bit is being scanned at the current step, instructs the machine what to calculate (i.e. change the bit or leave it as it is), whether to move one space to the right or left (or stay where it is) on its linear memory-tape, and which instruction comes next. The set of instructions (also called a routine or algorithm or executable code) itself can also be coded in bit-strings and input into the machine at the start, resulting thus in the Universal Turing Machine which is capable of computing any number at all that can

be computed.¹ The finite set of instructions uniquely defines a particular Turing machine, and this set of instructions can be coded into a unique natural number. It turns out that this relatively crude and simple bit-crunching machine can calculate any calculable number at all; more sophisticated machines with more complex movements and parts, but still working algorithmically, cannot do any better than a Turing machine, although they may be more efficient in terms of the number of algorithmic steps required to reach a result.

The Universal Turing Machine is a copulating machine that has one bit-string, the program code, copulate with another bit-string, the digital data-input, to generate a further bit-string as output. I call it therefore simply a (Turing) *copulator*. In general, the program code is the 'male,' active, executable code, whereas the digital data-input is the 'female,' passive bit-string that suffers itself to be computed to generate a resultant, 'offspring' bit-string. But the data-input and data-output can contain also sections of executable code such as macros or computer viruses, trojans and worms. The cyberworld is driven by myriads of Turing copulators, each equipped with its own program code and ready to compute digital data input into it, thus generating yet more bit-string output that circulates in the digital electromagnetic matrix. Hence the cyberworld is a materialized concatenation of virtually innumerable Turing copulators. The engineering problem for the cyberworld is how to build networks that enable the efficient, error-free computing copulation of bit-strings with each other and their efficient, error-free transmission through the cybermatrix to their next destination. To solve this problem, electrical and electronic engineering relies on the physical sciences that provide the basic laws of motion of electrons (electricity) in a constructed, controlled electromagnetic medium (electronics) that serves as the matrix for bits to be 'implanted' or embedded. Shannon's theory of 'communication' (Shannon, 1948) is concerned primarily with the error-free transmission of an encoded digital (and, secondarily, analogue²) 'message' without regard to its message-content, and is thus aimed at a mathematical solution to an engineering problem.

However, bit-strings *signify* something. The Turing copulator is not merely a toy for copulating bit-strings with each other to procreate new bit-strings, and the cyberworld is not merely the plaything for engineers through which to transform arbitrary bit-strings. The cyberworld is itself embedded not just in the larger physical world, but also in a

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- 1 For a lucid presentation of the Universal Turing Machine in terms of pure bit-strings, cf. (Penrose, 1999).
 - 2 Shannon proceeded first by assuming a transmitting source discretely generating a finite number of symbols that first had to be encoded by a transducer to produce a signal to be transmitted electromagnetically through the channel that, once received, first had to be decoded back into a legible symbol. Discreteness is the appropriate place to start for considering the transmission of a message in an articulated, finite logos of some kind since the finite logos has an affinity in essence with calculability. The theory of discrete, finite message generation and transmission was then extended to consider noise interfering with the transmission of the encoded signal, thus giving rise to errors for which the transmission procedure had to make allowances. Finally, the theory was extended to cover continuously generated messages such as (radio) voice or (TV) moving image by the usual approximation and limiting procedures familiar from differential and integral calculus. Cf. (Shannon, 1948) and (Eldred, 2009/2011) 6.2 for more detail.

meaningful human world that is both spatial and temporal. Hence the cyberworld has its interfaces with the physical world, which, in turn, is an aspect of the human world. The interfaces themselves are both physical and computable.

An example of an interface between the digital and the physical is a thermostat that controls the operating temperature of a boiler or furnace by allowing temperature data to be gathered and permeate through it. An example of a computable interface is the transformation of bit-strings into wave-frequencies for the colours of a screen for presenting the bit-strings to a human viewer in a human-legible form. Such a presentation is physically present to the human viewer's sense organs (the eyes in this case), and the problem of the interface between the cyberworld and the human user is conceived invariably as one of the physical presentation of meaningful information to the sense organs of a human viewer who, it is supposed, makes sense of this presentation. It is only a human observer who can see information *as* information. This *as* is the hermeneutic *As*, and human being itself is hermeneutic through and through; there is no such thing as a naked fact. Thus, for instance, a certain visual pattern on the screen is interpreted *as* a word in a certain language and understood (or not, i.e. understood *as* incomprehensible to that viewer), or it may be interpreted *as* an image of something. (It is not trivial that a human being can see something *as* something, and modern science invariably begs this question.)

The output-interface, ultimately with a human being who understands its world in a certain way, of course, is complemented by the input-interface and also by the human writing of executable bit-string code, which consists of impressing bits into the electromagnetic matrix. The input-interface may throughput physical data such as traffic-flow on a certain road or the light waves reflected from an object (photography), or it may digitize human writing of some kind signifying something or other. All these are regarded in information science as information, but it is advisable to make a distinction between brute physical signals and meaningful inscriptions or messages. The latter are a setting-down in some sort of writing what a human being understands about something or other, whereas the former, say, the capturing of temperature signals that are passed on, presupposes a human understanding that has been able to construct a device susceptible to ambient temperature at some location (perhaps on a spaceship in outer space) that transmits a precise physical signal to another device predesigned to 'interpret' the signal *as* a temperature of so-and-so many degrees, registered by a definite number. Such signals have always been predesigned by some human understanding (that of a physicist, an engineer, etc.) and so are always already interpreted in a certain way, that is, these signals are not nakedly physical, but always already filtered by (technical) human understanding.

Hence the physical transmission of signals within the cyberworld and through its interfaces with the surrounding physical world is, in one sense, purely physical and proceeds of itself, but, on the other hand, all these physical signals have been set up from the outset within a framework of (technical) human understanding to some purpose. Both input and output data, whether signal or message, are therefore always already interpreted and understood in some way. Hence any physical signal is always also implicitly a message because it has always already been understood *as* such-and-such. This hermeneutic *as* is taken for

granted unquestioningly by modern science that is *per se* blind³ to the phenomenon. For instance, a thermometer may receive energetic signals from the ambient environment, but these signals are such only within a technical-scientific world-interpretation, which we may label 'Cartesian,' that is historically relatively recent.

The same goes also for the executable bit-string code that is impressed somewhere in the cyberworld's matrix. Herein lies the astonishing achievement of Western arithmological thinking that has reached a sort of culmination with Turing's ingenious casting of his universal digital copulator. Although any tool or artefact made by humans is always an embodiment of a certain segment of human understanding of the world (e.g. the humble potato peeler is cleverly designed to fulfil its function), executable bit-string code is a set of 'materialized,' step-by-step instructions for carrying out a computation on input data, and hence an outsourcing of a segment of human logical understanding of a certain situation that is inscribed digitally in the physical matrix of the cyberworld. Human logical understanding is not only inscribed in a medium, but acts there on its own.

Instead of a human being himself going through a computation step by step according to an appropriate algorithm, the algorithm itself is encoded, embedded in the electromagnetic matrix, and is then able, if all goes well (i.e. there are no bugs in the code), to automatically copulate with any bit-string of input data that comes its way to generate its progeny, namely, a result which, in turn, may cybernetically effect a movement/change elsewhere. The computation itself is a movement or change in bit-strings (and be it only of a single bit), which is also a physical movement, because each output bit must be held in its 0 or 1 state by properties of the electromagnetic medium. The digital output has to be interpreted, or rather, is already pre-interpreted, by the device in which it is generated, either as a physical signal or as a meaningful sign. Thus the bit-strings are translated back into human understanding of something or other, a certain situation in a certain state, etc. *as such-and-such*. The physical signal received by a thermometer, for instance, may mean 'too hot' (say, for human comfort in a living room).

The change in bit-strings computed by executable code somewhere in the cyberworld is determined by the digitally encoded algorithm. This output may then be passed on as a signal to effect other changes, either within some other copulator in the cyberworld or through one of its interfaces with the surrounding physical world. The cyberworld and its effects on the enviroing physical world is thus set up, and works, in a causally deterministic way to bring about envisioned, precalculated changes, i.e. movements, of all kinds. This is the sense of the prefix 'cyber-' (from the Greek verb κυβερνᾶν 'to steer,' 'to govern') in 'cyberworld': it is an artificial dimension set up to control movement/change through algorithmic control over changes in bit-strings. Thanks to the global reach of the electromagnetic matrix, it is no exaggeration to say that in some sense humanity has (seemingly) achieved global technical-scientific cybernetic rule.

3 Modern science is *per se* (i.e. science *as* science) blind to such considerations, because it regards itself as being *beyond* metaphysics, that is, it is blind to its own metaphysical foundations, including its own hermeneutic cast. Instead, it naively regards itself as dealing with **naked** facts. But **all** so-called facts are clothed hermeneutically, to which modern science is oblivious.

From a different angle, Rafael Capurro expresses this as follows:

Artificial hermeneutics is not merely interpretative, but simultaneously constructive. It therefore resembles the Heideggerian hermeneutics of existence in the sense of a practical cast of life more than it does the methodological textual hermeneutics of the humanities. As hermeneutists and hermenauts we stand between tradition and information. We have to navigate through the networked labyrinth of the *information set-up* and shape it. This labyrinth full of cliffs and currents does not work only 'on our thoughts' (to cite Nietzsche), but also on our deeds. Through humanism, naturalism and technicism, we try in vain to tie down the centre of our existence. If we let ourselves in for the dimensions of withdrawal of the information set-up, then, in the coldness and profanity of the artificial, the labyrinthine nature of our desire becomes manifest, to transcend ourselves beyond nature technically instead of metaphysically. This subterranean, pullulating and chaotic dimension of the artificial which not infrequently wears the garb of the fascinating, offers endless material for technological myths. (Capurro, 1995. p. 76)

To speak of humanity achieving global technical-scientific cybernetic rule, however, as if it were some kind of 'we,' is already a self-conceit, because humanity is splintered into many, many human beings living on Earth. Many human beings, therefore, can bring executable code and digital data into circulation in the cyberworld whose movements can thwart and subvert each other. One computed bit-string output may be negated by another bit of executable code, for example, or a packet of executable code may be smuggled into a location in the cyberworld to take over control of or simply shut down an industrial plant; or digital messages posted on some public site in the cyberworld may be overwritten with a contrary message. In view of the *plurality* of human actors intervening in the cyberworld, control over bit-strings and their physical and message effects is continually being subverted by hacking, viruses, trojans, etc. This opens the prospect of cyber-warfare, especially because military and industrial installations (e.g. a national electricity grid) are themselves today controlled by executable code that may be infiltrated by foreign bits of program code. In this sense, the invention and construction of the cyberworld as a material realization of myriads of concatenated bit-string copulators have merely opened up a new, hitherto scarcely conceivable dimension for the entire gamut of all-too-human power struggles and rivalry (to which I shall return below).

What started out as a dream of total technical control of an artificial, calculable dimension and its physical interfaces thus degenerates into power struggles among many digital players seeking to control changes by means of executable code and message input ('digital propaganda'). This has everything to do with the splintering of mind⁴ into myriads of individual minds who can outsource their logical understanding of a segment of the world in order to bring about a desired change, such as the fraudulent diversion of somebody's online bank transfer to their own online account or the gathering of data on the online movements of its own citizens and foreigners by a state's intelligence service.

4 For more on this conception of mind (νοῦς) that goes back to Anaxagoras, cf. (Eldred, 2015c).

Spatiality of Turing's Cyberworld

There are two distinct spatial perspectives on the cyberworld, the engineer's perspective and the user's perspective. The engineer's perspective, from the outside, is on a physically-located global network consisting of servers, routers, cables, satellites, user devices, machines and installations with digital interfaces, etc. All these technical things are located somewhere in physical space, say, in Phoenix, Arizona, or Bangalore, India or in orbit around the Earth. *Cyberspace*, however, is the user's inside spatial perspective on the cyberworld through which the user 'sees' the cyberworld's denizens themselves, namely, the bit-strings. To 'see' inside the cyberworld requires a sensuous user-interface such as a (touch-) screen, keyboard, microphone, sound-card, etc. because users are sensuous beings who interact with the physical world in the present through sense organs. Hence the need for visual, tactile, audio interfaces through which bit-strings can show themselves *as* such-and-such, e.g. an image, a song, etc. Locations within the cyberworld are given by a bit-string address, say, an IP-address. These numeric addresses, which are ultimately just bit-strings, are, mathematically speaking, the vectors of a vector space. The user, however, usually sees only some kind of alphanumeric address, like a street name, on a screen. At that binary digital location, the user encounters a bit-string that, however, does not present itself simply *as* a bit-string of 0s and 1s, but as some sort of visual text or visual image or audio sound. This is because the bit-string has been translated electronically by clever executable code into a sensuous output for the user.

For the user navigating within the cyberspace of the cyberworld, the digital addresses provide orientation, since each address is a well-defined vector. The user can also go to any address simply by inputting the appropriate bit-string either directly or indirectly via some convenient interface such as a keyboard, a touch screen or a graphic pointing device (mouse). In this way, any cyberspace location can be easily brought into proximity, usually with a single click of the finger on a pointing device or a tap on a touch screen. These two characteristics, namely, orientation and nearing, characterize existential spatiality (Heidegger, 1979; Eldred, 2009/2011). There is no need for the user to move bodily through space from one physical location to another for there to be such a thing as cyberspace. A minimal movement of the finger suffices for the user to move through this digitized vector space, since even mathematical entities such as bit-string vectors retain an abstract kind of spatiality. Indeed, vectors are simply the arithmetization of directed geometrical intervals, and geometrical entities are attained by simple abstraction from physical bodies, retaining a certain spatiality, as Aristotle demonstrated in his *Physics*; cf. (Eldred, 2009/2011) §2.1.

Hence it can be seen that, despite the highly abstract, mathematical nature of bit-string copulators, whose multiple materialization and concatenation result today in the cyberworld populated by zillions of continually copulating bit-strings, for the user navigating and encountering these bit-strings, a kind of existential spatiality is retained. This experience of cyberspatiality can be enhanced for the user by means of well-designed, 'as-if,' graphic

interfaces that rely on geometric spatial intuition.⁵ Thus, images are displayed to users that make it easy for them to know where they are in the cyberworld. These images, however, are the sensuous translation of a long bit-string, which, as a dumb mathematical entity, has no 'idea' of where it is.

Temporality of Turing's Cyberworld

The issues get more exciting and challenging when considering the specific *temporality* of the cyberworld. This is so because today's science, and not just computer science, lacks an adequate conception of time. Indeed, a crucial issue is the ontological recasting of the conception of time, and not just those that apply with respect to the cyberworld (Eldred, 2009/2011, 2015a).

In early computers, the bit-string was displayed as an alphanumeric string that, of course, can always be resolved further into the underlying bit-string. There has always been a need for a sensuous translation of bit-strings back and forth because humans are incapable of reading digital code consisting of endless strings of 0s and 1s. A computer, by contrast, is only capable of 'reading' successively a string of bits; it 'sees' only the single bit currently before its 'eye' (electromagnetic scanning head) in the physical, sensuous present, but not *as* present, since it is not exposed to the time-clearing at all. All bit-strings that have been are either lost (deleted) or inscribed elsewhere at some bit-string address in the matrix, perhaps with some kind of time-stamp that a programmer, who *is* exposed to the time-clearing, has arranged to have stamped on the bit-string. The computer's scanning head may return to that location during its routine to reread a previously inscribed bit, not because it has a memory and can recall, but because it is instructed in the *present* to make certain mechanical moves that may end on an 'old' square of the Turing copulator's memory-tape, i.e. an already used storage address. It then 'reads,' i.e. physically detects, the bit written on that square in the present, for the scanning cannot distinguish between past and present; everything it reads is simply physically present, but not *as* present.

By contrast, a human being can recall past events and allow them to come to presence *as* past (a kind of absence that refuses presence, or an absence that is peculiarly present), whilst simultaneously remaining also in the present, so that both past and present are present, but in two different modes. Or a human being can reread what she or he or someone else wrote down in the past, understanding it *as* a message from the past that is kept distinct from the present. The past inscription is dated in some way, either with a proper date, or more loosely as 'back then when such-and-such was happening or after some other event.' That is, a human being can order past events and also past inscriptions within the temporal clearing, whereas the scanning head of a Turing copulator is oblivious to the temporal

5 The issue of the discrepancy or 'gap' between the (irrational, uncountable) continuity of physical space and the (rational, countable) discreteness of cyberspace will not be gone into here; cf. (Eldred, 2009, 2009/2011).

dimension altogether. Its scanning head only ever detects electronically a physically present datum. Only indirectly, via the machine instructions that a human programmer has programmed, does it come to redetect past inscriptions, but only in physical presence.⁶

More broadly, one can say that Turing copulators, and the cyberworld they constitute, are artificial, highly abstract, timeless mathematical entities. But the cyberworld is also a world for us who are in time. Our human being is, most primordially, exposure to the time-clearing in which beings presence and absence, i.e. occurrences occur, and our minds (Eldred, 2015c) are witness to this spectacle of presencing and absencing. Modern thinking (namely, science and analytic philosophy), however, doesn't get this; it overlooks the time-clearing and also inverts the relationship between mind and cyberworld: The mind itself is conceived, i.e. 'modelled,' as a kind of complicated data-processing computer in various variants of so-called computationalism. Turing himself wrote his 1936 paper as if the 'computer' he was speaking of were a human mind; he modelled human thinking itself on the logical computing machine whose ontological blueprint he lays out in detail. This is in line with the scientific prejudices of our age: 'to be' means 'to be there in physical presence, capable of providing and taking in sensuous data.' The Turing copulator's 'mind's eye' is its electromagnetic scanning head with which it dumbly detects the relevant bit presently to enter the algorithm. This corresponds to human consciousness that purportedly, at any instant, focuses on the internal representation generated by the brain for presentation to it in the present.

The temporal dimension of the past, for this modern 'computational' way of thinking, is memory which consists of physical data stored somewhere (the so-called 'limbic region'), somehow, in the brain, and which supposedly can be recalled to presence by the brain's neurological activity. So, too, does a Turing copulator have many bits of data stored on its tape-memory to which it can return for rereading, given the appropriate algorithmic instruction. For instance, it can be instructed to find the last bit-string identical with a bit-string just generated. It can do so only by comparing successively, in different instants of countable time, bits at different points on its tape. A Turing copulator computes its given task by generating its result, bit by bit, according to the stepwise instructions of the algorithm, its program. By convention, this result is generated successively to the right on the tape, which is initially blank. Everything the Turing copulator has already done is, by convention, written to the left of the scanning head at the end of each step, before it finds and then starts carrying out the next instruction, i.e. the computed result of printed 0s and 1s builds up successively to the right, with the scanning head printing them on the next available blank squares to the right and then copying the entire machine configuration once more at the end (Turing, 1936). Before seeking out and marking the next instruction-step in the algorithm, the machine's 'mind' is at the end of all the bits it has 'written,' so that they are behind it, with a blank tape in front of it. That is, its 'mind' is a blank until it assumes a 'state of mind,' namely, the next consecutive instruction, which causes it logically to make certain movements to compute and print the next bits of the result.

6 Cf. the machine instruction "cp" for comparing bits in Turing (1936).

Hence, the computing machine's 'state of mind' is the present instruction it has 'in mind' whilst 'looking at' the bit (0 or 1) it physically and presently has before its 'mind's eye' (the scanning head). Its 'past' lies behind it on the tape in the form of the bits it has so far printed, and its 'future' is an infinite string of blanks lying before it. The further steps in the algorithm will determine how this blank 'future' is filled with bits, as well as when and whether it will 'get stuck' in a circle and come to a halt. The Turing copulator therefore has a completely determined, blind 'future' that unfolds stepwise by carrying out the algorithm as laid down in the program code, which itself is nothing other than a bit-string. This completely determined 'future,' however, is at the same time incalculable in the sense that there is no way of calculably foreknowing in every case whether the Turing copulator will come to a halt or cleanly compute a definite result (cf. the so-called "halting problem" in connection with the Hilbertian *Entscheidungsproblem* [Penrose, 1999]).

From this it can be seen that, as is the case throughout modern scientific thinking, a conception of one-dimensional linear time is tacitly at work in the idea of the Turing machine, whether universal or particular, whilst a Turing copulator itself 'knows nothing' of time and is hence mindless. The 'future' is a blank since the machine's 'mind' (its scanning head) only ever has 'in mind' the bit it is presently scanning. Its 'mind' is stuck in the physical present. The machine's past is not 'in mind' but stored 'out of mind' somewhere back on the memory tape as bits that can be retrieved (or 'called back to mind' or 'reminded') by entering the appropriate 'state of mind,' i.e. by carrying out a machine instruction to move the scanning head to the left. The machine then moves back into its 'past' (the tape on the left) and physically detects the bit on a certain square in the present. As a machine, it is unable to 'call to mind' in presence whilst leaving what is called to mind (the relevant bit) in absence as refused presence.⁷ Which bit this is, 0 or 1, determines what it is to do next, depending upon the program code that sets out the instructions. It may leave the bit unchanged, or change it to its opposite, and then move either one step to the left or right. Every step of the algorithm, and every move in working through an algorithmic step, is completely determined by an effective logical causality.

An effective logical causality, in contradistinction to an effective physical causality, is an inferential chain of logical marks effected by following simply put logical instructions. Logical marks and instructions can and must be 'read.' In this case, the logical instructions are inscribed in the electromagnetic matrix, and it is a machine's scanning head that can (i.e. is predesigned to) detect pure difference, namely, the difference between 0 and 1, which, in turn, can be interpreted as a simple absence (blank) or simple presence, 'as if' the machine were reading. The tape's linearity is a consequence of the thoroughly deterministic logical causality that rules all the Turing copulator's movements. (This continues to hold true even when the strict, linear determinism is softened and split up by probabilities associated with the instructions that cause a branching of machine-actions into a finite number of parallel

7 On the refusal and withholding of presence by the temporal dimensions of past and future cf. (Heidegger, 1976).

computations.) Because with executable binary code, effective logico-inferential causality is outsourced to the electromagnetic matrix, it becomes effective physical causality.

Since the copulator computes its result by working through the algorithm step by step and printing it on the blank squares to the right, its movement is a movement into a linear, blank future into which the machine's mind has no foresight whatsoever. It is blind to its future, which comes toward it with total, logically causal necessity. A Turing copulator is therefore unfree, since freedom demands insight into the future and also that the present is a swivel-point for (degrees of) freedom of movement, i.e. that the present is truly a non-pre-determined beginning or point of origin (ἀρχή) for future movement/change that breaks with the past. Freedom demands a rupture in the chain of effective causality and several degrees of non-predetermined freedom for movement/change, so that the present is truly open to the future. Linear time is antithetical to any conception of freedom because it goes hand in hand with a totalization of effective causality, whether it be physical or logical. In materializing a Turing copulator, the logical causality is transformed into a physical causality. A Turing copulator has no power of imagination whatsoever. Imagination is a calling to mind in presence of what might be, whilst leaving what is called to mind in absence as withheld from presence.

As physical, any copulator is tied to the present, i.e. to its present state and what is presently in contact with it (the physical data it receives); it is unable to stretch itself into the two distinct kinds of absence, the past and future, and cope with the ambiguity of presence and absence 'simultaneously,' as a human mind can do and constantly does (even though modern science 'thinks nothing' of it). What might have been and what might be can present themselves to the human mind without relinquishing their absence. A Turing copulator, by contrast, is entirely unable to imagine its future but can only move step by computable step into its predesigned, blank-tape future by computing the successive steps of its algorithm. Likewise, it is able to refer back to its past by moving back along its 'memory'-tape, relinquishing however its presence, i.e. it can only shuttle back and forth because, as logical, it is unable to bear the ambiguity of both presence and absence.

A Turing copulator is conceived in line with the traditional metaphysical (Aristotelean) casting of time as a succession of now-instants proceeding linearly from the non-existent (not yet) future into the non-existent (no longer) past. Its logical 'mind' 'sees' only a physically present bit, and its algorithm instructs it to move from one square to another, reading successively the bits on the square and sometimes changing them. To do this, a Turing copulator, although itself oblivious to time, needs a duration of time and also the power to drive its movements. Computational time and energy are thus major issues when building a Turing copulator. Since encryption codes themselves can be cracked eventually by computation, computational time becomes a practical issue for cryptography; and the practicability of algorithms that compute in principle, but may take an inordinate amount of time (i.e. number of algorithmic steps), is the major issue in complexity theory (Penrose, 1999). With the rise of the cyberworld, the focus on the issue of the energy supply for technologically controlled physical movements shifts somewhat from that of transportation and electrical appliances, machines and installation, to the energy that needs to be generated to

power the bit-string-copulating movements of the cyberworld. A human mind, by contrast, doesn't require such high physical energy inputs for its cogitations.

The Cyberworld Nested within the World

What does all this have to do with the cyberworld as that artificial dimension of myriads of materialized, concatenated Turing copulators copulating zillions of bit-strings of program code with zillions of bit-strings of digital data? As an enormous concatenation of copulators, the cyberworld is both entirely calculable and also incalculable. It is calculable insofar as each Turing copulator simply dumbly carries out its programmed algorithm step by step in an entirely deterministic manner. After all, each Turing copulator is a calculating machine and it has been programmed and tested to achieve a certain useful result in human terms. On the other hand, however, and as mentioned above, the intermeshing of huge numbers of Turing copulators, each with its program code, leads inevitably to incalculable results insofar as i) the interaction between different copulators becomes hugely complicated and hence intransparent and unforeseeable, and ii) program code can be written by human beings and introduced into the cyberworld to throw a spanner in the works by subverting, undermining, countermanding the operation of other program code. This is, so to speak, the technical, computer scientist's view of the cyberworld in its inner operations.

The cyberworld, however, is itself nested within the world in which human beings exist. In its deepest ontological structure, this world is most primordially the time-clearing in which everything (and everyone) extended and physical takes its place; world only spaces itself within the time-clearing (Eldred, 2015c). To be human means to be 'timely,' i.e. stretched 'ecstatically' into the three temporal dimensions of past, present and future. Human being itself is existence, or ec-sistence, which means literally 'standing-out' in the world as embedded in its three-dimensional, temporally ec-static structure (Heidegger, 1979). Such three-dimensional ecstasy cannot be captured by any linear conception of time. In particular, ec-static human ec-sistence is able to bear the ambiguity of 'simultaneous' presence and absence, of which neither a logician nor a physical machine is capable. Hence human being itself is primordially illogical in the traditional sense of the logical 'law of excluded middle.' 'Simultaneity' gains an entirely new meaning in the context of three-dimensional time. A human mind comprises more, and sees more, than any physical machine, which is blindly tied to the physical present at the end of a chain of effective causality, as seen above with respect to the Turing copulator. The temporality of the cyberworld is therefore derivative of its being embedded in the world shared by human beings existing in the time-clearing. Human being and the 3D temporal clearing eventuate together, for they need each other. Therefore it can be said that 'minding' and 'timing' are the same, where each of these words now assumes a philosophical meaning differing from the conventional one.

Under the impact of the tremendous successes of the mathematized physical sciences since the seventeenth century, it has become an unquestioned, self-evident, purported 'fact' that only what is physically present truly 'is.' This is supposed to hold true for the human

mind as well. Hence, it is supposed that the human mind can be 'truly' involved only with what is presently before the mind's eye, that is, with what is physically present for it to sensuously take in through its sense organs. Otherwise, the human mind is supposed to be pre-occupied with what is 'inside its head,' i.e. with physically present re-presentations of what might have been or of what might be. One therefore distinguishes confidently and dogmatically between the outside world and inside the mind (Eldred, 2013). The internal representations in consciousness are supposed to be present somewhere in the mind, which in turn, somehow or other is identified with the physical brain with its 'infinitely' complex web of firing neurons. How could such a physical brain, an intricate hunk of meat, 'represent' the temporal dimensions of past and future, since everything physical is there simply in the present?

If entities are merely represented 'inside the head,' they supposedly don't 'really' exist at all, but do so only as 'subjective,' 'interior' figments which are purportedly at most 'useful illusions.' But perhaps it is the scientific way of thinking with its scientific method that is the illusion. We human beings have been suffering under this illusion of inside and outside for millennia, and it has only become worse with the rise of the modern physical sciences. For millennia it has been implicitly and, ultimately, dogmatically assumed that 'to be' means 'to be physically present,' thus truncating the sense of being to a stump of palpable presence. The other dimensions of time are supposed not to 'exist.'

For almost a century now, since the publication of Heidegger's *Being and Time* in 1927, there has been a philosophical alternative enabling a break with this unbudging blinkeredness. Instead there is only evasion of the question. An hegemonic way of thinking is fighting, with all its institutionalized power, to retain its supremacy by insisting on the unquestionableness of its fundamental 'scientific' prejudice with respect to the very meaning of being. Being, however, means time (Eldred, 2015).

With any luck, unseating an old, deep-seated prejudice and lifting the veil from an ancient illusion should allow us to see better how the cyberworld is embedded in the world inhabited by human beings. It is namely human beings who write the program code and provide the digital data that enter the cyberworld through some kind of predesigned interface. Even the collection of physical digital data is first set up by a human being installing the appropriate device, such as a thermometer or a pressure gauge, and connecting it through an interface with the cyberworld populated by a myriad of countless bit-strings. Human beings are concerned with and caught up in their own life-movements and hence are also concerned with the movements and changes of all that surrounds them in the world. All the events in the world, including newsworthy ones, are changes that may impinge on human lives, so human beings take notice of them. Or we human beings are concerned with productively controlling movements with a particular end in sight. Exposed to a world of change on both the micro- and macro-scales, we also make changes aimed at effectively controlling for the sake of specific envisaged ends, taking account of the given initial situation. Such cause-effect relations go hand in hand with the linear conception of time.

The cyberworld enters here firstly as a medium for sending and receiving intelligible messages of all kinds which may be in written, image or audio form. Any kind of message

can be encoded as a bit-string and submitted to the appropriate Turing copulator that will automatically send it on its way through the cyberworld, from one Turing copulator to the next, until it finally reaches its destination(s). Postal, telephone, newspaper, radio, television networks of the old kind can therefore easily be digitized by writing the appropriate program code for the appropriate Turing copulator and inserting it physically into the cyberworld, through the appropriate interface, onto a server where it does its intended work automatically. The cyberworld thus facilitates the communication of messages in ways that are novel re-imaginings of old problems fashioned upon older methods of communication, which are digitized. We are still adapting to this today.

These new ways also change all kinds of social and political *power struggles* (Eldred, 2008/2011) because the cyberworld enables, on an hitherto inconceivable scale and with hitherto inconceivable ease, multitudes of people to get their messages across to each other. In this way, centralized political control and centralized social control are subverted because all social and political power rests ultimately on its being recognized, and thus validated, by those subjecting themselves to it. Messages signifying non-submission to the powers-that-be contest that power at its core.

Secondly, however, the cyberworld serves as a medium for automatically effecting changes both within itself and, via interfaces, in the physical world. For instance, executable program code can be written to monitor and control via digitized signals the movements of some machine in the physical world, such as a satellite's orbit or an automobile's route or the impulse-rate of an artificial pacemaker inserted in a human chest.

Humans can write such digital code because they are able to *imagine* what might be, but is not present, and also undertake productive, effective steps to allow what is imagined to come to presence. They must therefore be capable of 'double vision' in the specific sense that they can see what is present and also what is absent and withheld from presence, i.e. they can bring to presence in the mind's eye what is absent, and thus envisage future movements and changes pertaining to their present existence in the world. Such double temporal vision is impossible for a machine because it is not exposed to the three-dimensional time-clearing.

The two above-mentioned different kinds of ways in which the cyberworld serves to get messages across, on the one hand, and to effect productive changes, on the other, also intermesh, working hand in glove, in the important sense that digitized productive techniques embodied in clever executable code serve also to disseminate messages and attract an audience to them. It seems at first that the cyberworld is a mightily useful tool for humanity to improve the lives of people on a global scale. However, since the first volume of Marx's *Kapital*, the thought of the inversion of human users of tools into mere appendages of a machine has become familiar, and such an inversion is today taking place when users become 'addicted' to their digital devices and 'controlled' by messages received out of the cyberworld. We have long since become entangled in the cyberworld's web, and this entanglement is continually deepening. Only few critical minds are reflecting upon how human beings' lives are becoming the appendages of bit-strings circulating through the cyberworld. It is already visible on the horizon that there is yet much to come that plays

out in this metamorphosis of the relationship between human and machine, machine and human.

The Cyberworld as Playground for Power Plays

I now switch focus to another phenomenon, namely that, because there is a multitude of people each employing productive, effective techniques, these multiple efforts may enter into a contest with each other, a power struggle. Each human being is the point of origin for its own life-movements and hence a source of power (*δύναμις*) in the originary sense of being a point of origin for change/movement (as worked out by Aristotle in Book Theta of his *Metaphysics*). Any multiplicity of power-sources inevitably enters into a *power play* with each other and that which may be aligned for, against or with one another. The invention of the cyberworld, therefore, extends the field within which human power struggles are played out against each other and also introduces new weapons capable of deployment in the power struggle. A power play with each other is what we usually call co-operation, collaboration or teamwork, and the cyberworld opens up 'countless' new possibilities for collaboration. A power play for each other is a mutually beneficial exchange in which each individual exercises his or her powers for the benefit of the other, as in market exchanges.

One kind of power play for, with and against each other is modern *economic life* in which each of us earns a living by earning income. This will be taken here as exemplary for how the cyberworld intermeshes with the broader world. In this modern age, economic life goes on as the augmentative movement of reified value mediated by value-things, otherwise known as capitalism. Everybody is engaged in the gainful game, which is the name for the socio-ontological structure of modern economic life (Eldred, 2015b; 2008/2011). On its essential, rudimentary level, capital is nothing other than the abstract, augmentative, circular movement of reified value from advanced money-form through value-forms of productive and circulation processes back to money-form, 'ideally' augmented by a portion of surplus value. Because of its essential mathematical abstractness, in turn, the cyberworld dovetails beautifully with the gainful game insofar as the efficient, automated, copulatory movement of bit-strings can enhance the productivity of all sorts of capitalist production and circulation processes in manifold ways, as well as accelerating the turnover-time of capital (2009/2011).

Apart from this, the cyberworld, serving as it does as a congregation place for millions and millions of users, can also be converted into a market-place for commerce in commodities of all kinds: e-commerce mediated by the exchange of bit-strings. Because all movements in the cyberworld leave a trace in the stored bit-strings they leave behind, these bit-strings stored in the global electromagnetic matrix, which corresponds to the tapes of myriad countless Turing copulators, serve not only to record transactions and their details, to perform monetary transactions via online banks, but also to gather digital data on the movements of online consumers. Each consumer is identified with a digital identity. This is a boon for marketing and advertising, which has always been an important auxiliary

to mercantile efforts. They have become increasingly sophisticated during the twentieth century with the rise of modern means of transportation and telecommunications that have enabled the phenomenon of mass markets that can be worked over by marketing departments and addressed by mass advertising campaigns. Marketing and advertising mass markets require mathematical statistical methods to discover regularities in large masses of data. The cyberworld provides a superabundance of data (Big Data) on consumers that can be mined to discover potentially profitable advertising strategies.

Today's capitalism is in large part the art of herding large masses of consumers, of manipulating them with clever advertising rhetoric whose sophistication reaches new heights with advanced tools of market research. The cyberworld provides a congenial medium for fast consumer feedback that can be fed immediately into product strategies as a factor in a cybernetic feedback loop. The collection of personal data on consumers therefore becomes a political issue, for private persons are overwhelmed by the digitally enabled possibilities for revealing who someone is and what his or her life-movements are.

Such data are interesting also to the state in its efforts to surveil the movements of its citizens and foreigners in many areas including tax collection, crime, political activity and political leanings, etc. The individual person is thus exposed to the danger of being stripped of the covering essential to freely leading a private life (Capurro, Eldred, Nagel, 2013).

These are just some of the consequences and issues arising on the horizon from Turing's still emerging cyberworld. The danger is that the cyberworld will increasingly engulf human being without we human beings seeing clearly what is rolling in. This is not a question of futurological predictions, but rather the opposite of turning to learn to see the historical origins of the simple ontological hermeneutic cast of our present age. Without this hermeneutic, ontological compass, human being itself will remain blind and hence unfree.

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Hermeneutics and Information Science: The Ongoing Journey From Simple Objective Interpretation to Understanding Data as a Form of Disclosure

Matthew Kelly

Abstract

This chapter looks to provide a selective history of some of the ways in which the use of hermeneutics can be deployed to provide a general ontology of information. An attempt is made to show how and why Capurro's early work remains important to such a project, and how his constant and consistent reminders over four decades to the information community to keep re-evaluating its sense of praxis, its easily assumed conventionality, its self-declared limitations and its scientific and phenomenologically-assessable normativity all remain distinctly relevant. Through a close reading of Capurro's *Hermeneutik der Fachinformation*, I try to show how Capurro's place in the historic continuum of information hermeneutics should be acknowledged and to provide a short outline of areas of similarity and difference in the focus of a number of significant arguments made subsequently. I conclude with a brief discussion of how hermeneutic understanding and hermeneutically-informed methodology might continue to offer solutions to problems associated with the social practices that are embedded within information science.

Hermeneutics and Information Science: Capurro and Before

While Hjørland has stated that since "hermeneutics is about interpretation of texts, it is in a way an obvious method for [library and information science] LIS" (2003, p. 224), and while there is a plethora of writings which either acknowledge its specific or general applicability in a particular area of information inquiry, comparatively little has been attempted in terms of a programmatic attempt to clearly define how the putative insights of philosophical hermeneutics can aid domain-analytic research, methodological refinement or practical activities. In this chapter I hope to provide an outline of Capurro's place within the information hermeneutic landscape and, through so doing, provide a more historically informed basis for future ontological development of information practice (especially that strand which is embedded within the phenomenological paradigm). Pöggeler has pointed

to the salient fact that if Heidegger's reshaping of the phenomenological project towards hermeneutics is to have anything but academic interest it needs "to take real account of the fact that our world is determined above all else by technology" (1993, p. 23). This analysis of information hermeneutics is made with this connection of information practice as a technology firmly in mind.

Capurro explains what he means when he refers to hermeneutics:

If hermeneutics is understood as a possible framework for a question which moves not only (i) outside methodological demarcation disputes between domains, but also includes (ii) the area of action, then this corresponds to a critical self-understanding of hermeneutics—the first emerges from the dialogue with analytical philosophy and the philosophy of science, and the second from the practical turn of philosophical hermeneutics itself that evaluates originally in a positive way the incarnation of human thinking in the context of praxis. In this sense, the occupation with the understanding is not only the theming of a certain kind of knowledge of man, but the interpretation of a basic structure of what being human actually means. (1986, 1.1 The business of hermeneutics, para. 3)

In *Hermeneutik der Fachinformation*, Capurro posited that the issues that the growth of an information dependent and information focused society threw up were not especially new. What was new was their "question-worthiness." Capurro highlighted how, with reference to this changing milieu, "the loss of naturalness is the hallmark of a situation requiring hermeneutic interpretation" (Introduction, para. 1). Revolutions in computing, the resultant changes in information work and the growth of scientometric analyses and other applications of data intensivity, lead to this general indeterminacy which Capurro identified with the relationship between how we understand scientific information and how we understand ourselves. Capurro's tactical change was to drive the themes of philosophical hermeneutics outlined in the work of Martin Heidegger and to supplement them with other critical analyses from Hannah Arendt and Medard Boss to superimpose this framework on the way we conceptualize scientific information generally, and information retrieval in particular. Capurro outlined how the hermeneutic of scientific (or, more accurately, domain-specific) information moves through understanding, first, structural epistemological concerns, and then, into the interpersonal communicative rationality of language, text and information and then—even further, in a more refined sense, the professional information that becomes stored as digital and bibliographic data.

In a later articulation of these ideas, Capurro (2000) described how we should try to see that "information is the shape of knowledge at the end of modernity."¹ The partial, prejudicial, referential nature of knowledge can be seen as *thrownness*—"relativity of knowledge to

1 Capurro describes (and attributes to Husserl) the following characteristics of such knowledge as "(a) abandonment of the primacy of rational or scientific thought as qualitatively superior to all other types of discourse; (b) abandonment of the idea of human subjectivity as opposed to objectivity, in which intersubjectivity and contextuality play only minor roles; and (c) abandonment of the (Platonic) idea of human knowledge as something separate from the knower" (2000, Information and modernity, para. 1).

a changing horizon of interpretation also brings to the fore of epistemology a new category: that of truth as now, at the end of modernity, inseparable from that of relevance.” This thrownness is supplemented by a deliberate abandonment of the “subjectivity-objectivity opposition” and as such “information is described [within the hermeneutic approach] as having a certain *commonality*” that requires that we view it as “basically human” and therefore “in principle accessible to everyone” (Information and modernity, para. 1-4). Capurro is not generalizing *ad captandum*, his argument is that knowledge’s communal form matters, and where does it matter most?—never more than in a scientific community.

In *Hermeneutik der Fachinformation* Capurro is emphasizing, primarily through an analysis of Heidegger and Gadamer (but also of Popper and Kuhn) that there is no “naked truth” to speak of, the search for foundations is bunkum, experience is “theory-laden” and a pure science is a restive holdover from a pre-scientific mentality. He reminds us that there is no Archimedean point from which we can draw reference. He argues that as the role of mediation is crucial in how we look to these issues we are, part and parcel, dealing with an open ended inter-subjectivity and to know this is to know what others say, not merely what they purport to say. To be informed scientifically is to be informed in such a way that we cancel any possible chance of regressing into a state where we merely postulate what others say, where we find an equivalence with how our preconceptions exclude what we reduce to mere “subjective” evidence in the same way we might make methodological (or ontic) reductions of the technical communication process: “Preconceptions developed into theories cannot be constituted without incorporating so-called ‘subjective’ evidence, nor by excluding the communication process among the experts in each specialization” (1.1.b., The theoretical and practical implications of the concept of pre-understanding, para. 1-2).

Hermeneutics is fundamentally pragmatic in a Peircian sense for Capurro and Apel is the modern messenger of the pragmatic. In his preface to the English edition (1980), of *Transformation der Philosophie* (1973) Apel outlines in very brief terms what his program of “a transformation of (transcendental) philosophy along the lines of a transcendental hermeneutics or transcendental pragmatics of language” might look like. In the version which influenced Capurro, Apel (1980, ix) emphasizes the concentration on a “historical-hermeneutic starting point within a Heideggerian perspective,” as well as an attempt to engage with the English-language “philosophy of language” (read Peirce and Wittgenstein here but the list could be a who’s who and might include Davidson, Searle, Austin, Putnam, Dummet and Quine) and, finally, the “critical” postmetaphysical theory outlined by Habermas. Apel dubs this as “transcendental pragmatics” and points to how

experiences of nature and of methodically reified human “behavior” in the sense of a social quasi-nature—cannot be gained or be the subject of a discussion without a certain normatively relevant engagement in the sense of possible or required advancement of history through subjective-intersubjective praxis. The fact that human action, in contrast to observable behavior, cannot be recognized as action as such without evaluation, is already demonstrated...by the instances of purposive-rational understanding. (1980, p. 143)

These claims emerge from a broad assertion that “normative standards can be derived from the empirical...description of facts” and in an even broader context of the “transcendental-normative presupposition of all sciences”; the claim is that truth depends a priori on the “realization of the unlimited communication community within the historically given society.” Such a society is embedded within an organization of more limited functional norms and an assumption that a conflict is implicit in this and more naturalistic truth claims, which can be made somewhat clearer in the following way: (i) critical social science “which conceives of its object simultaneously as the possible subject of science cannot... abandon the goals of human action that are still to be evaluated” (p. 143) and (ii) that the challenge is, therefore, to leave a space for future goals for humanistic enquiry to be left open (that is, to be developed through the application of informed historicity or discovered through dialectical means).

Capurro makes it clear in *Hermeneutik der Fachinformation* that he is seeking to find the level of importance to which “pre-understanding in theory and practice” (1.1.b., The theoretical and practical implications of the concept of pre-understanding, para. 5) can be assigned to studies of technical, specialized, scientific information. Such an understanding is “not primarily an activity of a subject, but one dimension of being human” (1.1.d. The systematic place of a hermeneutics of scientific and technical information, para. 1). The textual nature of any search for a discrete hermeneutic applicable to specialized scientific information is central to such an investigation as “texts cannot be separated in turn from the communication process constituting them”² (1.1.d. para. 1). In a footnote explaining the choice of hermeneutics as a method—the reason given for the choice is linked to its “openness” and to its ability to help “overcome a certain hermeneutic ‘blindness’ for the actual performative meaning of certain phenomena” (1.1.d. para. 3)—Capurro references a view that mathematical and hermeneutical thought are in a “strange relationship of complementarity” (Becker, 1959, p. 169). These ideas are certainly compatible (and co-terminous) with Apel’s discussion of Wittgenstein and hermeneutical understanding and with Rorty’s explanation of epistemological behaviorism.

Capurro’s project was founded upon the idea of an “information crisis”—an overload that threatened to create havoc within the social basis of scientific information production. For Capurro, contextualizing his inquiry in its West German setting provides the basis for affirming that “technical information is always anchored in a concrete society,” albeit that there are both transcultural and intercultural influences that impact this unequivocally “social nature of knowledge” (1.2.a., para.12). The need to embed this modern self-understanding of technical information was relatively new when Capurro was writing *Hermeneutik der Fachinformation*, as was the possibility of electronic exchange, but where Capurro adds to the discourse and hints at practice is in asking that we see that this limited disciplinary type of information-to-be-exploited, with all of its relational impacts on important social problems, as just part of the potential group of information sets that might be included in how we conceptualize the field. When broken down thematically Capurro

2 “Texte lassen sich wiederum nicht vom sie konstituierenden *Mitteilungsprozeß* trennen.”

finds that we have a generalized science and technology need, a business and commercial orientation, a humanistic and social science focus and, finally, a multidisciplinary area of interest—and yet comes to the realization that, however we break them down, we run the risk of selling each and the whole short. Capurro guides us toward both the historicity of the problem and the solution with a reference to Socrates's statement in Plato's *Theaetetus*: "It is a ridiculous answer from that which is asked, what knowledge is, if he responds to them by the name of some art" (1.2.b. The current international self-understanding of specialized information, para. 1).

When we look at the linguistic nature of what we mean by technical information we find ourselves, according to Capurro, between a rock and a hard place. We find that when expert, specialist, generalist and subject are all joined with information, we are left with a sense that they are "embedded in a verbal and conceptual field in which not only the sciences are meant (in the broad sense of the word), but also all kinds of professional activities and practical activities" (1.2.c. At the present everyday self-understanding of specialized information, Para. 1).

Capurro identifies the core group from whom information hermeneutics had grown in a thematical sense; Börje Langefors, Alwin Diemer and Norbert Henrichs. He notes how Langefors utilizes the hermeneutic approach to try to refine the general workability of information systems while Diemer and Henrichs utilize scientific and technical information to aid in the construability (*Auslegbarkeit*) of their philosophical hermeneutic endeavors. He also draws on Nicholas Belkin's Anomalous States of Knowledge (ASK) theoretic to information retrieval as an example of a trend that, while not self-declaredly hermeneutic, exhibits many of the same traits that could be said to characterize this approach.

It is worthwhile to look a little deeper at Langefors's (1977) perspective to highlight his approach. Langefors looks to the "present event" of the act of interpretation rather than "objective content" or "true intentions" of an author (p. 4); the "infological dichotomy"³ regarding data and information—data as representation of knowledge or carrier of information—leads to a necessary conclusion that the medium does not carry information but "can only generate information when it is brought into correspondence with a suitable 'receiving structure' or mental world model" (p. 7). According to this view, this creates the linkage with the "necessary" character of this relationship and it has a significant bearing on epistemology. Langefors speaks to the problem that lies behind our formalization of rules of formation and rules of interpretation such that an "informal problem of understanding" still remains; the problem lies in the "frame of reference." While records may have explicit description of their own rules of formation, these cannot be taken as givens (data) unless the receiving party "knows the intended meaning" of the terms that make up the record (when significant "formalized agreement" is likely to have been established between sender and receiver about the "reference structure"). Expansion of this message to many more users

3 See Langefors (1980) for a more detailed explanation of what the term "infological" was meant to confer.

assumes they are all involved in the agreement, or else, that the system is able to inform them in this regard. Thus the data base may have to contain not only records representing individual fact messages but also data representing part of the “mental model. (p. 9)

Of course, this immediately raises the question of how these mental-model data may be interpreted by means of a second order model, and so forth (p. 9).

Langefors articulates that there is an identifiable lack of engagement with the problem of “how to design data records to convey information [in order to] clarify the extremely complex problems of understanding, world models, and the dependence of any element of information on other information” and identifies hermeneutics as a disciplinary practice that can tackle these problems openly (p. 10). The “basic infological observation” for Langefors is how to design symbols or data to represent either information or knowledge in a way that works with the “frame of reference of the intended users.” He links this with the hermeneutic notion of fore-knowledge (or pre-understanding/*Vorverständnis*)—which effectively asserts that “one can only understand what one has already understood” (p. 10). Such questions are not entirely theoretical but link with practical problems of system design⁴ to meet the needs of users for information that is intelligible. Langefors delineates the infological dichotomy further as related to the problem of understanding as it is defined in natural and human sciences and explores the relative role of causation and rationality in defining explanations of events in the two types of inquiry (both of which are relevant to his information systems focus).

Langefors discusses the hermeneutic relationship between human behavior and what he calls “the pre-understanding of the world data” (p. 15). In trying to unpack this he describes the similarity of the insights of the later Wittgenstein (that “experienced facts themselves may only emerge in the connection with a language game”) with his own notion of infological interplay (between “the data and the ‘receiving structure’”). Crucial to this hermeneutic view is that understanding is not simply a correlationist association of facts but is a constitutive force which creates the conditions necessary for such facts to emerge. Langefors describes a state of “mutual reinforcement” between the new knowledge of messages and the receiving structure/world knowledge that forms our pre-understanding (p. 16).

Langefors anticipates Giddens’s “double hermeneutic” in defining the difference in understanding-at-disciplinary-levels as being less about intersubjective relationships with world knowledge than about how consciously we work with their expressions. He finds support for his view in Apel’s approach—“the language based understanding of that which one means and that which one wants is complementary to the objective science...” (Apel, 1968, p. 51).⁵ Langefors looks to how the “initial knowledge” of the *Geisteswissenschaften* “ties the manifestation of the sense[s] to the perceptible ‘expression’” and that this is a type of “linkage of basic knowledge to sense manifestations.” He claims that, for

4 For Langefors it is the broader notion of information system while for Capurro (1986) it is information retrieval.

5 Apel’s phrase is “Die sprachliche Verständigung über das, was man meint, und das, was man will, ist zur objektiven Wissenschaft komplementär in dem bereits definierten Sinn.”

hermeneutics, this is “more relevant than its linkage to instrumental actions into nature” (p. 21). When we narrow down our focus to specialized information⁶ we see a tendency for dialogical-communicative rationality (“dialogue communicable sense”) to mutate into what Langefors calls a “rigid sign instrument.” This occurs through the changes that occur with such formal languages that move understanding beyond “the individual interpretation of real life expressions” and toward “participation in the specification of the conventions about the rules of formation (syntax) and rules of interpretation (semantics) of the sign system” (pp. 21-22). The worth of Apel’s explanation of problems of historicism and transparency is acknowledged: while we ideally would have two main knowledge interests “the technically relevant knowledge of nature and the hermeneutic interest in the intersubjective understanding” (pp. 23-24), this is unrealistic. A pragmatic analysis would reveal that we actually bring to these ontological questions our own intentions (Langefors highlights this as the “actual forms of life and work” [p. 24]). For Langefors, Apel’s model of the partial interruption of hermeneutic communication (to understand from within a conversation we may need to detach from the conversation to objectify our partner in a hermeneutic inquiry) is a felicitous analogue to the development of information systems. It is valuable that we can acknowledge that we, almost inevitably, will tend to objectify our conversational partner, somehow, and at some stage. Such “infological” problems are ineluctably entwined with the same problems encountered in confronting the advantages and pitfalls of historicism and call for a practical solution that, at least at one level, envisages “the subsequent absorption of the [scientific] explanation into a deepened self-understanding through a sort of dialectical mediation.” Put another way, we find ourselves in a dialectical interplay between the conventional (neo-positivist) social science explanation and the “historical-hermeneutical understanding of sense traditions.” Langefors emphasizes the role of hermeneutics is analogous to his basic infological observation—that is, “the ‘receiving structure’ determines what information can be conveyed by data”⁷ (p. 26).

6 Capurro (1986) characterizes the specific area of his project as scientific and technical information (*Fachinformation*) while Langefors describes his focus as on technical executive knowledge (*Herrschaftswissen*). Capurro now feels that *domain-specific information* is a more appropriate rendering of the essence of the type of information that formed the basis of *Hermeneutik der Fachinformation* (personal communication, 22 November 2015).

7 The methodological framework is not particularly promising (although it adds illumination and helps to elaborate the significant problem areas between the types of sciences that underpin information science) according to Langefors because it does not bring the requisite structure to enable “understanding people and ideas” as opposed to “explaining factual events.” The lack of a perceived means to “handle the problem of validation or confirmation,” in fact the tendency to “treat the question of validation as non-relevant to hermeneutics” is a less than optimal situation. Langefors posits several questions to the hermeneutic approach beyond validation; he asks when hermeneutics claims that proofs are not the goals of its inquiry but that understanding is, how is it that its practitioners can know that they are not, simply, plainly misunderstanding matters? He also asks how can the hermeneuticist validate their understanding as useful (1977, p. 27)?

Henrichs's (1981) approach, as defined by Capurro, looks to "objectified knowledge" which is characterized by both documentary representation and contextual systematization—its view is that given a certain nod to intersubjectivity, we are speaking about knowledge in the objectified sense as potential information. Admittedly abstract, Capurro identifies how Henrichs's approach, nevertheless, is directed toward "organization of information exchange" as the core focus of information science. Scientific and technical information, in terms of the "communicability of technical significance levels," as either—

1) subjective terms: in the sense of a transcendental subjectivity (conditions of possibility of recognizability and understandability of significance levels); 2) objective conditions: formal: representability of significance levels; material: systematic feasibility of significance levels (order theory) 3) publication of significance levels (basic access). (1.3.c. N. Henrichs' semiotic-hermeneutic approach, para. 1)

—all involve separate moments of understanding. Capurro maps Henrichs's approach onto Peirce's semiotic of sign, object and interpretant:

The approach is essentially hermeneutic, since here objectified or represented knowledge is conceived always within the horizon of a community of interpretation that not only produces, arranges, processes, communicates and disseminates it, but at first grounds it in its very sense as semantic content. (1.3.c., para. 4).

It is not always straightforward to understand "how objectivity based on subjectivity is possible" (Deutscher, 1980, p. 21) but for clarity it is worth looking at what is at stake and Deutscher provides a worthwhile reminder as to how Husserl described this *world enigma*. Husserl, in an attempt to rehabilitate Kant's search for transcendental subjectivity, replaces "the anonymity of an attitude with an autonomy in which we deliberately engage ourselves" (p. 22). As a result we find that "the experienceable ego capable of transcendence... must be a capacity we have, to appraise and to judge ourselves" (p. 27). We are not dealing with a problem when we say "all one's knowledge, understanding and experience comes back to oneself" (p. 29), but it is true, according to Deutscher, only as an iterative tautology ("that what is mine is mine only if it is mine"). In other solipsistic senses it does not hold water but Deutscher points out that there are lessons to be learnt from the tautology:

Those who forget or fail to understand these reiterations, fall into the confused imagination of objectivism, that things might be known, without those things being known, with all that such knowledge implies in terms of what the objectivist wishes to derogate as "merely subjective" ideas, choices, accomplishments, and culture. Contemporary physicalism, which wishes to state that there is nothing more to be truly said about reality than is stated in physics, is trapped as incoherent objectivism. Even the reductive language of the philosophy of physicalism is no part of the language of physics. And though, in principle, there could be a description of physicists, and of their tests of theories of physics, within the language of physics itself, it is not in that language that even the scientific behavior of physicists can be understood as scientific, and it is not in that language that we can evaluate the tests of physical theory. (pp. 29-30)

Henrichs's contribution to Capurro's information hermeneutic should not be underestimated, located as it is in a significant identification of the need to socialize the information construct and to then ethicize it through a process of normalizing, integrating and justifying the development of a given information system. Similarly, Diemer's contribution to Capurro's hermeneutic begins with the interpretive community which deals with information and communication. Within this community, there is never just "knowledge-in-itself," but always "knowledge of facts" which can be linked with the phenomenological notions of *noema* and *noesis* respectively.⁸ Information units (the so-called *informeme*) are dependent for their representability on pre-understandings developed within the given interpretive community who are, also, similarly dependent as "creators, brokers and viewfinders." Classification systems and thesauri are the obvious examples. Diemer helps us to understand how bringing historicity to bear is a significant development in any systematization designed to facilitate knowledge transfer (1.3.b. A. Diemer information hermeneutics, Para. 2). According to Capurro, there is an associated shift in focus from resolving questions of order to those associated with the transmission of information. The third influence for Capurro, as mentioned previously, is Belkin's Anomalous States of Knowledge model (ASK); Capurro highlights it as an example of the unthematized hermeneutical approach which he believes can be usefully grouped with Henrichs's and Diemer's approaches due to the "hermeneutic movement of reflection," which it incorporates. The ASK situation is one where the "question wording and system responses are not the primary basis of the information situation, [they are] the 'problematic situation' itself and [key to any resolution is] the realization that knowledge of the solution of the problem is inadequate" (1.3. d., Unthematic hermeneutical reflection moments in information science approaches, para. 1).

Capurro is sympathetic to the advantages that this type of inquiry offers in further developing the relationship between how we conceive of human understanding and our purposive use of information; in bringing the cognitive view somewhat within the phenomenological orbit he recalls how

One of the principles of hermeneutics recognizes that each statement will only be understood when it is conceived as responding to a question. Only if the seeker perceives his understanding of the matter as a pre-understanding is the dynamic set in motion and the cybernetic [feedback loop] displayed. (1.3. d., Para. 1)

Capurro explains how critical analysis of models emanating out of "the hermeneutics of scientific and technical information [and] the theming of certain basic conditions of the human being—especially those associated with the knowledge and understanding process" helps to bring to light how reductionist models associated with this process are inadequate to deal with the demands of a modern, scientific information culture. Such models are largely epistemological in origin, and perforce, demand of those who would engage with them, a modicum of knowledge associated with both formal epistemology and philosophy

8 "Roughly speaking, the noesis is a meaning-giving part of an act, while the noema is an act's meaning...the subject's 'sense' of an object" (McIntyre & Smith, 1989, p.10).

of science. We cannot come at these issues entirely originally from an information-scientific perspective but must, of necessity, assay (at least elements of) the philosophical landscape first. As I read this, hermeneutics may allow a certain bypassing of the formal epistemic method and scientific literacy associated with the reductionist models.⁹ It remains though, no easy road to travel. In rejecting the more formal epistemic method for Gadamer's approach that equates understanding with ontology we are required, in a sense, to enter into a relationship with the originality and fecundity that hermeneutics promises those who are prepared to immerse themselves in its debates and its canons (2.1. For a critique of epistemological models in information science, Preliminary note).

Following on from Henrichs's (1968) pioneering work, *Bibliographie der Hermeneutik und ihrer Anwendungsbereiche seit Schleiermacher*,¹⁰ Capurro defines how "the communicability of technical significance levels is the core of a theory of prescribing information" (2.3.c. The process of communication among experts: specialist communication, para. 1). Capurro takes his investigations in *Hermeneutik der Fachinformation* into more specific domains in the final parts of the work which orient "Towards a hermeneutics of information retrieval," and into the "Hermeneutical questions concerning the construction of data bases." Capurro points to how

When setting up a database, part of the themed pre-understanding for the purpose of its (targeted) recovery is objectified. When seen hermeneutically, databases are objectified preconceptions. Given this, different hermeneutical questions arise depending on what kind of prior understanding is in place, how this is set out and how it is made "retrievable." (3.1. Hermeneutical questions concerning the construction of data bases, para 1)

Throughout this work Capurro continues to emphasize how important the "the selective access to technical significance levels" (3.1. para. 3) is for both the hermeneutic task and for information specialists. We can see this "in respect to the contents of documents and the structure of bibliographic data bases...[it] arises in particular in those hermeneutical questions in a specific form associated with the structure of understanding" and deals with classification as "the unity of the facts to a thematically pre-understood field; in the relevant technical terminology [such as is exhibited in] the process of *indexing*" (3.1. para. 6); and—

finally, the themed issues themselves, if they are presented in abbreviated form, in other words the process of *referencing*. These processes should allow for retrieval to take place as a "fusion of horizons" between the objectified and the preconceptions of seekers. The structured bibliographic database is thus essentially hermeneutical in nature: it is the result of a particular form of objectification of a preliminary understanding and always presupposes this during retrieval. (3.1. para. 6)

9 See Kockelmans (2002) for a worthwhile discussion of these matters.

10 "Bibliography of Hermeneutics and its Applications Since Schleiermacher."

Capurro highlights how “just as the construction of a database is a creative process, that is, an ‘ars,’ so too is the process of recovery of digitally-stored technical information (information retrieval)”; it is not a mechanical process able to be hacked with a formula. The techniques of searching inquiry (*ars quaerendi*) and of inventive inquiry (*ars inveniendi*) are not of this formulaic kind. But when *ars quaerendi* and evaluative inquiry (*ars iudicandi*)¹¹ are joined (in the Leibnizian sense) as algebraic methods for determining propositional truth or the determination process for as yet undetermined truths (3.2 Preliminary note, para 2),¹² they should serve, primarily, to promote *truth* rather than the *methods used to uncover truth*. Useful truths, while often “fixed partly in writing” are, nevertheless, “in great disorder,” especially those that relate to the practical nous of professional skills. Organizing and searching this tacit knowledge develops slowly from “collected and parent knowledge.” It is here where heuristics come into play and Capurro identifies the conceptual linkages to artificial intelligence research. Capurro’s reference in this regard is Rich and Knight (1983),¹³ but it is worth looking at other contemporaneous work in this regard as well. Lenat (1982) points to how heuristics is “the study of the informal, judgmental ‘rules of thumb’” (p. 189) and these evaluate how, for example, “heuristic guidance is only as good as the generalization process...used in deciding the situation was similar [to some other situation]. As the world changes, a heuristic which was valid and useful may become invalid”¹⁴ (p.190). For Lenat, the heuristic approach is an accumulating of *informal judgmental knowledge* and is a guide for

extracting heuristics from experts, in deciding when the existing corpus of heuristics needs to be augmented, in representing heuristics within knowledge bases, in evaluating the worth of a heuristic, in troubleshooting a program built around a large collection of heuristic rules. (pp. 193-194)

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- 11 “An ‘ars iudicandi’ should allow every problem to be decided by an algorithm after representation in numeric symbols. An ‘ars inveniendi’ should enable users to seek and enumerate desired data and solutions of problems. Thus, in the age of mechanics, knowledge representation was reduced to mere mechanical calculation procedures. In Kant’s epistemology, recognition is not only a passive mapping of the external world, but an active construction of internal representations by a priori categories of pure reason. In modern terms, categories are considered as tools which must be assumed before (‘a priori’) any application of knowledge representation” (Balke & Mainzer, 2005, p. 587).
 - 12 “Beide Verfahren betreffen also den Findungsprozeß noch nicht bekannter Wahrheiten.”
 - 13 Based on Rich and Knight’s identification of the major problems of AI as 1) a system needs to hold a lot of knowledge to answer anything but “trivial toy problems” and 2) “as the amount of knowledge grows it becomes harder to access the appropriate knowledge when needed, so more knowledge must be added to help” (1983/2009, p. 22), it seems unremarkable to see how there might be a role for hermeneutics in helping to define what is foundational, what is appropriate and what is the nature of this knowledge added as supplement to the ontological problems identified in the first place.
 - 14 The ability of a domain to be modelled as a heuristic search can be linked according to Lenat to the factors of observability, continuity and stability (p. 190).

In the section entitled *The hermeneutic constitution of the online dialogue* (3.2.a) Capurro outlines (after Gadamer) how texts always force us to “come to terms” in a way that the interpersonal dialogue does not. Hermeneutic conversations are not materially different from online dialogues with machine-based systems when such systems embody the artistry, the connectivity, the commonality and the conversality of the human creator (3.2.a, para. 1). Questioners’ database interrogations reveal the preconceptions of themed issues, which is a type of Heideggerian “world disclosure” (*Erschlossenheit*). Capurro develops this theme further in *Herausdrehung aus dem Platonismus: Heideggers existenziale Erstreckung der Sinnlichkeit*¹⁵ (1994) and in *Beyond Humanisms* (2010). This type of disclosure is described presciently by Capurro as a “profile” and is part of the reciprocal stored technical data that informs the environment of the “interrogation” and response process:

The meeting between a questioner and an (information) system is to be interpreted as a hermeneutic process, during which the open horizon of the questioner and the fixed horizon of the system itself provisionally “merge,” that is, the objectified preconception is published as a (possible) answer to a question, and thus understanding is recovered in the online dialogue. In this “fusion of horizons,” the identity and difference in their blending and contrasting simultaneously become apparent. (3.2.a, para. 3)

Capurro also takes this interest in the hermeneutics of the constitution of online dialogue into an investigation of how “search and find” methods can be construed as a hermeneutical process and into how the relevance of retrieval results also fit the broader concern. When we attempt to *search and find* we are in an online dialogue—“a search process that originates with the questioner himself and thus always remains related to his question horizon.” Questions that form a part of this are both manifestations of inner psychological states of (human) subjects, as Belkin emphasizes, but they are also reflective of interpretations which are linked to (topical) subjects which, so to speak, exist for themselves (3.2.b., The “search and find” method as a hermeneutical process, para. 1).¹⁶

Capurro looks to Swanson’s intuition that information retrieval is on the horizon of subject-oriented topicality:

we might look upon the process of information retrieval as a trial or a conjecture, guided by some idea of what one is seeking. The principal value of the process lies not so much in the direct use of the retrieved documents but rather in the indirect function which they serve of stimulating a reformulation of the request... The retrieval of irrelevant documents may therefore sometimes play as significant a role in stimulating research as does the retrieval of relevant documents. Errors or mistakes are not to be thought of in a pejorative sense, but rather as essential components of the research process (Swanson, 1977, pp. 138-139).

15 “Twisting Free of Platonism: Heidegger’s Existential Extension of Sensuality.”

16 “Das Fragen ist aber wiederum weder als ‘innerpsychischer Zustand’ eines ‘Subjektes’, noch als ein anonym auf ein ‘für sich bestehendes Fach’ bezogen zu deuten.”

What is restored in this process, according to Capurro, is how understanding operates through these variously experienced types of *questioning and retrieval* as a “source of new questioning” (3.2.b., para 3) and, more importantly, how the hermeneutical character of asking is revealed as common to both the human subject and to subject knowledge.¹⁷ Too narrow a definition of the information retrieval process (and, similarly, of how we understand the process of acquisition of scientific knowledge) is to miss the point:

The open nature of the retrieval process as well as its relation to the horizon of the questioner, who brings their preconceptions into play can have a different purposes, and can therefore generally be regarded as a *hermeneutical* process of interpretation and its recurrent and “stimulating” character as a special form of the “hermeneutic circle”. From the found references as well as by the search process, the preliminary understanding of the questioner can be extended, enriched and changed in many ways and thus presents itself as a new basis for further searches. We learn not only from our “errors,” but also from our “successes.” (3.2.b., para 5)

Capurro closes *Hermeneutik der Fachinformation* with a discussion of how a proper understanding of information retrieval aids in the socialization of scientific and technical information. What is important to communicate is that we open ourselves to the idea that “specialist information is according to our hermeneutical approach constituted by the professional communication process of a professional community with respect to various themed issues” and that in line with this we need to appreciate just how “professional communication is taking place in many ways”—through both simple and complex heuristic approaches to informational problems: technical (and probably scientific) communication of meaning emerges from the structure of a jointly-informed cosmopolitanism.¹⁸

Presaging much of his later work on *angeletics*, Capurro maintains that in humanizing information-use-mediated-by-technology we enter a hermeneutic realm that should answer questions of how we integrate emergent communicative forms (e.g., data base interrogation) with existing forms (e.g., bibliographic interrogation); he advances the view that these are designed with an “open horizon” of a questioner in mind and that the constitutive relationships which emerge, the sense of integration of individual and information system, needs to be thought of as both touching upon the “horizon of knowledge” and the “‘practical’ life horizon” of the human subjects designing and using the system. Capurro draws on Wersig’s insight that complex informational systems need to be harmonized with the human factors¹⁹ (effectively a recursive requirement for problem solving) through a “needs-based symbiosis” (Wersig, 1980, *apud* Capurro, The

17 “Damit ist der beiden Prozessen gemeinsame hermeneutische Charakter des Fragens angesprochen.”

18 “Wir sahen, daß Fachkommunikation sich auf vielfältiger Weise vollzieht und ihren Sinn aus der Struktur der gemeinsam mit-geteilten Weltoffenheit erhält.”

19 Wersig (1993) engages with a range of such factors in a study of postmodern knowledge usage. He lists depersonalization, believability, fragmentation and rationalization of knowledge as examples and links them with respective types of technology usage: communication, observation, presentation and information.

question of humanizing the use of technology, 3.3.b., para 3). Capurro emphasizes how it is the potential for a practical application of hermeneutic methods of interpretation and understanding to considerations in specialized information research that primarily underscore the incorporation of such an approach. There is no new “rationality standard” to accompany the spread of information systems and tools but there are changes to meanings associated with how we operate and engage with the tasks linked to these systems and tools which affect our social being (Outlook, para. 8). Hermeneutic insight helps us to make sense of the informational choices we need to make when deciding on alternative paths in “knowledge storage...knowledge sharing... knowledge manipulation and transmission of knowledge” (Outlook, para. 9).

Hermeneutics and Information Science: After Capurro

The second part of this discussion looks to what came after Capurro in the English-language literature in terms of the linkages of hermeneutic theory or orientation with approaches to informational problems. Brooks's (1989) treatment of the state of information science is not untypical of an aporetic tone that laments how “real library problem solving awaits the development of a science of information, one that is organized in the model of a science and uses scientific models to produce knowledge” (p. 248). “Information as hermeneutics” is outlined as one of a series of social science research methods which, while an allowance is made for the possibility of valid local results, ultimately leave the broader question of the search for a reliable method unresolved (the implication is that the social science methodologies on a subjective-objective continuum are basically easily ignored at the subjective end). Brooks's approach here is unusual in that it does not seem to discount the potential validity of the use of hermeneutic methods or a hermeneutically-informed ontology. He uses Hoffman (1980) as support for the notion that “information as hermeneutics” might be helpful to allow us to see how “information is an integral part of texts themselves. Information is the aggregate of statements, facts, figures, and their meaningful connections. He [Hoffman] could use his method to discover if there was more information in this paragraph than the following one” (p. 241). While Hoffman does not use the term “hermeneutic” in his paper he does strongly emphasize the need “to take meaning or content into consideration for the development of a basic concept of information” (1980, p. 291) and that “the facts and figures should be connected between themselves by...‘ideas’ or ‘reason’ or ‘logic’ or whatever one may want to call it” (p. 292).

Analyses such as the one that Brooks has made all too often involve a shallow rendering of the philosophical issues in question, especially as they relate to understanding subjectivity and science. By way of an antidote, John D. Caputo (2000) points to how in *Being and Time* Heidegger is concerned “not in undermining the sciences, but in providing a hermeneutic accounting.” This involves an attempt to explain how “scientific activity, of whatever disciplinary type—natural, social or human—is nourished by pre-scientific, historical life which is its matrix and point of departure.” Heidegger's concern is, according to Caputo,

to explain how science is “derived” from historical life (= “Being-in-the-world”), how it is ontologically generated from our concrete entanglement with the world, viz., by a horizontal change-over from our primary and inescapable “concern” to a relatively disengaged projection of the world as a field of objects...while legitimate in its own sphere such scientific projection is limited, [they are] theoretical constructions aimed at explicating a world from which we cannot finally or wholly extricate ourselves and to which we belong more primordially that science can say. (2000, p. 166)

It is not in any sense about cultivating an anti-scientific attitude but about ensuring that science’s claims to knowing are kept “in check” through a rationally-inclined discourse which “delimits its claims by subordinating science to the world in which we live, which has a prior claim upon us.” The crux of such arguments go to how science is no independent force acting in the world but “a hermeneutic projection of a sphere of objects...limited by the hermeneutic horizon of the scientist.” Archimedean standpoints are illusions and the hermeneutic accounting is a helpful aid in revealing this, and should be seen as such, rather than as a renegade expression of poorly-framed scientific activity (p. 166).

Contemporaneously with Brooks a more sympathetic and fully developed articulation of hermeneutics as research method and “adjunct field of investigation” in information science emerged within the Anglo-American sphere (Benediktsson, 1989, pp. 201-202). Benediktsson discusses how the hermeneutic method, within the broader phenomenological school, brings the subjective epistemological stance into play and links this with its felicitous use in social science rather than information science as such. The paper is self-confessedly an attempt to redress the balance from empirical-quantitative methods which have not resolved the theory drought in information science and have left the state of scholarship swamped by an “ocean of empirical studies which attest to little or no practical value.” Hermeneutics is for Benediktsson the reliable “other side of the coin” (p. 202) and, as one of the philosophical strands that is deeply embedded in social science and humanistic inquiry²⁰. While for Benediktsson a rebalancing is on the cards, it is neither an ideological nor irrational path, but one that simply hopes to clear a space for other means to derive valid knowledge from inquiry. Benediktsson predicts that the growth in computing power allowing handling of massive amounts of data should allow information science to focus more on “what is in those records and how they are accessed or retrieved” and that such foci might be best handled by “qualitative, hermeneutical methods” (p. 203).²¹

What are Benediktsson’s methodological insights? Firstly, they are to highlight the relationship of hermeneutics and phenomenology, the former being a much older tradition, the latter, through Husserl, revealing the “impasse the *Geistesswissenschaften*

20 See Heller (1989) for an outline of the difference between nomothetic and hermeneutic social science and also of the role that both can play in providing self-knowledge in self-aware, contingent societies such as are exemplified by Western modernity.

21 Unaware it seems of Capurro’s work, Benediktsson’s primary information science support is the work of Joseph Natoli, whose *Librarianship as a Human Science: Theory, Method and Application* (1982) is an encouragement for increasing tacit rather than propositional knowledge (p. 205).

has arrived at via the persistent application of empirical-scientific methods” (p. 206). Secondly, there is the notion that “the hermeneutical method cannot be properly expounded without phenomenology.”²² Benediktsson outlines the influence that Husserl’s phenomenology (as a descriptive, unitary and anti-positivist project) had generally, and with regard to later thinkers who developed his ideas in more hermeneutical directions (Heidegger and Gadamer). Benediktsson’s critique benefits from engagement with the work of Bauman (1978) on the relationship between hermeneutics and social science. A fourfold division is offered by Benediktsson (after Bleicher) as covering most areas of 20th century hermeneutical enquiry; he divides these into theory, philosophy and critical practice and adds to Bleicher his own fourth strand which is indebted to Ricoeur and is a semiotically-informed structuralist analysis that goes to the way texts are analyzed. This fourth strand is, after the broad theory strand, the most important thematic with regard to information science.

The basic hermeneutic theory (free from complex argument) can be linked to “critical-textual bibliography” (p. 211) as “pure philology,” arising from etymological-semantic practice. Undoubtedly, as Benediktsson claims, these practices have contributed to (in law and theology) the movement toward greater objectivity in interpretation of texts. Problems arose in the 1960s within the hermeneutic movement which were associated with this notion of objectivity. Betti (and E. D. Hirsch) opposed Gadamer’s ontological turn in interpretation. Ramberg and Gjesdal provide a brief explanation of what was at stake in rejecting the Gadamerian concept of fusion of horizons (to which the objectivity debate was linked):

Speech and texts, Betti argues, are objectified representations of human intentions. To interpret their meaning is to breathe life into these symbolically mediated intentions. This is possible because although the interpreter’s individuality and the individuality expressed in the text are constitutively different, the interpreter may overcome her own point of view in order to get a grasp on the meaning of the text. At issue is an attempt to re-create the original process of creation: not in order to reach the psychological state or content of the author, but to get at the true and only meaning of the text. (2005, Objectivity and relativism, para. 2-3)

Ramberg and Gjesdal point to how for Betti and Hirsch the “fusion of horizons” is plagued by the problems of “epistemic relativism”: if validation has no meaning neither then does interpretation, and, therefore, we lose all real connection to the knowledge and objectivity which classical hermeneutics (unreformed in terms of the relationship between ontology and epistemology) feels is primary. Noakes argues that

Gadamer’s predominant emphasis on the interpretive subject at the expense of an extended analysis of the object leaves very little room for the development of an adequate concept of the linguistic sign. Examination of the sources of his account of the sign suggests no study of modern linguistics or language philosophy; he uses the notion of language (logos, verbum) in

22 Seekers of early information science engagement with phenomenology should look to the work of Eugene E. Graziano as a starting point.

a very general, thematic way. His scope, moreover, is limited to the linguistic sign. Betti, on the other hand, provides an extended analysis of the interpretive process in relation to sign systems which are alinguistic or only partly linguistic...His continuing references to Peirce, and the extension of his interest outside a strictly linguistic realm, suggest new possibilities for the definition of the relationship between semiotics and hermeneutics. Indeed the moment seems apt for a re-examination of the negative connotation of Gadamer's description of the "psychologism" of Betti's hermeneutics as part of the legacy of Schleiermacher." (1982, p. 36)

Benediktsson's argument is subtle but not easily reconciled with the dominant Gadamerian tradition. He says that Betti's approach, which highlights the addressal of our understanding by another mind that objectivates itself in certain "forms" and also describes how interpretation is always about understanding "the meaning of these forms," is "a perfect match for those problems encountered in LIS activities of encoding and decoding information sources, or in preparing information for use" (p. 211). The "objectivations of mind" Benediktsson refers to are crucial for LIS—at the very least in terms of providing an adequate way to understand domain knowledge (Kelly, 2014). But, more broadly, what of the claims Benediktsson makes for Betti's approach? Budd (2001, pp. 285-286) takes Benediktsson to task for what he calls his adoption of Betti's "psychologistic" path. Like Budd's other criticisms of Benediktsson, this one is lightly made. Kusch (1995) makes clear that charges of psychologism are many and varied and so inconsistent that the term is effectively meaningless (except perhaps as how it reveals aspects of the sociology of scientific knowledge). Benediktsson's account is hardly a dismissal of empiricism, as Budd claims, if he states that his goal is "not to 'get even' with the school of empirical research" and that this is neither "possible nor desirable" (p. 202).²³

What does Benediktsson offer then in the way of insights through the Betti hermeneutic that are worthwhile for information science? At an epistemological level, Betti provides a hermeneutic orientation that sits well with

those problems encountered in LIS activities of encoding and decoding information sources, or in preparing information for use...since there are clear implications for LIS in recorded (textual) communication, there are clear implications...in this formulation, particularly for subject analysis, as well as for reference theory, information management, and system analysis. (Benediktsson, 1989, p. 211)

The Betti-linked concept of "objectivations of mind" are not unknown in Capurro's work. When summing up the role of rationality and hermeneutics in their dual association with specialized information he makes the point that it is not so much about taking a mechanistic

23 Budd's criticisms reflect what appears to be a fairly cursory engagement with the source material. Budd's contribution is substantial to the overall popularization of philosophical inquiry (and hermeneutics) within LIS however and these observations are offered by way of an attempt to encourage those interested to read Benediktsson's work for themselves rather than take Budd's criticism at face value.

view (with La Mettrie) that we are *l'homme machine* but it is “more about the question of the possibilities of human objectification processes” (1986, *Outlook*, para. 2).²⁴

Benediktsson puts space between what he calls “the strictly hermeneutical process which proposes a close relationship between author (originator of text or speech) and interpreter” and a similar interpretative process in information science. What makes the difference is “contextual information” over “atomized information.” Benediktsson is as one with Betti as to how “obstacles which might interfere with ‘objectivity’ of understanding” need to be overcome—he uses the example, within information science, of reference theory. Betti’s general hermeneutics and reference theory both need to overcome “resentment of ideas, distortion of ideas, self-righteousness, conformism, and lack of interest in other cultures” in order to maximize their validity or applicability (p. 212). Benediktsson acknowledges the hermeneutic specialist Joseph Bleicher’s view that Betti is somewhat stuck in a natural science model of knowledge acquisition but reconciles this as not being a game changer for his argument. He does this through reference to Betti’s matrix of interpretative forms (recognitive, reproductive and normative). Retracing Benediktsson’s work more fully would be of enormous benefit but all that can be offered here is an abbreviation which will touch on the main points he raises in connection with hermeneutics and information science:

- Bibliography and indexing suffer from semantic abundance or lack thereof.
- Can a record have “excess meaning” in information science?
- How can “reproductive (involving communication with others) interpretation as a means to understanding” be assimilated when information scientists deal with problems of textual translation?
- Subject/Librarian and Object/Text are both forms of objectivization of minds: “the task of the interpreter is to recognize or reconstruct the ideas, messages, and intentions manifested in those objectivations. It is a process of interpretation in which the content of these forms is transposed into an ‘other’ different subjectivity” (p. 213).
- “The ultimate aim of hermeneutical investigation is the explication of meaning leading to better understanding...this corresponds to basic LIS philosophy: utilization of textual means for understanding the world, a problem, and so forth” (pp. 213-214).
- “The information specialist needs to interpret context, not content.”
- Librarianship should retain at least some measure of objectivity (of course, in the form of objectivization), at least in some areas where the nature of things claims it.
- “Textual means ...and their bibliographic representation (which is the librarian’s business) are both symbols and sign systems which need to be interpreted along hermeneutical lines.”
- Access mechanisms (“automated or not”) require interpretation (p. 214).

24 “...als vielmehr um die Frage nach den Verobjektivierungsmöglichkeiten menschlicher Vorgänge.”

- “Objective knowledge of expressions of meaning is possible, not only in the sphere of value interpretation, but also in all areas where we are confronted by meaningful forms” (p. 215).

Unlike Budd and Benediktsson, Hansson’s (2005) overview of hermeneutics and information did not overlook Capurro’s early work. Hansson’s approach looked to understand “LIS as a discipline and hermeneutics as an epistemological point of departure for studying the complex issues that are subjected to research within the discipline” (p. 103); the article raised questions about the “fundamental use of hermeneutics” and, perhaps more importantly, on the “scientific value and character of hermeneutics” in information science. In an earlier publication, *In My Mind’s Eye—In Search of the Mimetic Relation Between a Library Classification System and its Social Discourses* (1996), Hansson brings this understanding to bear on a practical research project,²⁵ a “classification system with universal claims”²⁶ (p. 104) and utilizes Ricoeur’s reading of mimesis to reveal the “philosophical, social and discursive practices for classification” (p. 113). Hansson manages to “create a deepened understanding of the complexity in the relation between a library classification and its surrounding structures, societal, organisational and professional” (p. 111).

Hansson lists a group of researchers whose writing on hermeneutics and information science have provided introductions and applications to the “methodology” (Daniel Benediktsson, Ronald Day, Vesa Suominen, John Budd, Ian Cornelius and Ivar A. Hoel). Hansson takes up Capurro’s position within the framework of a certain distopic concern about hermeneutics having potential alignment with “interpretation as a way of scientific discovery and analysis.” When the practice of librarianship or information management is considered as hermeneutics Hansson finds reasons to be concerned and disagrees with Capurro that an online dialogue might be analogous to the hermeneutical circle and that such a relationship can constitute “the creation of meaning of a text or a social practice, and [that] the subsequent understanding of it, is achieved through the interpretation of the reader—[that] it is imbedded in the practice itself” (p. 108). What kind of space is Hansson carving out? He advances the view that what is important in support of any project which aims to link meaning-making to information science practice and research is a pragmatic, postmodern and dialogical approach that advances individual or collective interpretive practice rather than causal representational models. He links this back to a progressivist agenda that advocates for the movement of the information disciplines toward an alignment with contemporary society. Hansson explains the difficulties he has with Capurro’s claim; firstly he feels (after Ingwersen) that the linkages between the cognitive viewpoint and information science are not tenable as there are too many variables when attempting to delineate how individual’s cognitive factors interpolate with the socially developed preunderstandings; secondly, where Capurro claims that information seeking equates to interpretation and the combination of the two is a form of hermeneutic circle, Hansson’s

25 As did Capurro in *Hermeneutik der Fachinformation*.

26 The Swedish SAB Classification from 1921.

response is to aver that “hermeneutics in a methodological sense is not designed to provide representations of actual social conditions, but rather to construct individual (though not necessarily strictly cognitive) presentations of a predefined, or, rather, a pre-understood reality” (p. 109).

There is a certain fortuitousness at work which sees Hansson as operating on a very independent strand to Capurro. While Capurro was working in a philosophical frame for the *Habilitationsschrift* that became *Hermeneutik der Fachinformation*, and had had a significant training as a philosopher prior to his entry into documentation, many within the Anglo-American information science community had little understanding of the phenomenological tradition and its intersection with science. It would seem fair to say that while Capurro was thoroughly embedded in the scientific worldview associated with the scientific value-chain²⁷, he was not caught up in its scientific assumptions. The point here is that while for many in information science, working within a neo-positivist social science tradition, there was a great effort of will needed to break out of this straitjacket in the late 20th century. I can only suggest that Hansson’s reading of Capurro makes the assumption that Capurro is more cognitivist than *cognoscenti*. Capurro and his ilk, those for whom analytic philosophy and its logicistic analogue to mathematics was neither all that there was to speak of in philosophy nor the most compelling story to tell, had little to hold them back from bringing the fruits of the phenomenological tradition to the information science table. As Hansson makes clear about the state-of-play in the 1980s:

At that point there was an extraordinary dominance of attempts to meet the requirements of positivist theory verification (or falsification) and the subsequent formulation of general utterances regarding the archetypical “information seeker”, the nature of emerging information needs or optimal requirements for query formulation in document retrieval. (2005, p. 103)

Hansson identifies the break in this as “growing frustration in anti-realist positivism” (p. 103) within the information science community, or with those unmoved by transformations in science more broadly—associated with Kuhn’s critique or Feyerabend’s scepticism²⁸—or in the social sciences, those for whom social constructivist arguments²⁹ had made no impact. It seems to me that the really important implication of this form of realism is the implicit attachment to the correspondence theory of truth that inheres within it. David points out that at least at the surface this implies “If truth is correspondence, then, since knowledge requires truth, we have to know that our beliefs correspond to reality, if we are to know anything about reality” (2015, No independent access to reality, para. 2). At the

27 Through his association with the German Center for Nuclear Energy Documentation and FIZ Karlsruhe/Leibniz Institute for Information Infrastructure.

28 See Neto, (1991).

29 The role of phenomenology in underpinning social constructivism, at least through the influence of Alfred Schütz, is often glossed over (to the detriment of a fuller awareness of the way the various currents of phenomenological insight and method have crafted practice and molded understanding more generally).

heart of the matter is the notion that good scientific practice can be conducted such that we can know something about reality, while not propagating the view that “‘true’ means the same as ‘corresponds with a fact’” (Simple versions of the correspondence theory, para. 1).

The “scattered reality” which Hansson identifies in the LIS epistemology—information having lost meaningfulness due to vagueness—leads him to ignore libraries and documents (which to him do have meaning) in favor of an approach that is similar to Frohmann’s “documentary practices.” While, according to Hansson, Frohmann’s view attempts to distance itself from the information as “independent objective entity,” as well as any notion of an embedded code to be deciphered, or not deciphered, based upon cognitive ability, it does not reject the notion of document as capable of dealing with truth so much as, that when it is linked to fact, it loses much of the “inherent contingency” associated with the “materiality, institutional sites of production, social discipline and historicity” which called it into being (p. 104).

Quine is opportune, in the circumstances, when he says that

We learn mentalistic idioms, like other idioms, from elder speakers of our language, in distinctive and intersubjectively observable circumstances. Those circumstances differ from others in respect of the distribution, however inscrutable, of elementary physical states. As long as we use such an idiom in a form and in circumstances closely similar to the original ones, we communicate information; there is a fact of the matter. But our mentalistic idioms, like other idioms, go on growing and stretching by analogy. Factual content becomes meanwhile more tenuous and more elusive and can disappear altogether. (1977, p. 167)

The lesson Quine can teach here is that we need to search for our causal correlate in the right place. Hansson and Frohmann are right to see this as in the human relationships to information structure and the data (or documents) they organize. What seems to have been the difficult birth of hermeneutically-informed information science, attributable at least at one level to the difficulty positivistic science had with Hegel’s notion of “an objective notion of rationality,” more specifically that there *is* a telos at work, is in some senses, as Putnam (1983, p. 288) makes clear old news that keeps repeating itself. For Putnam, history versus science (historicism versus positivism) is not only a boring antinomy, it is somewhat neurotic as well. Putnam goes deeper to how relativism (“you know, it isn’t *true-for-me!*”) is constantly noticed for its “incoherence or inconsistency” while the self-same sins of positivism are, essentially, forgotten. *Contra* Putnam, I would maintain that they are, in fact, not forgotten in popular understanding of science—where so much of information science, at the library level, operates. Here they are actively maintained and perpetuated and this is among the most pressing reasons for actively disseminating hermeneutic methods—or orientations—within the philosophy of (information) science.

Hansson speaks to how

What is interesting, from a hermeneutic point of view, are the kinds of knowledge claims that are being produced in our search for understanding of the fundamental relations between the three foundational concepts of LIS and their practices. A shift has taken place from general scientific knowledge claims to a more diversified view of scientific knowledge. (p. 104)

While this is eminently reasonable, his further claim that “the break with the thought of universalism, historical consciousness and a subsequent cumulative growth of knowledge is something which fits well into the philosophical basis of hermeneutics” (p. 105) is a bridge too far in my view. It takes the hermeneutic concept well outside of its neutral territory. Hansson contextualizes the claim somewhat by emphasizing that

The “lost” basis for individual identity does not, however, need to be a reason for absolute solipsism. Instead the incapability to maintain common grounds for identity...or ideologies has produced opportunities to choose among a variety of communities and epistemological positions that bring possibilities to identify enough with the surrounding society to lead a meaningful life. (p. 105)

Putnam (1983, pp. 288-289) is on similar ground when he speaks of the analogy of a Roman Catholic epistemology when compared with a positivistic version. It is not nearly so neat for the positivist who wishes to debate on issues that fall flat to the ears of a well-formed alternative (such as the Roman Catholic one) to find that their emphatic demands for proof simply lead to the type of relativism to which they had originally intended their forceful argument to combat. Hansson brings up the notion of standpoint epistemologies and their relationship with a broadly hermeneutic view of social science practice, and while these are important to his argument, they cannot be canvassed further here, except to acknowledge that the place of power, experience and realism in discussions of epistemological priority is both a worthy and a vast undertaking.

Hansson has a deeply social approach (what Freire calls *conscientization*³⁰) and the question arises to what extent is hermeneutics deployed or appropriated for his critical project, and is it convincing in this exposition? Having softened us up with the promise of solving the problem of a lost individuality or a common identity, what does Hansson offer? He asks that we acknowledge that “hermeneutics are well suited for the integration of political elements in problem formulation and scientific work in that it emphasizes the interpretation of experience as one of its key issues” (p. 105). While this might be the case if we are dealing with deeply hegemonic political realities, does it apply elsewhere? Hansson continues

Experiences can, of course, be of both individual and collective character, and hermeneutic theory does not make any clear distinction between the two. The act of interpretation by the individual researcher does not in any way prescribe a similar individuality within the object of study, and once you recognize the collective experience as one being able to grasp and understand, there is no hindrance for political or conflict oriented research aiming at exposure of social inequalities. (p. 105)

30 “The process of developing a critical awareness of one’s social reality through reflection and action” (Freire Institute, 2015).

These are difficult sentences to unpack. Yes, experience can be mine or ours or yours and theirs. Hermeneutic theory, or at least Gadamer, emphasizes how we should better appreciate tradition (if only for our own playful purposes which show we have fully engaged with it in all its truth and misguidedness). Interpretative acts do not prescribe, that is they do not ask other researchers to act similarly. Recognizing collective experience (tradition) as having an autonomous *being-in-the-world*, as being this-thing-in-itself, should clear away any residual reticence to prioritize that which makes for *Dasein* to act in a morally relative way. While it is difficult, and Hansson's steps are not easy to follow, they are at least illustrative of the broad direction that his tradition wants to move interpretation in. If hermeneutic interpretation could have solved any one problem in the 20th century surely it would have been the trilemma of class politics, needless war and cynically-enforced poverty. When we speak to information as a side issue of science and allow our *interpretation* to fall on the side of a radical abstraction, I would argue that we commit a grave error in our role as intermediaries in a discourse of socially-based science. Adopting such a view should not be seen however as discounting a role for critiquing ideology in this intermediary role. I would argue that the critique forms an ancillary basis to interpretation and should not be confused with its core procedures.

Day's postmodern treatment of LIS is extremely convincing overall but, like many a votary, at times it becomes strident:

Beginning with a hermeneutics of the object, theory has lost its authority as the formal representation of the object, and method has lost its authority as the primary guarantor for the event of truth. Instead, objects, method, and theory are understood as no longer separable from social practice and specific affects that lie outside the traditional domains of "science." (1996, pp. 320-321)

Hansson claims this quote as support for the notion that here is the often overlooked role of social practice in LIS. The claims are not convincing beyond common sense or ordinary language arguments; it is not that they lack truthfulness or that they are not reasonably persuasive, it is that they are not genuinely epistemic in nature. Putnam describes these types of reductionist arguments as being anthropological (1983, p. 290). Reducing epistemic notions of meaning to non-epistemic notions of practice or affect is to ignore, as Putnam says, the "duality in our ideology that we are not going to get rid of" (p. 290). When we are faced with such a proposition we should return to the starting line, which is intellectual honesty, and accept that we have made a false start. This is better than continuing to run the race, to exhaust ourselves and to blame the umpire's judgement. This is not meant to be read as a criticism of Hansson but is much more a hermeneutic and personal observation. When object, theory and method are suborned such that they are linked, as a *consensus audacium*, then it is unremarkable that we may see their binding connection to social practice and scientific domains as entirely normal (or naturalized). Making an ontological reduction of this type is stating that "the presence of a property *explains* certain effects" (Putnam, p. 291)—in this case the presence of social practices explains (the inter-relationship of) objects, methods and theories. But is this epistemic

notion of explanation (as Putnam would have it) just what we are really dealing with in hermeneutic interpretation of the modern kind? If we have no conflicting, similar, difficult propositions to deal with can we then put hermeneutic method aside and resort to an ordinary language, common-sense explanation that is historically-informed? Such an approach is less concerned about truth-as-such or things in themselves as it is about the solidarity that emerges from what we disclose (I think this is what Hansson means when he discusses the difficulty he has with what he perceives to be Capurro's joining together of interpretation and hermeneutics). Vattimo takes this type of explanation to be "a form of objectivity very *sui generis*, capable of giving more force to the pragmatist notion of truth as that which works for us" (2011, p. 136). This goes, also, to "aesthetic rationality" or "hermeneutical rationality" and for Vattimo—"intellect can function as an organ of objective knowledge of the world, that is, be universally valid, only on the basis of the community that is established, in a manner ever historical and eventual, among the subjects who share the aesthetic experience" (p. 137).

There are no prizes for guessing that the alternative to deploying the hermeneutic technique of interspersing general cultural knowledge with sensitivity to authorial individuality³¹ is to look to critique (as does Hansson) as the primary means to "how one can philosophically justify and account for the particular kind of objectivity pertaining to the study of man" (Ramberg & Gjesdal, Critique of historical reason, para. 1). Do we take the ontological turn in hermeneutics which prioritizes the pre-scientific being in the world³² to its ultimate ends, those that see that we focus on history's fashioning of our being rather than our own engagement with ideology at work in our own lives, communities and times? These questions bring us back to Capurro's earlier referencing of the importance of Apel for information hermeneutics; they point to how "the ontological level of understanding must be completed by an appeal to a trans-historical dimension of validity" (Ramberg & Gjesdal, Critique of ideology, para. 3). I will conclude this discussion with a brief explanation of how we might conceptualize this.

Where hermeneutic understanding commences, according to Apel, is "with a 'confrontation' between two horizons, that, at the same time, already presuppose a *transcendental unity of interpretation* as the precondition for its possibility" (1980, p. 167). This awareness of differentiated intention, in scientific methodology, and in hermeneutical understanding for instance, helps to make a synthesis possible. As Apel makes clear, the synthesis is not so much at the point in which a language-game takes place but where human behavior might be made "intelligible" through the operation of principles, to wit, those that the actors themselves understand (p. 169). For Apel, where such rules (for the language-game

31 As Ramberg & Gjesdal (2005) describe Romantic hermeneutics in the tradition of Ast and Wolf.

32 "Understanding, in Heidegger's account is neither a method of reading nor the outcome of a willed and carefully conducted procedure of critical reflection. It is not something we consciously do or fail to do, but something we are. Understanding is a mode of being, and as such it is characteristic of human being, of *Dasein*. The pre-reflective way in which *Dasein* inhabits the world is itself of a hermeneutic nature." (Ramberg & Gjesdal, 2005, The ontological turn, para. 3).

or the behavior/form of life) already exist, the implicit orientation is that a relativist notion is involved and that this requires understanding to be made only within the terms of the language-game/behavior. The obvious examples are in the differences between common use and technical use of language (or information), and in how we conceptualize the methodological differences between natural (causal) and social (interpretive) sciences. To take Apel's argument a few steps further, where such discrepancies exist and we try to make them "intelligible" we need to deal with "explainable causal relationships" which are inclusive of both "unconscious ideas and constrained modes of behavior or between interests that are immanent to practice and official linguistic regulations *qua* 'institutional fictions'" (p. 170). It is then pertinent to see (and I would contend it is not to draw too long a bow in making the connection) what Apel calls "external relations," the relationship between "actions and concepts" as deeply relevant, if not actually easily analogous, towards how we bring ontological interpretation to bear on the information concept. While Apel is concerned to tease out the concrete nature of social and intellectual history, the action-concept *interpretandum* has something significant to say to us in our corner of the history of ideas. Information practices, just as Apel makes clear of his *interpretandum*, cannot be explained only through "causal hypotheses" but need to be understood also as "latent internal relations" (such as those in language games). The important point is that it is "the combination of quasi-causal explanation and deep-hermeneutic understanding (especially of unconscious teleological behavior that extends beyond actual linguistic usage [or information practice] and actual self-understanding of forms of life, which characterizes the *methodological* procedures of the *critique of ideology*" (Apel, p. 170).

I would argue, and I believe Capurro has argued over decades, that we need to be cognizant of the type of pragmatic, hermeneutically-informed approach to methodology in how we implement a philosophical approach to information science. The implication of Apel's claim associated with a critique of ideology—that there is a transcendental hermeneutic which eschews experience, proof, observation—is that motivational assumptions need to be, in principle, capable of being understood by "the form of life that is criticized." The public nature of critique (for our purposes, the "informational awareness"), fits with this by virtue of the ethical assumption that criticism will lead to "a deeper self-understanding" for the subject. The "ideological relationships" require, in Apel's formulation, greater acuity and perspicacity the further our *interpretandum* (actions-concepts) is removed from work (and the associated class/ideology/economic interest which is subsumable within this relationship). Arguably, for information science, the Marxian ideological concerns which motivated Apel can be substituted with forms of domain knowledge to obtain a similar result. The further we remove the subject of information practice from functional concerns, the further we will experience the same confrontation with the "ideal function of the language game" (p. 170), be it to organize or measure information or facilitate its creation, dissemination or retrieval. We will need to accommodate the "limitations upon rational communication and social 'association'" that are imposed "by the authoritarian repressions and tabooing of words and actions...the ideological fixations of the self-alienation of socialized human beings," and we will need to acknowledge their equal place within "a hermeneutical ideal

of an unrestricted understanding” (pp. 170-171). It is only when we approach hermeneutic enlightenment as more than the fusion of our own horizon with tradition, when we include a critique of ideology within its ambit (but not its orbit), that we are likely to realize the best of all possibilities: a pluralistic understanding of the language-immersed interpretative schema which we inherit and contribute to and a well-formed objectivistic critique which is open to the contingent and practical requirements of information using communities. Apel reminds us how “the ideal of unlimited communication which is relevant in practical terms for the interacting community” provides a methodological fillip that helps to dispel the problem which has been, and continues to be, a straw man within the information disciplines: the notion that “contemplation of the historically accomplished application of interpretation must *eo ipso* play off a subjectively actualizing understanding against a historical, objective understanding of tradition” (p. 124). We are, in fact, not bound to ignore the intentions that come with the communication of information and their origins in linguistic, scientific and ethical spheres. The hermeneutic approach argues that if we wish to truly understand the ontology of a given information practice or domain these factors should be prominent in our deliberations.

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The Epistemological Maturity of Information Science and the Debate Around Paradigms

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Abstract

Rafael Capurro, in a paper entitled *Epistemologia e Ciência da Informação* (2003), presented at the V ENANCIB – Encontro Nacional de Pesquisa em Pós-Graduação em Ciência da Informação (Belo Horizonte, Brazil) put forward an innovative proposal for information science, which defended the existence of four paradigms and condensed and illustrated the evolution of documentation/information science by Paul Otlet. This contribution inspired the authors of this text—who had already formulated an initial approach that established three phases (syncretic, custodial and post-custodial), while pursuing a different path and situated in the Portuguese context, to observe two paradigms: the custodial, historicist, patrimonial and technical (between the 18th and mid-20th century) and the post-custodial, informational and scientific (from the mid-20th century). This paper aims to establish a constructive and critical confrontation of Capurro and Izquierdo Arroyo's proposals that are rooted in different but complementary epistemological conceptions.

1 The Scientificity, Paradigms and Evolution of a Disciplinary Field

Has Information Science (IS) the theoretical and methodological arsenal to investigate issues that greatly exceed the technical dimension of the descriptive and classificatory instruments facilitating access and use? In Rafael Capurro's work there are specific contributions that justify this question, and the question makes perfect sense because when we introduce it in the IS domain, we are not using a univocal designation.

Moreover, there are at least two different perspectives that claim and justify this question. The first, that is cumulative or fragmented, sees the area of documentation/information as constituted (until the rattle of Modernity) by different disciplines, which emerged simultaneously and sequentially and had affinities as well as alleged differences with each other: archivistics, librarianship, museum studies, documentation and information science (IS)

(which appeared in the United States at the dawn of the information technology revolution, and was, according to Manuel Castells, associated with the computer and with “informationalism”). Given this perspective, each discipline would have its own paradigm, principles, methods, objectives and specific justification; and IS would result from the advances in automated information processing (initially calculus, and then statistics and databases) with the corresponding features of fast, effective and efficient retrieval. Notwithstanding this profile—striking due to the extraordinary technological development—one cannot, however, see in this IS an inquisitive capacity (conceptual and methodological) that goes well beyond the instrumental. Despite this, its tendentious symbiosis with intersciences such as information systems, and interdisciplines like computer science¹ is understandable. For its historical, educational and practical features, this cumulative or fragmentary perspective can be connoted with the historicist, custodial, patrimonial and technical paradigm (Silva & Ribeiro, 2011).

The other perspective, we refer to as evolutionary (and fully consistent with the post-custodial, informational and scientific paradigm (Silva & Ribeiro, 2011), finds in the full range of disciplines related to the document and to information a common ground which, in its depth and strength, generates a transdisciplinary dynamic. This enables the “mixing” of disciplines in order to originate a new disciplinary body, which finally shows traces of indisputable scientificity. We believe this instance has to be IS, which synthesises two natural dynamics: the transdisciplinary and the interdisciplinary, and accepts the transdisciplinarity of the IS object as obvious, and thus attracts the interdisciplinary confluence of various sciences and knowledges. We advance the view, however, that this interdisciplinary vocation is not comparable with the unique and inaccurate status of interdisciplinarity as supported by many authors, representative of the cumulative or fragmentary perspective. As Olga Pombo (2004) well systematised, on a strictly interdisciplinary plan, different disciplines converge around issues that matter to all and exchange experiences, theories and methods in order to find a resolution and a shared understanding of these issues. This working together does not, however, imply a loss of identity or autonomy of the disciplines involved; otherwise, transdisciplinarity implies a series of common problems with similar strategies and approaches and permeability to inter-influences or could mean that disciplinary fusion would be unavoidable. It is therefore very different to conceive IS as simply one of several disciplines guided only by an interdisciplinary relationship or a new epistemological step, one that results from the merging of previous disciplines and the application of a permanent active approach to a wide spectrum of disciplines. Such an approach might be said to have two strategic and well-defined priorities: that strand which is communication sciences (with a view to consolidating the interdiscipline of communication and information sciences) and the strand that deals more generally with social sciences and humanities. Adopting an evolutionary perspective and taking on a post-custodial, informational and scientific paradigm has strong implications for the investigative and

1 A confirmed trend, with little room for questioning, in the current universe of iSchools/university organisation that congregates schools of “Information”: <http://ischools.org> (Accessed on 15 June 2015).

pedagogical realms. What is more—according to the proposal we have been developing in counterpoint to the one formulated by Capurro in his paper *Epistemologia e Ciência da Informação* (2003)—to the two mentioned perspectives correspond two types of paradigm.

If we took into account, for example, the epistemological proposal of Michel Foucault (1991) for social sciences and humanities (that is, that their discursive formations create boundaries for individuals and for the scholarly projects they are involved in) it would be legitimate to ask ourselves whether information science, enrolled as a discipline in that field and possibly having some epistemic thickness would have epistemological breadth to welcome a useful discussion of paradigms. We believe that a good argument can be made for the lack of such epistemological breadth and that this can be based in both the lack of a truly scientific dynamics in how information science operates and to a demonstrable excess of focus on common sense and practicality.

It is sufficient to simply point out that our way is another means, to bring to our professional field the operative concept of paradigm specifically because we are committed to an approach to our field of work that is explicitly scientific (Silva & Ribeiro, 2002; Silva, 2006). To this end, we resort to a methodological proposal, which, although little known and debated, is essential to the perspective we have been building—the qualitative and quadrupole research specifically designed for the social sciences (general and applied) by the Belgians Paul De Bruyne, Herman Jacques and Marc Schoutheete (De Bruyne, Jacques & Schoutheete, 1974), according to which the scientific condition is not a unique attribute of Natural Sciences, but it is extensive to the scientific activity not matter what type of phenomena and problems on focusing. We refer to it here to show that the paradigm proposal, opposed to the proposals of Izquierdo Arroyo and Rafael Capurro, is not void-based and, on the contrary, has epistemological foundations.

2 The positions of Izquierdo Arroyo and Capurro

Moving on, let us now look at the analysis of the proposals of paradigms, which permit reflection on the scientific evolution and maturation of the field of documentation/information.

In a lengthy study on Paul Otlet's contributions to IS, entitled *La Organización documental del conocimiento* (1995), José Maria Izquierdo Arroyo raises three paradigms from the insight of the Belgian visionary, founder of *Mundaneum* and author of the *Traité de la Documentation: le livre sur le livre* (1934) (Levie, 2006), namely: the library or pre-documentary paradigm (LP), the current paradigm or "Normal Science of Documentation" (DP), and the semiotic-documentary or interdocumental paradigm (SDP). These three paradigms are distinguished by Izquierdo Arroyo according to their historical sequence and in relation to seven phases of conventional research:

0 Physical-topological preservation of documents; 1st Relevant and comprehensive collection of documents; 2nd Reading each document of the 1st; 3rd Internal segmentation of each document, producing citation-records (textual or condensed) in a file; 4th Outlining of segments

taken from 3rd; 5th Collation and comparison of segments and/or theoretical frameworks derived from their synthesis (3rd/ 4th); 6th Creativity: establishing new relationships, combinations, etc., for the production of new documents from 5th” (Izquierdo Arroyo, 1995, pp. 19-20). (Translation by Ribeiro & Silva).

For Izquierdo Arroyo, the first paradigm (LP) corresponds to the “Documentation zero degree” and only includes “a sorting of documents in the ‘physical space’ (or ‘documentary space’), while the other two paradigms act on the idea of ‘documental space’”; the second paradigm (DP), classified as Documental Linguistics, only accounts for the documentalist’s first phase and leaves the other tasks to the researcher; and the third, or new paradigm, proposes that the 2nd to 5th phases (and also possibly and somehow the 6th) be developed by the new documentalist, thus having a “continuous documental space” (Izquierdo Arroyo, 1995, pp. 20-21).

Although Izquierdo Arroyo does not take the time to explain the operative concept of paradigm, it is apparent, firstly, that in his work he thoroughly analyses the perspective of Paul Otlet, who is understood to be the founder of a science that is entirely different from the librarianship and bibliology of the 19th century. Considering this, and as a second note, the creation and institutionalisation of the “Normal Science of Documentation” (it seems reasonable to assume that the adjective “normal” is used in a very similar way as it was used by Thomas Kuhn) is clearly a new scientific-professional paradigm even if it is limited in its effective scientificity. Thirdly and finally, Izquierdo Arroyo takes the full correspondence between the research activity (science) and the activity of the modern documentalist, who is able to take the visionary ideas of Otlet to their logical conclusion (Otlet already knew how to distinguish between documentation and information and he had the foresight to see how hyperdocumentation, a great deal sooner than the concept of hypertext had actually arisen). We have in the contribution of Izquierdo Arroyo the presence of paradigms that operate within the exclusive and dominant achievement of Paul Otlet. But in spite of that, the innovative implications of Otlet’s thinking, (legitimizing, as they do, an inclusive vision in one disciplinary field of studies on archives, libraries, documentation and museum centres, and the possible adoption of description and information retrieval techniques), they do not clearly reflect the SDP content—semiotic-documentary paradigm or interdocumental paradigm—which can be seen as the third evolution in the staged progression of documentation science.

In *Epistemologia e Ciência da Informação*, Rafael Capurro argues that documentation science is a preceding discipline much like librarianship; he applies the concept of paradigm to IS, and, at this point, it is very important to understand how he introduces this operative concept of Kuhn:

As the word paradigm indicates—from the Greek *paradeigma* = exemplar, show (*déiknumi*) something with a reference (*pará*) to another—the paradigm is a model that allows us to see something in analogy with another thing. Like any analogy, there comes a time when its limits are evident, producing a crisis or, like in scientific theories, a “scientific revolution,” in which we drift from the “normal science” to a “revolutionary” period, and then to a new paradigm. Kuhn identifies the existence of a “pre-paradigmatic situation” in which scientific

progress is not made, as would be the case of the social sciences, and also information science. David Ellis is right when, taking on the Margaret Masterman's critique of Kuhn, he shows that both the situation of dualism and the multiplicity of paradigms are not necessarily signs of a pre-paradigmatic scientific state, rather characteristics of normal science (Ellis, 1992). In other words, the dichotomy between "normal science" and "revolutionary period" is too schematic if we consider that the crises, ruptures, errors, misunderstandings, misconceptions, analogies, empirical data, concepts, hypotheses, doubts, setbacks and dead-end searches, as well as institutions, instruments, visions and passions that support, so to say, the cognitive processes, constitute the very core of it, partly latent and partly explicit, of the entire scientific field, because success or the prevalence of a scientific paradigm is always partly constrained by the social structures and the synergy factors, including events outside the scientific world, the multicausal effect of which is not only difficult to predict, but also to analyse *a posteriori*. (Capurro, 2003, Introducción, para. 3). (Translation by Ribeiro & Silva).

Capurro's thesis, in his own words, is that IS arises in the mid-20th century with a physical paradigm confronted by an idealistic and individualistic approach, which, in turn, was replaced by a pragmatic and social paradigm that Jesse Shera and his collaborator Margaret Egan alternatively coined as "social epistemology" (Shera, 1961; Shera, 1970).

Looking at them in more detail and starting with the physical paradigm, we understand it to be rooted in the "Mathematical Theory of Information" by Claude Shannon and Warren Weaver (1948) and the Cybernetics of Norbert Wiener (1951), establishing that there is something, a physical object that a sender transmits to a receiver. This paradigm, applied to the field of IS, excludes "nothing less than the active role of the knowing subject or, more concretely, the user, in the recovery process of scientific information, in particular, as well as that of all the information and communicative process in general. It is not by chance that this theory refers to a 'receptor' (receiver) of the message, and it is not surprising that the limits of this metaphor have led to the opposite paradigm, the cognitive" (Capurro, 2003, 1) O paradigma físico [The physical paradigm]). This is a paradigm proposed by Bertram C. Brookes (1980) and influenced by Popper's ontology of the three worlds (physical, consciousness or psychic states and the intellectual content of books and documents, in particular of scientific theories):

Brookes subjectivises, so to speak, this model, in which the intellectual contents form a sort of a network that exists only in cognitive or mental spaces, and calls these contents "objective information." Given its potential cognitive nature for a knowing subject, it is not surprising that Peter Ingwersen tries to integrate in a dynamic way the lost object of that cognitive paradigm without a knowing subject, which is the user (Ingwersen, 1992, 1995, 1999). But despite this social emphasis, his perspective remains cognitive in the sense that we try to find out how the informative processes transform, or they don't, the user, understood, first, as knowing subject having the "mental models" of the "exterior world" that are transformed during the informational process. Ingwersen takes elements of the theory of "anomalous state of knowledge"—ASK, developed by Nicholas Belkin and others (Belkin 1980; Belkin, Oddy, Brooks, 1982). This theory assumes that the pursuit of information has its origin in "need" that arises when there is the anomalous state of knowledge, in which knowledge within the reach of the user, to solve the problem, is not enough. (Capurro, 2003, El paradigma cognitivo, para.3-4). (Translation by Ribeiro & Silva).

The third paradigm—pragmatic and social—is a reaction against the cognitive, and argues against the idea of considering information disconnected from the user who is conditioned by the world where he really lives and acts. Capurro's criticism of the cognitive paradigm centres on how it tends toward the idealistic and asocial; he focuses on a Heideggerian hermeneutics that seeks to unravel the assumptions of human existence and links this to the essentials of a Critical Theory (in the tradition of Karl-Otto Apel and Jürgen Habermas). In so doing Capurro postulates that both contributions provide a possible epistemological framework for IS. This is intimately connected with the social-epistemological paradigm or "domain analysis" (Hjørland & Albrechtsen, 1995) in which the study of cognitive fields is linked to discourse communities, i.e., the different social and labour groups that constitute a modern society:

A practical consequence of this paradigm is to abandon the pursuit of an ideal language to represent knowledge or an ideal algorithm to shape the retrieval of information to which the physical and the cognitive paradigm aspire. A bibliographical database or of full texts is polysemic or, as we might also call it, eminently polyphonic. The terms of a lexicon are not something definitely fixed. The object of information science is the study of relationships between discourses, areas of knowledge and documents in relation to possible perspectives or points of access of different communities of users (Hjørland, 2003). In other words, this means an integration of the isolationist and individualistic perspective of the cognitive paradigm within a social context in which different communities develop their selection criteria and relevance, (Capurro, 2003, El paradigma social, para. 4). (Translation by Ribeiro & Silva).

The impact that Capurro's proposal had on the IS community in Brazil was quick to manifest itself, and in 2005, the Brazilian magazine *Perspectivas em Ciência da Informação* (no. 2, July-Dec.), edited by the School of Information Science at the Federal University of Minas Gerais (Belo Horizonte), published an article by Renato Fabiano Matheus that examined Capurro's overall contribution to IS. The article is interesting and quoted here because it contains an interpretation of Capurro's paradigms proposal. In his reading Renato Matheus underlines that Capurro himself acknowledges the problem and recognizes that his analysis of paradigms is rather schematic, nevertheless it appears repeatedly in his work:

The problem resides in that an analysis based on *scientific paradigms*—an expression made popular by Thomas Kuhn (1975) in his analysis of scientific knowledge in the natural sciences—highlights competition among theories and research groups, where the competing paradigms are considered mutually exclusive. Taking into account Capurro's approach to the specific area of Information Science, we could go as far as to say that competing paradigms have points of contact, but not that they are complementary. (Matheus, 2005, p. 159). (Translation by Ribeiro & Silva).

Such a position contradicts, according to Renato Matheus, the need for interdisciplinary collaboration in IS. Furthermore, in order to solve this dilemma he suggests the abandonment of the term paradigm and its reinterpretation through the term *approach*:

Under this view, complementary approaches have emerged historically with the broadening of research interests in IS, a broadening which focused on different objects over time. Following this line of reasoning, it is possible to associate objects of study to each of the approaches (previously paradigms). The physical approach would thus be associated with technology and information systems; the cognitive approach with the needs of users and their interactions with the systems; and the social approach would study the users and their interactions with the systems, as well as different social groups and contexts, within institutions and communities. Thus, it would be possible to understand that the previous approaches continue to be essential to the study of problems associated with information, based on the different aspects analysed by each one. (Matheus, 2005, p. 159). (Translation by Ribeiro & Silva).

Renato Matheus adapts Capurro's proposal to the complex universe of social sciences and the specificity of the IS field, and contradicts Kuhn's thesis—which Capurro partly follows—of the opposition between paradigms and the transition between them through disruption, in other words, via a process of scientific revolution. Consequently, there is a sense of deviation from the Kuhnian “paradigm” and the introduction of the approach concept implies that different authors are able to work the same object through different perspectives and angles without changing common theoretical and methodological foundations. This means that several approaches can fit within the same paradigm and to have a revolutionary paradigm shift there has to be a new theoretical and methodological, as well as epistemological, design which confronts the resistance of older scientists and forces them to change or permit change. However, and this point is relevant, the paradigmatic transition observed or postulated by Kuhn in “hard” sciences can occur differently in “soft” sciences, and the previous paradigm can coexist with the new paradigm. It is not clear that there is a revolution and to have a paradigm shift there has to be much more than the mere appearance of new approaches and theories (as Matheus deduced in his reading of Capurro). Additionally, these theories should not affect the principles and epistemological foundations on which certain scientific or business communities were formed or taught for a long period of time and over one or more generations.

We are therefore in the presence of essential aspects that will help us to introduce the alternative proposal that we have been developing since 1999 when we first published *Arquivística: teoria e prática de uma ciência da informação*. At the time, we distinguished three identifiable phases in the evolution of archival practice and the appearance and transmutation of the archival discipline: (1) the syncretic and custodial phase, (2) the technical and custodial phase, and (3) the scientific and post-custodial phase (Silva, Ribeiro, Ramos & Real, 1999, p. 210).

3 The paradigms in IS: an alternative proposal

Looking to, above all, release the epistemological debate around the paradigms we have identified in the field of IS, we would like to, at this point, present an alternative proposal in which we state and feature two paradigms. One of them is related to the “cumulative” or

“fragmented” perspective and the other with the “evolutionary” perspective, which were referred to at the beginning of this text.

These two paradigms show ways of seeing, thinking and acting, that are reflected not only in the activity of professionals, but also in the training models behind them and in the theoretical and applied research that is developed in the documentation/information field.

3.1 The historicist, custodial, patrimonial and technical paradigm

The characteristic features of the historicist, custodial, patrimonial and technical paradigm have been outlined by the authors of this text in jointly developed (Silva & Ribeiro, 2010) as well as individual papers (Silva, 2006; Ribeiro, 2008). Accordingly, we will provide a summarised statement of such characterisation, as follows:

- overvaluation of custody, conservation and restoration of support, as a primary duty of the professional activities of archivists and librarians;
- emphasis on memory as a legitimising source of the Nation-State and culture as an identitary reinforcement of the same State and respective People, thus having nationalist ideologies as support;
- identification of Archives and Library’s custodial and public mission/service with the preservation of “erudite” culture as a more or less explicit opposition to the entertaining and popular “mass” culture;
- growing importance of access to the “content” of documents by way of search mechanisms (guides, inventories, catalogues and indexes) and classification and indexing of models, greatly in debt to the important technician and normative legacy of Paul Otlet and Henri La Fontaine, both of whom promoted the development of documentation/information centres and services (particularly in the scientific and technical areas) that were less devoted to custody and more to the dissemination of information;
- distinction, at the vocational training level, between archivists and librarians, which arises from the creation and development of archives and library services/institutions, thus promoting a strong corporate spirit that fosters confusion between profession and science (the misleading idea which has been implemented is that the professions of archivist, librarian and documentalist generate naturally autonomous scientific disciplines such as archives, library and documentation).

In fact, regarding the subject areas of archives, library and documentation, professional practice has greatly dominated its teaching and research activities. Strong evidence of this domination resides in the fact that in several countries (the USA, the UK and others) professional associations have the power to produce guidelines for the development of the curricula of universities. The work of librarians, archivists and documentalists has been based on a set of technical and mandatory guidelines that are more devoted to the organisation and representation of information for access purposes than to the knowledge

of generator contexts of such information and their communication in accordance with the needs of users and information behaviour.

This professional practice, which is not sustained in a consistent theoretical and methodological foundation, is easily understood and justified if we analyse how its agents have been trained. In most cases, the training/education of library and archive professionals began with experience, so that in the 19th century, libraries and national archives were the focal point of vocational training. However, besides these ideal places, schools of a classical matrix, created to train archivists-paleographers and erudite librarians, also began to emerge. The most emblematic example of this was the case of the *École Nationale des Chartes* that was established in Paris in 1821. The aim of these type of courses was to train specialised personnel, which was necessary to treat the documentation transferred to the state archives and libraries as a result of nationalisations made after the liberal revolutions that took place in Europe following the French model. The creation of archives, libraries and public museums, instituted with the mission to preserve the national memory, was a sign of a new reality, which had been consolidated over the 19th and 20th centuries, and is a clear expression of the paradigmatic view that we call “historicist, custodial and patrimonial”.

Academic training took a long time to be implemented—before the 40s of the 20th century we cannot truly consider university education as being established—and the courses offered by the associations of librarians and archivists were the most common training option (Ribeiro, 2006). From the turn of the century, by effect of the socio-economic conditions generated by the second and third waves of industrialisation, of the bureaucratic complexity of the administrations and of technological and scientific developments, the French custodial, historicist and patrimonial model gained new contours. Thus a deepening of technical view and a growing autonomy of archivistics and librarianship in relation to history arose and asserted themselves as autonomous disciplines.

This growth of the technical side of information organisations and information processing naturally had effects on professional activities; following this major concerns with access emerged, along with concerns relating to the descriptive standards and the necessary search mechanisms that were needed to meet the requirements of users who sought to consult documents preserved by libraries and archives.

Within the traditional paradigm it is worth remaining cognisant of how the reduced or non-existing role of research remains one of its dominant characteristics. Moreover, how practice prevails over the study and the production of scientific knowledge, founded on a systematic and established research activity, leads us to advance the view that in this paradigm there is a predominance of technics over science, leading to an overvaluing of professional activities (make/implement) when compared to the activities associated with research (know/interpret).

3.2 The post-custodial, informational and scientific paradigm

From the mid-20th century, social, economic, cultural and, above all, technological conditions accentuated the crisis that the traditional paradigm was already manifesting. These changes jeopardised its essential foundations and created the conditions that allowed for the emergence of a new paradigm, which we call post-custodial, informational and scientific. In order to be able to contrast this emerging paradigm with the previous one, we need to look at its key features, these include the:

- enhancement of information as a human and social phenomenon and seeing its materialisation in any *medium* (document) as an epiphenomenon;
- verification of a natural and unceasing informational dynamism, opposed to the documental “immobility”, translated the previous by the binomial “creation-natural selection *versus* access-use”, and the further by the contrast of ephemeral *versus* permanent;
- top priority given to information access for all, in well-defined and transparent conditions, because only public access justifies and legitimises custody and preservation;
- change of the current theoretical and practical framework of disciplinary and professional activity by a different stance, in line with the dynamic world of the social sciences and the associated commitment to understanding the social and the cultural (with obvious implications in the training models of information professionals);
- imperative to question, understand and explain/know social information through theoretical and scientific models that are increasingly demanding and effective rather than through an apparently neutral empirical practice composed of a set of uniform and uncritical ways/rules to carry out procedures which are related to creation, classification, description and retrieval;
- replacement of instrumental logic, reflected in the expressions “records management” and “information management,” by a scientific and comprehensive logic of information for management, *i.e.*, social information is implicated in any entity or organisation management process and, therefore, the informational practices stem—and are articulated with—the conceptions and practices of managers and actors and with the organisational structure and culture. The information scientist must understand the meaning of the operating practices and present, within certain theoretical models, the more appropriate (retro or) prospective solutions (Silva & Ribeiro, 2010, p. 41).

Naturally, under this new paradigm, professional practice, teaching and research, gain new dimensions and different approaches, which are dictated by the theoretical and methodological foundation that must be above and beyond the professional, academic and scientific activity.

The theoretical and methodological approaches that we propose for an integrated, systemic and transdisciplinary IS, in the broad context of social and human sciences, have been explained in several of our works, particularly in an essay published over a decade ago (Silva & Ribeiro, 2002), which founded a new training model in a Portuguese

university. However, when considering a synoptic framework it must be noted that at a theoretical level we express preference for Systemic Theory which has its origins in studies by Ludwig von Bertalanffy. He embraces a holistic vision which fits well with the complex and diffuse universe of information. From a methodological point of view, we consider the quadrupole research method, designed by Paul de Bruyne, Jacques Herman and Marc de Schoutheete (1974), as the most appropriate device for the needs of the information knowledge phenomenality as an integral element of human and social phenomena, since it is not restricted to a purely instrumental and practical view with more or fewer adjustments by all social scientists. Its investigative dynamic results from an interaction between four poles—epistemological, theoretical, technical and morphological—which grants to the researcher a permanent projection of interpretive paradigms, theories and models in the operation of research and presentation of results (Lessard-Hébert, Goyette & Boutin, 1994).

Supported by a new training model that, in turn, also assumes the abovementioned reasons, we believe that it is reasonable to assert that professional practice is no longer based on the uncritical application of a set of technical rules and “recipes” that are more or less standardised. It has been replaced by reference theories, methodologies and a more interpretative and less descriptive attitude, which studies and manages information, thus changing the professional way of acting and becoming a mediator with the aim to meet the information needs of users.

Considering information as an object of work and study requires looking at this phenomenon in a completely different way than has been done so far with the document (the physical unit that is classified, described and placed somewhere with an attributed reference for subsequent location) because attention is no longer only directed to the obvious material and has to be taken into account to generate any and all of the informational act. Perceiving information implies, first of all, to know its production context, which is something prior to its material recording in a physical medium. And it also implies knowing the use which has been or is given to this information, that is, who its users are, to what end they use it, how they search it and how often, etc.

So, to understand information according to the new paradigm implies an integrated approach in that it does not make sense to organise information services with a purely instrumental purpose. The way forward is not to artificially separate the various components of a whole—information in an organisational context is generated by various actors who operate in this same context, either in the administrative or in the technical or scientific field—but to design information systems where the functional aspect is realised in structuring services that aggregate all manifestations of the informational phenomenon.

In this new paradigmatic view, the issue of training/education is another fundamental aspect (Silva & Ribeiro 2003; Silva & Ribeiro, 2004; Ribeiro, 2006; Ribeiro, 2007). We believe it is important to distinguish two types of theoretical and practical intervention; one is an essentially technical matrix—training at the technical and professional level, which can be provided by vocational schools or secondary schools—and another at a more comprehensive and explanatory level—a know-how based on the study of and on mono-, inter- and multidisciplinary research, which takes the social sciences as a central axis

and derivation point for crossing with other scientific disciplines that must be framed on university and polytechnic institutions.

Likewise, higher education (beginning with bachelors and progressing to masters and PhD courses) should follow a curriculum *design* that aims for the annulment of the artificial separation between archives and libraries/documentation, and in this unitary perspective create synthetic links with Information Systems. Recognising the significant responsibilities of forging these linkages across information sciences and professions is critical.

This training model, based on theoretical and methodological assumptions that underpin IS, and our longstanding research inquiry, (Silva & Ribeiro, 2002) has been put in place at the University of Porto in Portugal, through the bachelor's degree in information science. The degree brings together a set of courses that ensures both a unitary-theoretical and methodological component, as applied characteristics of this area of knowledge, with their particular specificities, that are core components of the pedagogy. The curriculum is necessarily open to interdisciplinarity and establishes a more or less close relation with other fields, including computer science, language sciences, philosophy, history and social sciences (Ribeiro, 2007).

Finally, and to close this triangulation, it is important to consider the research vector, which is particularly relevant in the scientific and informational paradigm and is always in line with the theoretical basis and the methodological approach (Silva & Ribeiro, 2002) referred to earlier. The existence of a theoretical-methodological support is, in itself, an essential difference from the traditional paradigm in which theory and method are absent and/or are confused with technical activities. Given a scientific perspective, to investigate is no longer a synonym of describing by using uncritically applied standards and comes to mean to know, to analyse, to interpret and to explain the informational reality that is the object of study. Although research in IS is essentially an applied activity aimed at developing solutions to everyday problems, the obtained results are neither less scientific nor less rigorous because of this.

The creation of research centres, where it is possible to develop research projects, form inter—and multidisciplinary—teams, promote the publication of research results and implement doctoral programmes that, through the preparation of theses, promote and foster accurate scientific work, is a prerequisite for the consolidation of this emerging paradigm and the implementation of IS in the academic field. The institutionalisation of science is one of the aspects which greatly contributes to peer recognition and, at this level, the paradigm shift is also becoming increasingly evident, as IS has, gradually, explained its unique ability to contribute to the academy and thereby obtained a status which enhances its scientific credibility.

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A Methodology for Studying Knowledge Creation in Organizational Settings: A Phenomenological Viewpoint

Anna Suorsa and Maija-Leena Huotari

Abstract

Recent research of knowledge creation suggests, that knowledge is created in interaction, especially in the events of interaction between two or more persons. Research has indicated, that the atmosphere and form of these events is crucial—they determine if knowledge is created or not. While the importance of the event of interaction has been acknowledged, it has not, thus far, been the focus of empirical studies. The aim of this chapter is to present a theoretically consistent methodology for increasing understanding and examining empirically knowledge creation in organizational settings. The line of argumentation is based on the phenomenological viewpoint in which the conceptualization of human Being by Martin Heidegger is combined with the hermeneutic ideas of communication and interaction of Hans-Georg Gadamer. A focus is placed on identifying the implications of the proposed hermeneutic phenomenological viewpoint to the empirical study of knowledge creation as well as appropriate methods with which to do so. As a result, a methodology is presented for examining the knowledge creating interaction as an experience and an event (the empirical study remaining beyond the scope of this chapter). As the phenomenon of knowledge creation is fundamental for organizations to contribute to the positive development of society, it is important to test the methodology and its explanatory power in empirical studies in different types of organizational environments.

Since the 1990s, worklife in organizations of all kinds has become more and more knowledge-based, this has increased the importance of collaborating and conducting work tasks in teams (see Choo, 1998). Consequently, the significance of creating new knowledge has been emphasized. This, in turn, has increased the need for rigorous research on these phenomena. In the field of Knowledge Management (KM) a vast amount of research on knowledge creation has been conducted, initiated by the ideas of Nonaka and his colleagues (Nonaka, 1994; Nonaka and Takeuchi 1995), and followed by critical views presented for example by Gourlay (1996), Cook and Brown (1999), and Tsoukas (2009). However, along

with this development, the whole meaning of the study of knowledge creation including the idea of KM as a sub-field of Library and Information Studies (LIS) has been questioned (see Wilson, 2002, 2005). In this chapter we will contribute to this discussion by examining the premises of understanding and studying knowledge creation as an organizational phenomenon in the field of LIS.

A general premise of recent research is that knowledge is created in interaction. Furthermore, it is indicated that in organizations knowledge is typically created in the events of interaction between two or more persons. The atmosphere and form of these events is claimed to be crucial—they determine if knowledge is created or not. However, despite of acknowledging the importance of the event of interaction, thus far it has not been in the center of examination in empirical studies in particular.

In this chapter our aim is to present a methodology for studying knowledge creation in organizational settings in a theoretically coherent manner, though the empirical study is beyond the scope of this chapter. We base our examination on the phenomenological viewpoint in which the conceptualization of human being by Martin Heidegger (1985) is combined with the hermeneutic ideas of communication by Hans-Georg Gadamer (1999a, 1999b, 1999c, 1999d; see also Suorsa & Huotari 2014a; Suorsa, 2015). We claim that phenomenology offers a thoroughly explicated perspective for understanding and getting hold of the social, material and practical elements in a knowledge creating situation. These elements are not acknowledged in the cognitively oriented research (Yanow & Tsoukas 2009, p. 1342). In the field of LIS, phenomenology has been used to specify some central questions in LIS philosophy in general for example by Jones (2008) and Budd (2005) and to understand some socially constructed phenomena as presented for example by Epperson and Zemel (2008) and Savolainen (2007) (see also Case, 2012). In the field of KM phenomenology has been applied more rarely until recently (see e.g. Värlander, 2008; Tsoukas 2009; Suorsa & Huotari 2014a; Suorsa, 2015). Our examination is based on reading the original and most essential texts on the topical area of hermeneutical interaction by Gadamer (1999a, 1999b, 1999c, 1999d) and early Heidegger (1927/2006). In our view this is relevant in this context because the philosophy of being, outlined by Heidegger (1927/2006), has substantially influenced Gadamer's view of interaction (see e.g. Weinsheimer, 1985; Lammi, 1991; Tietz, 2007; Sallis, 2007).

Line of Argumentation

We will use theoretical argumentation to present a methodology, namely the ontology and the epistemology (including appropriate methods), to be applied in empirical studies of knowledge creation. At first, we will explicate on the ontological level, how organizational knowledge creation as a phenomenon can be understood as the object of examination and study with hermeneutic phenomenology. After this we will proceed at the epistemological level to ask how we can gain information on the above-named phenomenon. Thus, as we

solve the problem of the object of study on an ontological level, we can proceed to explore the epistemological aspects this solution arouses.

Our line of argumentation in this chapter is as follows:

1. The research of knowledge creation often mixes the cognitive view of the human being with the hermeneutic view of the interaction in a problematic way (see Suorsa & Huotari 2014a; Suorsa, 2015). These problems can be avoided by using hermeneutic phenomenology: By starting with the definition of a human being as a phenomenological subject (Heidegger, 1927/1985), the definition of interaction can be coherently conceptualized with the hermeneutics provided by Hans-Georg Gadamer.
2. Thus, knowledge creation can be defined as a process, where both experiences of the participants involved in the interactive event and the event itself are the foci of examination. This sets some prerequisites for empirical studies on knowledge creation in organizational settings.
3. This leads us to consider relevant empirical research methods for studying knowledge creation as a phenomenon that are both experiential and spatial/temporal in nature. The range of appropriate qualitative methods is wide for examining human experience and action and interaction.
4. Knowledge creation as an experience and especially as an event is tightly connected with other information and knowledge processes, and should be studied simultaneously with these processes, to gain a more thorough understanding of the phenomenon of how new knowledge is created.
5. Our premise is, that as the phenomenon of knowledge creation has a meaning of its own, contrary to typical studies, it should not be reduced to distinctive knowledge and related information processes.
6. With this kind of a viewpoint, the concerns are irrelevant about whether it is knowledge that is created in an interactive event, or even information that is shared and used in this type of interaction.

All in all, the study of interaction should be placed at the center of empirical studies of organizational knowledge creation. In this chapter we will explicate how this can be done.

Ontological Level: Knowledge Creation and Hermeneutic Phenomenology

Knowledge creation is usually defined as a phenomenon connected with different forms of knowledge (e.g. Nonaka, 1994; Cook & Brown, 1999; Gourlay, 2006) and interaction (Cook & Brown, 1999; Tsoukas, 2009; Morner & von Krogh, 2009). Thus, knowledge creation is defined simultaneously as a shared process of understanding and an individual act of processing knowledge by a human being. This means, that knowledge is defined as a separate object inside a human being, while the process of interaction is defined herme-

neutically (Suorsa & Huotari, 2014a; see also Day, 2005). In such a situation the nature of this shared understanding and interaction can be viewed, more or less, as an open state of being together in the act of communication (see e.g. Tsoukas, 2009). This has turned out to be troublesome both in the empirical studies of knowledge creation and in the field of KM in general. These problems are caused by the fact that with the idea of knowledge as an asset inside human being it is hard to understand phenomena like shared understanding and interaction.

However, we have indicated in a recent study (Suorsa & Huotari, 2014a; Suorsa, 2015) how knowledge creation can be defined coherently from the perspective of hermeneutic phenomenology in such a way that these problems can be avoided. By starting with the definition of a human being as a phenomenological subject (Heidegger, 1927/1985), the definition of interaction can be derived coherently from the hermeneutics provided by Hans-Georg Gadamer (1999a, 1999b). At the ontological level our proposed methodology is novel as it opens up new possibilities for this kind of examination: we propose that the understanding of Gadamerian hermeneutics may deepen, if its relationship to Heideggerian ideas of Being (*Dasein*) is taken into account (Tietz, 2000, p. 17).

In this sub-chapter we will shortly present three central features shaping the idea of a human being by Heidegger, which allows us to understand the phenomenon of knowledge creation in a deeper manner than in previous studies. These are: 1) being and acting towards the possibilities, 2) being in terms of everydayness and authenticity, and 3) temporality of being. After this, we will introduce the central features of interaction, understood in the light of Gadamerian hermeneutics.

The Phenomenological Human Being

The point of departure is the phenomenological understanding of a human being as a historical being connected inseparably with his context (Heidegger, 1927/1985; see Suorsa & Huotari, 2014a). In hermeneutic phenomenology, “the human being is understood in terms of his or her being as creating the world and being created through the world simultaneously” (Suorsa & Huotari, 2014a, p. 1048). When viewing the phenomenon from this perspective, it is important to understand that in every encounter with the world and other human beings we make choices: how we act and interact is shaped by the possibilities we think or believe are open to us. Thus, it is important to realise, that the future is open and also questionable, meaning that we really have a possibility to make a difference, to act and interact in a new way, and thus change the path every moment (Suorsa & Huotari, 2014a).

However, according to Heidegger and Gadamer, human beings usually act and interact like they always do, without questioning and even realising that in so doing they also make choices and are supporting the status quo. This kind of being Heidegger calls *everydayness*, and its opposition *authenticity*. When examining the definitions of knowledge creating interaction and action we can find similarities to this dichotomy (see Suorsa, 2015). Thus,

to enhance knowledge creation we should support authenticity and human beings’ struggle away from everydayness in the encounters.

The third feature explicating the benefits of using a phenomenological idea of the human being is the temporal structure of the human being. From the phenomenological viewpoint, the human being can be understood as a temporal subject, whose existence is shaped on three levels: past, present and future. Previous experiences and expectations concerning the future are shaping the way a human being acts and interacts as a being in the world. In the event of interaction, understood as an encounter between two elements, all these features are affecting the nature of the event. Thus, to put it briefly, the ideal mode of being in the knowledge creating interaction would be open and present in the course of action (see Suorsa, 2015). Thus, we can illustrate the central features of our phenomenological viewpoint on knowledge creation accordingly (see Figure 1).

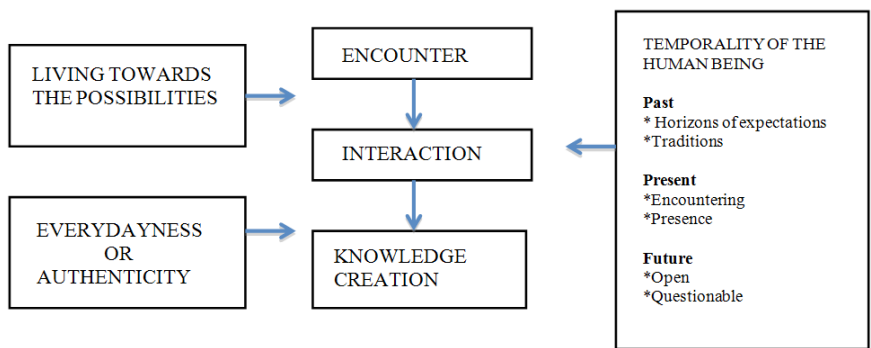


Fig. 1 Phenomenological idea of a human being in the knowledge creating interaction

The Phenomenological Idea of Experience and Interaction

Similarly to research on knowledge creation (e.g. Tsoukas, 2009; Morner & von Krogh, 2009), Gadamer’s hermeneutic view is based on the idea of communication as a historical, experience-based event that includes an element of creative change and sharing (Gadamer, 1999a, 1999b, 1999c, 1999d; Suorsa & Huotari, 2014a). This viewpoint enables examining the interaction as a shared phenomenon instead of concentrating on individuals when aiming at increasing understanding of the phenomenon of knowledge creation (see Tsoukas, 2009). Phenomenologically oriented hermeneutics provides us with a possibility to describe the actual event of interaction as an open and dynamic process. According to Gadamer (1999a, 1999b), this event of interaction can be something very radical, which includes the possibility of considerable changes and developments.

We (see Suorsa & Huotari, 2014a) have explicated the Gadamerian view as follows:

The hermeneutic circle, as described by Gadamer, describes the interaction of understanding which happens between the past and the present (Tietz, 2005, p. 47). In the act of understanding, a being acts supported by the horizon of expectation created by his prior experiences. This horizon is constantly changing as events progress. Thus, in principle, the hermeneutic circle is movement in time, and this movement involves anticipation, correction, and the reassessment of expectations, which in their turn form a unified conception of the whole. One has certain prejudices and intentions, which guide the understanding. (Gadamer, 1999a, pp. 57–58.) The hermeneutic circle as a construction of interaction thus describes an interpersonal event of meaning creation and interpretation in a certain time and place in order to create a new, better explicated, and understood position towards a certain thing, problem, or challenge encountered (Gadamer, 1999a, p. 63). In order to understand, one has to be able to recognize something that already exists and effects in him (Gadamer, 1999d). The historical structure of the experience is the motor in this circle: everything rises from what is already lived and experienced in a certain family and community—and in a certain tradition. The capacity of understanding is thus more than a matter of an individual and his immanent context only (Tietz, 2005, p. 42). (Suorsa & Huotari, 2014a, p. 1049)

Another benefit of Gadamerian thinking is its focus on the shared event of interaction, not the knowledge assets inside individuals. “Gadamer argues that in the hermeneutic circle the aim is not to understand the other person, but to understand and explore the event of creating meaning in a shared situation of conversation (Gadamer, 1999a, 1999b, 1999c; see also Gadamer, 1999e)” (Suorsa & Huotari, 2014a, p. 1049).

The knowledge creating interaction is said to be, at its best, open and reflective. We have stated (see Suorsa & Huotari, 2014a) that Gadamerian hermeneutics describe this kind of mode of being with the conceptualization of experience. In Gadamer’s terminology knowledge as a concept is not emphasized. Moreover, hermeneutic conversation does not aim at creating new knowledge as such. Instead, Gadamer focuses on the experience, which describes a human being’s relation to the world through authentic and inauthentic being (Heidegger, 1927/1985). In Gadamerian thinking the conception of experience is divided into two: “lived experience” (*Erlebnis* in German) and “experience” (*Erfahrung* in German). In Gadamer’s hermeneutics, experience (*Erfahrung*) is reserved to mean a deeply unified state of being when understanding and openness to the world are possible. This kind of a state is created by successful interaction. It must be noted, that in Gadamer’s view, lived experience (*Erlebnis*) is a superficial way to encounter the world and other people in a state where a human takes the position of an observer or user of the event for pure pleasure or curiosity and is not totally present when encountering the world (Gadamer, 1999b, pp. 72–73). Thus, for Gadamer (1999b, pp. 107–108) experience means comprehensive presence in the course of events, which does not allow the human being to stay in the background as a mere observer. This kind of experience of interaction can be viewed as an eligible state that allows profound learning and change (Suorsa & Huotari, 2014a, pp. 1049–1050).

This kind of setting allows some questions about the phenomena of knowledge and information in general to emerge (see e.g. Capurro & Hjørland, 2003; Wilson, 2002; Miller, 2002). In the field of LIS the debate on how the concepts of knowledge and information are used in KM research often refers, explicitly or implicitly, to the idea of different modes of knowledge as defined by Michael Polanyi. Polanyi has explicated the experiential process

of knowing starting from the perception and the bodily functions behind the process of understanding (see Polanyi, 1966). For example, Miller (2002, *Can we ever manage knowledge?*) states:

Michael Polanyi, a pre-eminent thinker and author in this field (see, for example, *The tacit dimension*, 1966), has been widely misinterpreted (in this author's opinion) by more recent writers who have suggested that Polanyi viewed knowledge as—in one sense tacit—and in another sense explicit. This was not his view. For Polanyi, knowledge was only ever tacit. Once we attempt to make knowledge (i.e., what we “know”) explicit, it reverts immediately to an “information” state again and requires human intervention anew for sense to be made of it.

Thus, knowledge is seen as something inside a human being, which is converted into information when said out loud or explicated in some other way. Information, however, can never fully explicate this knowledge.

Without explicating Polanyi's theories further we can state, that if knowledge is defined with the help of Polanyi on any level, it moves away from the conceptualisations of knowing and is more related to phenomena such as experiencing. Thus, the definitions of knowing and knowledge are more like definitions of experience and explicate more the ever-changing nature of human being as such (see e.g. Merleau-Ponty, 2006). In other words, the state of knowing is not to be derived from the whole state of being and living in the ever changing contexts, where a human being is constantly perceiving, thinking and acting (see e.g. Cook & Brown, 1999). However, we can question, how this inexplicable knowledge differs from other kinds of aspects or phenomena “inside a human being” and how it is special. Thus, the debate on the differences between knowledge and information is turned into a question of a human being in his environment, as examined earlier in this chapter. We argue that the premises of hermeneutic interaction could be illustrated as suggested in Figure 2.

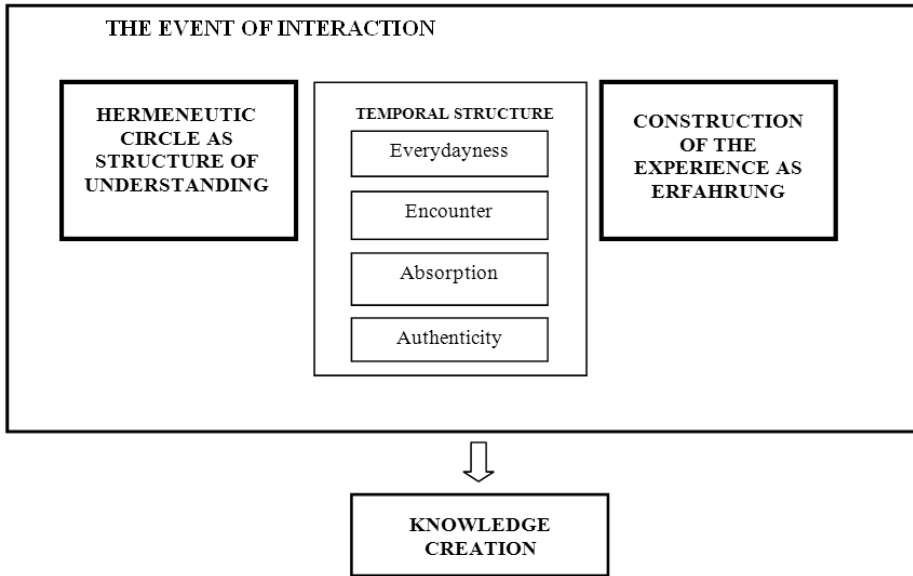


Fig. 2 The proposed premises of hermeneutic interaction in knowledge creation

Epistemological Level: Studying Knowledge Creation Empirically

We have indicated that knowledge creation can be defined starting from the definition of a human being, followed by the definition of being and interaction. This provides us the premises that guide our examination on the epistemological level.

Deetz (1996) claims that organizational research can be categorized as discourses on the basis of the language. His typology involves a *normative discourse*, which is based on the positivist research tradition; an *interpretive discourse*, which is a subjective viewpoint to organizational phenomena; a *critical discourse*, which views organizations as battlefields of power; and a *dialogic discourse*, which deconstructs ideas and scrutinizes the complexity of reality. A literature review has indicated that most KM research is based on the normative and interpretive discourses, whereas the critical and dialogic discourses are rare (Schultze & Leidner, 2002).

Schultze and Stabell (2004) applied both Burrell and Morgan's (1979) and Deetz's (1996) typologies and presented the following four discourses of KM research. First of all they name a *neo-functionalist discourse*, in which the metaphor of knowledge is an asset and tacit and explicit knowledge are separable phenomena based on the idea that there is a stock of knowledge to be discovered. Secondly a *constructivist discourse*, in which the metaphor of knowledge is mind, and tacit and explicit knowledge are not separated from each other. The premise of this discourse is Polanyi's idea of tacit knowing. Organizational phenome-

na construct each other and integrate knowledge and coordinating collective action, and organizations are systems of distributed cognition. Thirdly, there is *a critical discourse*, in which the metaphor of knowledge is power. Tacit knowledge is separated from explicit knowledge and the knowledge object can be owned, bought and sold. Fourthly, discourse is *dialogic*, in which the metaphor of knowledge is discipline and the focus is placed on disciplinary practices that shape and are shaped by knowledge. Tacit knowledge is not separate but deeply internalized in organizational processes consisting of normalizing judgments (Schultze & Stabell, 2004, pp. 555-561).

The methodology proposed in this chapter can be seen to be related to the interpretive discourse (Deetz, 1996). In this sub-chapter we further explicate this relation by viewing the methodological choices promoted by the premises of the phenomenological viewpoint.

Knowledge Creation as an Experience and an Event

As already explicated in our studies (Suorsa & Huotari, 2014a; Suorsa, 2015), knowledge creation can be defined as a process, where both experiences of the participants and the event of interaction itself are the foci of examination. Consequently, when knowledge creation is conceptualized in such a manner its empirical examination presupposes certain issues are to be taken into account.

First of all, the experiences of the human beings involved in the process of knowledge creation are in the pivotal position—we have to take into account the experiences of the participants. However, as knowledge creation is an interactive process, it is also something which happens in a certain time and place. For interaction to take place, people have to encounter each other in order to create something together. This encounter does not have to be physical as it can happen with help of technological devices; nevertheless it is always an event in itself.

Furthermore, as our explication shows, the phenomenon of knowledge creation is always contextual: it happens in a borderless relation to the world (though the concept of context has its problems in the light of hermeneutic phenomenology). This means that we also have to take into account the circumstances of the event of knowledge creation. Thus, according to our theoretical examination, there are four dimensions in the phenomenon of knowledge creation. These dimensions give the basic structure to its empirical study as outlined in Figure 3.

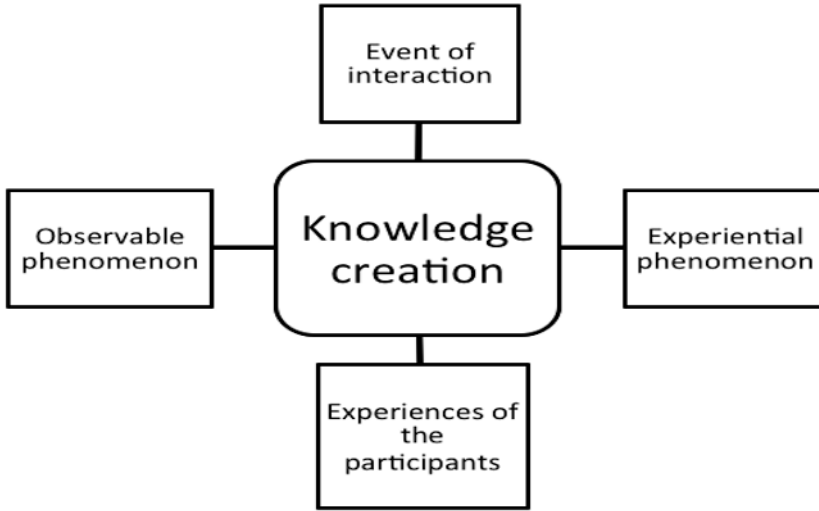


Fig. 3 Dimensions of the phenomenon of knowledge creation affecting its empirical examination (Source: Suorsa & Huotari, 2014b, adapted)

First of all, the creation of knowledge is temporal, meaning that it happens always in a certain time and place. This gives our exploration a basic structure: we explore the actual event of interaction, but also the circumstances or the history of this event. This can be explored with the conceptions of the micro and macro levels of knowledge creation. In this the macro level refers to the circumstances and the history of interactions in the community, whereas the micro level refers to the actual event of interaction itself. Secondly, the phenomenon of knowledge creation is experiential, in the sense that the experiences of the human beings are where the actual knowledge creation happens. However, as a temporal phenomenon it is also an event, which can be observed.

Empirical Methods for Studying Knowledge Creation

For gaining deeper understanding and related new knowledge we need to obtain information from several aspects of the phenomena under scrutiny. In our case, the aspects related to knowledge creation are: 1) the experiences of the human beings involved in the process, 2) the events of interaction of the human beings involved in the process, and 3) the circumstances where all this takes place. This leads us to consider which methods are appropriate for studying a phenomenon that is both experiential and spatial/temporal. This nature of the phenomenon gives us a wide range of methods both for examining human experience as well as for examining action and interaction.

In the research of knowledge creation in organizational settings qualitative methods have often been used, as knowledge processes and the phenomenon of knowing are often seen to be experiential phenomena (Cook & Brown, 1999). However, quantitative methods have also been used to study the practices of using and creating knowledge (Shih, Chang & Lin, 2010; Mitchell, Nicholas & Boyle, 2009; Li, Huang & Tsai, 2009). A typical means for studying knowledge creation has been the interview method (for example, Widén-Wulff & Davenport, 2007; Travaille & Hendriks, 2010). When knowledge creation is acknowledged to be an interactive process in working communities, methods of observation have also been applied (Schultze & Orlikowski, 2004; Kosonen, 2008). Often these studies are based on the interpretive paradigm.

Though theoretical research emphasizes the meaning of the actual events of interaction, empirical studies are few. For example, Tsoukas (2009) has theoretically explored the elements of creative interaction and empirically tested these ideas using short dialogues based on his earlier studies. Yanow and Tsoukas (2009) examine the ways in which a human being reacts and improvises in a surprising situation (reflection-in-action), but their empirical exploration is limited to one discussion only. Thus, there is a need to examine the methods of studying coherently this kind of phenomenon empirically.

Qualitative ethnographical methods are most appropriate for studying empirically, from a phenomenological viewpoint, knowledge creation. This process is intertwined in the everyday life of the working community. Triangulation of qualitative methods is relevant to get as holistic a grip on the phenomenon as possible. We should also take into account the empirical phenomenological research promoted for example by Giorgi (1979) and Moustakas (1994), who have developed the empirical methods to examine experiences especially with help of Husserlian phenomenology. The theoretical viewpoint to knowledge creation as proposed in this chapter forms the basis for studying empirically the phenomenon of knowledge creation as illustrated in Figure 4.

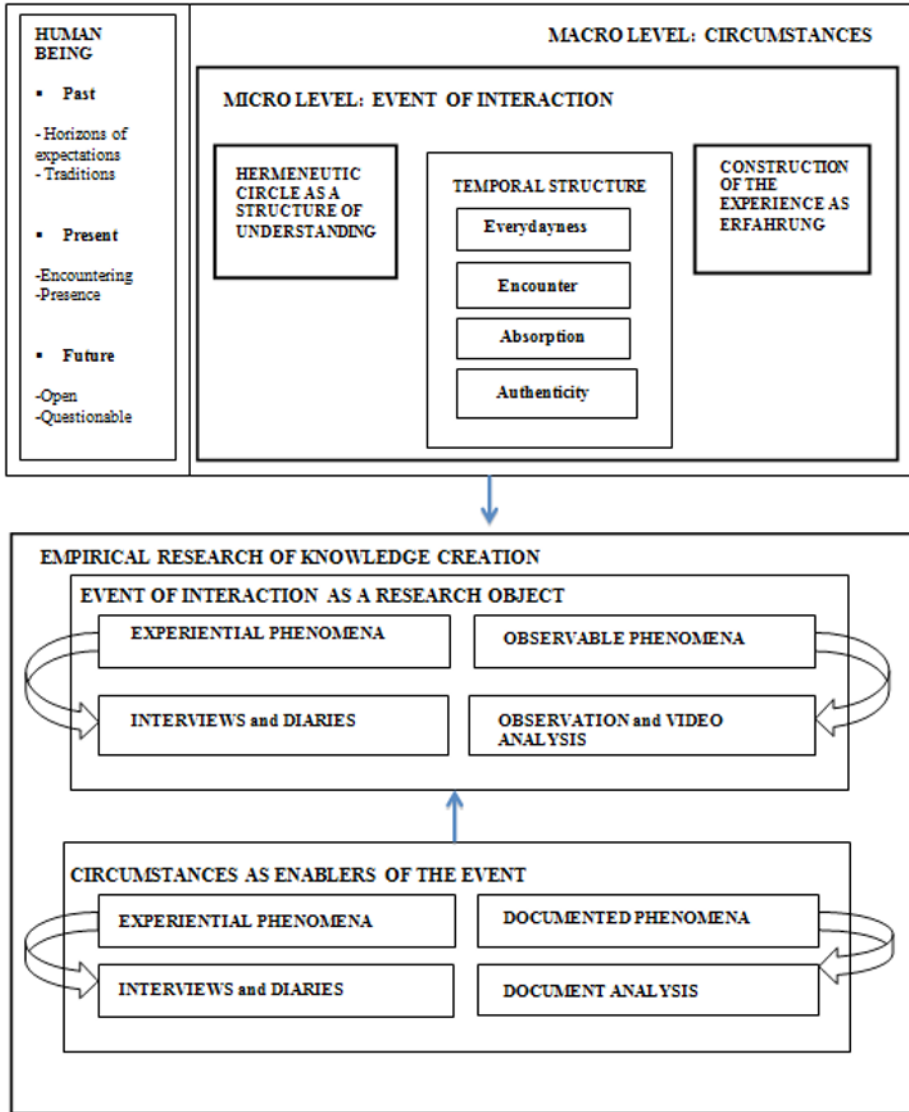


Fig. 4 Structure of the event of interaction as a basis of studying knowledge creation empirically

The study of the experiences. When we study the phenomenon of knowledge creation as an experiential phenomenon, we can gain from the participants multiple stories and interpretations of their experiences. These data can be collected by using interviews, diaries or even surveys. In the data gathering the phenomenological research emphasizes openness: open-ended questions and dialogues are promoted to gain descriptions of the experiences

(Moustakas, 1994, p. 13). It is also important not to assume anything, as the premise of a phenomenologically oriented research is that the interviewer “does not seek to predict or determine causal relationships” (Moustakas, 1994, p. 105). We propose that we can get a deep insight on the experiences if we take into account the phenomenological idea of a human being and the historical structure of interaction as a hermeneutic circle. This means emphasizing the historical nature of experiences, by including the personal history of the participants and their everyday life as part of the interview, in order to understand the meaning of the interactive event in their everyday life. The hermeneutic view of interaction acknowledges that the actual being together in interaction is not the moment of objective development—in fact it is impossible to contain. However, the experiences of the encounter and absorption are open to discussion afterwards.

The study of the event. The main method to examine an event of interaction is observation. These data can be collected also by using video recording of the event. For example, when observing a discussion between two people, we can witness various phenomena: information is shared and used while people talk and interact with each other to form a shared understanding, that is, knowledge. Moreover, in such events of interaction we can also observe knowledge being shared and used through knowing as people discuss and also act, which is observable as bodily movements, gestures, etc. The borders of these processes and various phenomena are impossible to identify. However, the phenomenological viewpoint gives us the opportunity to concentrate on the phenomena themselves by concentrating on the present moment and perception: a human being capable of understanding is always already oriented somehow when observing the world. This leads us to review the concepts of information and knowledge. Relevant is the way in which phenomenology structures the forming of knowledge on a very fundamental level starting from perceptions and their interpretation. The phenomenological attitude rises from the notion of perceptions and phenomena as the real objects of study. Only a phenomenon exists in a certain time and place and only it can be reached. In phenomenology one does not search for truth or an idea behind the perceived phenomenon but examines what is manifested in the event (Zahavi, 2007, p. 15). Phenomenon is not a fixed object but a way of encountering. At the same time the ambiguity of knowledge becomes obvious: all knowledge is based on the perceived phenomenon and thus dependent on the perceiver’s perspective and intention (Heidegger, 1927/2006, pp. 28-31).

Though observation of the event does not give us any information about the experience of knowledge creation as such, it can reveal many crucial aspects concerning the possibilities of a successful interaction. In the studies of knowledge creation, the meaning of actual facial encounters, meetings and discussions has been emphasized, but the question of what actually happens in the discussions is seldom the focus of examination. Thus, multimodal conversation analysis would be a fruitful method for examining and increasing understanding of knowledge creation (see Tsoukas, 2009).

The study of the circumstances. Information on the circumstances of the actual event of interaction is gained through interview methods, qualitative surveys, and observation.

Also organizational documentation provides data about the community and the context, thus the circumstances of the event can be studied with the help of document analysis.

The effort to combine the study of the event of interaction and the experiences of the participants means that the participants should be viewed more as co-researchers, which is an idea promoted in empirical phenomenological research (Moustakas, 1994, p. 15). This would help to ensure that the interpretations conducted when analyzing both the events of interaction (for example, video material) and interview data are in line with the experiences. By these means also the connection to the actual context of the particular situation are strengthened (Moustakas, 1994, pp. 14-15). However, it must be noted that the role of the researcher as the most enlightened interpreter of the data is often emphasized in phenomenologically oriented studies (Moustakas, 1994, pp. 103-104).

Discussion and Conclusion

Our aim in this chapter was to provide a theoretically consistent methodology for examining knowledge creation in organizational settings. The phenomenological methodology proposed in this chapter derives from the conceptualization of a human being by Heidegger. We explicated three premises of this conceptualization: 1) being and acting towards the possibilities, 2) being in terms of everydayness and authenticity, and 3) temporality of being. With these conceptions we can understand the temporal nature of a human being and his or her modes of being in interaction. After this, we viewed the knowledge creating interaction in the light of Gadamerian conception of hermeneutic circle and historical experience.

Our methodology is based on hermeneutic phenomenology. As stated by Budd, Hill & Shannon (2010, p. 273), phenomenology provides possibilities to understand “the experience-perception aspect of being’ at two levels: (1) as an ideal of being to which human action should be directed so that life can be most fully understood, and (2) as the lived experience of people, examined as people experience and perceive, without *a priori* imposition or regulation.” Our analysis acknowledges the first mode as a possibility in every human experience and as a normative direction of being. The second level makes it possible to examine human action and interaction in the contexts of organizations and labor (cf. Budd, Hill & Shannon, 2010). According to our phenomenological examination the determining feature of the mode of being in knowledge creating interaction is being present in the course of actions and reaching to authentic being. Thus, it should be emphasized, that the actual state of being in knowledge creating interaction cannot be analyzed by the participant, as for Gadamer (1999b, pp. 107–108) experience means comprehensive presence in the course of events, which does not allow the human being to stay in the background as a mere observer.

The phenomenological methodology proposed in this chapter is related to the studies of Tsoukas (2009) and Cook and Brown (1999) in the sense that it acknowledges the importance of a well-explicated theoretical background and focuses on the interactive event of being and creating new knowledge. However, our view also offers a consistent

explication starting from the concept of a human being followed by the explication of how the concept of interaction is to be understood. The hermeneutic phenomenology does not offer permanent means and instruments for behaving or operating in knowledge creation situations in general. Fixed rules in interaction could be useful in the short term, but acting in a flexible manner in an everyday life situation requires capabilities to listen and interpret the environment and other human beings with an open attitude (see Yanow & Tsoukas, 2009; Suorsa, 2015). This is the basis of hermeneutic phenomenology promoted in this chapter and thus worthy of further research.

Similarly, the hermeneutic viewpoint does not offer simple models for knowledge creation; instead it emphasizes the deep and complex nature of the phenomenon. Phenomenological hermeneutics offers a well-grounded and coherent basis for understanding the phenomenon and provides the structure of the hermeneutical circle with which to further analyze and study interaction empirically.

We can reflect on the nature of the event of interaction in relation to the concepts of knowledge or information use and sharing and ask if the phenomena we are witnessing are in fact *just sharing* and *just using* knowledge or information. Admittedly, these phenomena are often confused in research (Savolainen, 2009). Some researchers have solved this problem by using knowledge sharing and knowledge creation as synonyms or they have focused only on the knowledge sharing. Additionally, it could be claimed, that in communication acts we can observe and analyze only information, be it speech or action. This would be the case if we understood information traditionally as some entity to be transferred like in Claude Shannon and Warren Weaver's (1949) mathematical theory of communication or the so-called Information Transfer model. Accordingly, knowledge would be seen as something inside human beings and thus not to be seen or detected by an outsider. However, the conceptualization of a human being and interaction with hermeneutic phenomenology makes these questions irrelevant in this context.

Hence, it is worth considering how the phenomenon of knowledge creation, which is not reduced to some other knowledge or information process, has a meaning of its own. Through longer periods of gathering research material and following the knowledge processes in the communities further, we can surely get an insight of developments and changes in the community and its members' experiences. Thus, knowledge creation as an experience and especially as an event is tightly connected with the other information and knowledge processes, and should be jointly studied with these processes, in order to gain a more thorough understanding of how new knowledge is created. These notions can then be taken into account by combining both the experiential and the observable aspects in empirical research.

To date, the methodology proposed in this chapter has been tested in a pilot study examining the observational elements (Suorsa & Huotari, 2014b). The methodology should be tested in different organizational settings for developing it further and to gain deeper understanding of the best methods for empirical study. The communal and shared nature of knowledge creation as a phenomenon should be especially acknowledged and the methods for studying it also deserve further examination.

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The Significance of Digital Hermeneutics for the Philosophy of Technology

Arun Kumar Tripathi

Abstract

Philosophers of technologies respond to the “given fact” that we live in a “technological culture” by sketching a “praxis philosophy” of technologies, where technologies are inherently neutral and culturally multi-stable. The easiest way to understand the non-neutrality of a technology is that we try to consider how experience is mediated by the technologies we use. Material hermeneutics deals with the art of embodied interpretation of material culture and technologies. In my chapter, I will demonstrate that a newer approach of hermeneutics, digital hermeneutics, applies to the concrete praxis of technologies such as internet technology and cyberspace. Digital hermeneutics is understood as the encounter between hermeneutics and digital technologies that is deeply rooted in material culture. The main purpose of this essay is to seek out the importance of digital hermeneutics for the philosophy of technology. The hermeneutics of technology is understood as a hermeneutics of practice in the understanding of technologies, which is culturally and socially embedded. This cannot be done with semantics; rather this digital hermeneutics as a material hermeneutics can be explored with human embodiment. In the end I will show that a hermeneutics developed for the digital world contains multistable hermeneutic relations.

From a Euro-American perspective technology is viewed through its connection with the sciences, while in South America the perspective is the reverse, science is viewed through its technologies understood as cultural instruments; this places the technification of sciences in the foreground. Don Ihde and Bernhard Irrgang are two representatives of the phenomenology of technology; both have demonstrated a willingness to connect both of these traditions. Ihde and Irrgang understand technological development in terms of a social anthropology of technosystems. This viewpoint is in opposition to the technological determinism of applied natural science or the determinism of pure technological development (Ihde, 1990, p. 5). The phenomenological underpinning of a technology has an impact on the cultural environment of technological development (Irrgang, 2014).

Irrgang has introduced a phenomenological and hermeneutically-informed approach to the philosophy of technology. Based on the concept of technological action and implicit knowledge, Irrgang develops a concept which identifies technological know-how (*technisches Koennen*) as a foundation for the meaningfulness of knowledge—which deals with social, institutional, cultural and ethical elements in society. A philosophical reconstruction of technology within historical perspectives is developed and through this process, questions about technological and social progress can be examined. Based on the hermeneutics of technological construction, Irrgang brought these two aspects together with social examples and the analysis of technical institutions. The adaptation of technology reveals a social and cultural status that is not inherently present in technology. Therefore, technology must be modelled on certain culturally shaped ideals of security, on ideals of the user or of the environment. However, *handling* technology is a cultural evaluation criterion; it is frequently shaped by prejudices (e.g. concerning users) or by one's own conceptions of security and environment. These unconscious prejudices and cultural orientations have to be admitted, reflected and discussed. This is the main task of reflection on technology and culture (Irrgang, 2002a; Irrgang, 2002b; Irrgang, 2006; Irrgang, 2008). Indeed, the first explicit title which employs the term “philosophy of technology” comes from the 1877 book published by Ernst Kapp (1808–1896), Kapp was one of the 19th century’s “left Hegelians,” as was his slightly younger peer, Karl Marx (1818–1883), who stood at the origin of what was to become philosophy of technology as a thematic, sub-disciplinary field within philosophy (Ihde, 2004).

Don Ihde (2004, p. 91) argues that “contemporary philosophy of technology has arisen and grown out of the ‘praxis’ traditions, particularly those of a concretist orientation, and thus stand in contrast to the earlier, dominant strands of a theoretically biased philosophy of science.” Even if much contemporary philosophy of science has been late to arrive at such praxis phenomena as experiment, instrumentation and technologisation, in science, it, too, has begun to take a similar direction. This has some implication for the role of the philosopher of technology or of technoscience as current coin would have it (Ihde, 2009).

First, there is some degree to which the philosopher of technology must go native. Ihde (2004, p. 91) implores those making such investigations to “become more than a distant observer, to become an informed participant.” Without this participant-observation, the philosopher could never deal with the developmental phases of technologies. Ihde has argued that these are equally (if not more) important than the response phases that deal with already extant technologies and their effects. Second, a praxis orientation is necessarily more “pragmatic” and focused than a more conceptually-based general theory might be. Given this focus, Ihde sees nothing wrong with directed specialization towards the various areas of the technologies of the times (Ihde, 2004, p. 91).

Don Ihde, Peter-Paul Verbeek and Bernhard Irrgang plead that philosophy of technology is necessarily concretist and “materially” oriented—insofar as the technologies operate materially at whatever level. Such material operations, as they conclude, display patterned, structured, and while multistable, limited sets of possibilities. It is this structure that philosophers in “R & D” may examine and analyse (Ihde, 2004, 2009; Irrgang 2009; Verbeek,

2005). David Kaplan argues “recent philosophy of technology examines the way that our technologies form the background, context, and medium for our lives, shaping our culture and the environment, altering patterns of human activity, and influencing who we are and how we live” (Kaplan, 2006, p. 47). Don Ihde (2009) has already taken steps in the direction of applying Ricoeur’s notion of indirect, mediated experience to our experience of technology (Kaplan, 2006, p. 49). Kaplan argues “Our experience is technologically-mediated when, for example, we view the world through glasses, talk on a telephone, tell time on a watch, or read a speedometer. Ihde notes how devices that are read exhibit the hermeneutic character of a technology particularly well” (Kaplan, 2006, p. 49).

Ihde (2004, p. 93) maintains that both Kapp and Marx were “materialist” Hegelians and thus technologies become much more thematic in both their developments. Ernst Kapp took “colonization” as a major metaphor and argued that there is both an “internal” and an “external” colonisation which characterised the human development of technologies.

Based on Kapp’s theory of human extension, Ihde (2004, p. 94) argues, “technologies were analogised as extensions and magnifications of human organic processes and projected into an external environment.” While the analogies to muscle power for various tools clearly extend specific human powers, Ihde says Kapp also analogised technologies into vaster and more complex systems—for example, communications systems are analogised upon the nervous system, etc. In some sense, then, Ihde claims, technologies are material extensions of human embodiment. Kapp, too, was to have echoes in the later twentieth century, most notably in the traditions associated with Marshall McLuhan and James Feibleman (Ihde, 2004).

We can reduce these arguments back to more primeval antecessors. We can ask why did humans first make a hand axe? Because their hands were too weak in order to chop wood. Why did people come up with the idea of a spear? Because their arms were too short and their legs were too slow in order to catch a running animal. Why did people invent lenses? Because their eyes were not capable of seeing very small things, or things that were very far away. Likewise, all technical artifacts such as laptop and pen can be explained, similarly, to be extensions of the human body (Vries, 2005, p. 68). Kapp’s theory of the extension of the human body seems quite plausible given this type of genealogical rendering. However, as technologies get more complex and multifaceted, it becomes much more difficult to see in what sense they are extensions¹ of our bodies. It is ironic also that instruments now tell the extremely detailed story of the inadequacies of human bodies (Tripathi, 2015b).

1 Steinert (2015) focuses on the intricacies of the extension theories of technology. Steinert (2015) also came to conclusion “the idea of a projection of organs into external means is an intuitive account of how a limited set of simple tools might have developed as a replication of the morphology and functions of some organs, it does not fare well when it comes to complex technical artifacts” (p. 4).

Don Ihde's Postphenomenology and Rafael Capurro Criticism²

Historically, the term “postphenomenology” is introduced to signify a revised but thoroughly phenomenological approach to technologies and material culture; it is phenomenology applied to the study of concrete human meaning-making practices, particularly to technologies. “Classical” phenomenology—first with Husserl, but including most post-Husserlians, excepting Heidegger—dealt with *intentionality* (human meaning-making) but found little of interest in the *technological tools* of meaning-making practices. In the case of Heidegger, while he was clearly one of the forefathers of 20th century philosophy of technology, his work remained primarily focused upon the general nature of the intentionality transformations of technology-in-general in contrast with the next generation of philosophers of technology who wanted to know how new meanings and functions are made with technologies (Ihde, 2009). Postphenomenology focuses on how human-technological devices affect intentionality through meaning-making practices. But it does so with rigorous scrutiny of particular technologies, rather than technology-in-general as Heidegger had done. Once philosophy of technology reached its late 20th century state, it had become obvious that praxis oriented philosophies such as phenomenology or pragmatism were better suited than logic- or theory-centred analytic approaches to study the cultural and socio-historical effects of technological transformation (Ihde, 2009).

Postphenomenology continues the phenomenological tradition of a “world” (inter-relationistic) ontology of objects related to one another and culturally to human subjects. In the case of technologies, for example, humans “invent” technologies; while reciprocally, technologies also “re-invent” humans. Co-constitution is recognized in a relational ontology. But, such relational ontologies are not unique to phenomenology—they are part of the family of pragmatic (e.g., organism/environment) and actor network (e.g., humans and their non-human “props”) ontologies as well (Ihde, 2009).

Embodiment, *being a body*, is also a constant within postphenomenology. But since bodies are actively perceptual and culturally-historically constituted, postphenomenology must take account of the variations and possibilities of diverse embodiments. Thus, issues of different cultures, gender, politics and ethics are included in postphenomenological analyses.

Variational analyses provide the methodological style of this approach. With technologies, there are multiple ways in which any single technology may be related to users and multiple ways in which each technology is culturally embedded. Variations must also be considered with respect to the complex dimensions which are included in all such phenomena. Variational analysis—more precisely, the study of group-theoretic invariants—provides a rigorous method not found in early pragmatism. Thus postphenomenology can be seen as an adaptation to late 20th-early 21st century philosophic needs and issues, particularly in the context of technoscience and material culture (Ihde, 2009).

2 I thank Rafael Capurro for an intensive e-mail exchange on the subject of postphenomenology in 2008.

However, according to Patrick Heelan, the term postphenomenology is immediately linked with “postmodernism” which is a critique of modernism. According to Heelan, *postphenomenology*³ is not a critique of phenomenology but a careful, concrete, and hermeneutic application of (particularly Merleau-Pontyan) phenomenology to technological practices. Underlying this description, however, there is an implicit uneasiness about the non-transparency of Husserl’s phenomenology and its “implicit idealism” that undermines Husserl’s philosophical goal of “apodicticity” (demonstrability).

In criticizing Ihde’s concept of “bodies in technology” (Ihde, 2002) Capurro (2005, 2008) argues that, the concept of “body” is in itself technological (understood at least, in the Western tradition, as *organon*). In other words, the birth of technology is coupled with the transformation(s) of our body through technology. Capurro writes “we *are* embodied technology in a second-order sense. But this might be also a specific interpretation of the phenomenon due to Western (Greek) bias.” The separation between contemplative science and technology as applied science (as analyzed by Heidegger) in the Greek tradition might be explained as a re-action to the phenomenon of being. Postphenomenology as developed by Ihde, Capurro writes, means in some way giving up this primacy of observation or *theoria* with regard to praxis (stressed by Ihde), or of the body with regard to the mind. But we should take care not to identify the Greek (Aristotelian) concept of *organon* with the modern tool category.⁴ There is a dynamic interrelationship between natural *genesis* and technological productions. Captivatingly enough, Ihde’s postphenomenology is still a phenomenology, that is, it is observation (a revised form of phenomenology). Ihde observes how tools are embodied but this presupposes that the body is something different from a tool. The other alternative is McLuhan: tools are enlargements of the body which is, Capurro thinks, almost animistic. Capurro argues that we transform our bodily selves, and the very ethical question we should consider is how to keep this process going on instead of, for instance, blocking it by proclaiming some kind of ideal (racial) body. The dynamic relationship between our bodies and our selves intimately concerns, following Foucault, ethics and aesthetics. It concerns particularly information ethics because the power of (digitally) re-presenting our bodies reveals what is going on today in terms of e-economy, e-policy and the like. This kind of reflection is not any more phenomenological or postphenomenological but it is in some way “body-logical.” In some way the body is the condition of possibility of any communication technology as far as we understand it; following Heidegger’s phenomenology, it is spatial and temporal “ek-sistent” (the meaning-giving quality in being). Capurro maintains that this insight can be seen in the work of Swiss psychiatrist Medard Boss, founder of the “school” of *Daseinsanalyse* with whom Heidegger had a close friendship. The products of this dialogue included the Zollikon Seminars and the book by Medard Boss *Grundriss der Medizin und der Psychologie* (1975) that was carefully read and commented on by Heidegger.

3 I am thankful to late Patrick Heelan (Philosophy, Georgetown University, USA) for an e-mail dialogue on the topic of Ihde’s postphenomenology in July, 2008.

4 Capurro (2005) wrote an article related to this subject entitled *Philosophical presuppositions of producing and patenting organic life*.

Capurro argues that much of what we are doing today is instantiating technology in bodies! Ihde (2001) argues that philosophers should be in R&D positions. Capurro agrees—if this means a pro-active thinking replaces a just “limping behind” logic (or “*nachhinkende*” as Heidegger calls it). Husserl’s phenomenology was an answer to a key question of his time: what is the philosophic horizon within which it is possible to understand (and “relativise”) natural science. To accommodate this Husserl invented the concept of “life-world” (“*Lebenswelt*”). Capurro challenges us to learn from what phenomenology was looking for when it met the challenge of natural science (as an apparently obvious overall horizon of thinking and action). Ihde’s view, as Capurro argues, of what is inside or outside the box rests on a dichotomy that has been thoroughly criticized by, among others, Heidegger, Wittgenstein and Rorty. In other words, being-out-of-the-box is a paradox expression for conceiving pragmatic phenomenology, that is, for approaching “things” or *pragmata* without relying tacitly on ontological *pre-judices*, but questioning these altogether—including the political context in the sense of a context of power explicated by Foucault, as Ihde rightly remarks. Capurro argues, that we are facing today the *digitized body*, that is, body as (digital) data.⁵

Technics as Embodied and Hermeneutical

In the contemporary philosophy of technologies (Irrgang, 2009, 2014) certain pivotal questions arise such as “How is it that human behaviours and embodiment affect the associated social and cultural factors? How do we relate to technologies in the lifeworld? What kind of relationships stand in direct correlation to technologies? How does the lifeworld shape technology and, conversely, how does technology shape the lifeworld? It seems pertinent to emphasise that human experiences of our lifeworld are shaped by our use of mediating tools (Ihde, 1990, 2009; Tripathi, 2011). Mediating tools and gadgets such as cell phones, Ipods, Ipad, Bluetooth, Xbox, and myriad other devices have altered our lives in numerous ways. Other devices, for examples glasses, hearing aids, writing implements, and the handheld tools are also mediating tools. The aim of phenomenological description is to identify the essential or invariant features of experienced phenomena. Ihde undertakes a phenomenological description of several sets of human-technology relations in order to analyze how technologies often mediate and transform our experiences. A phenomenology of human-technology relations shows that the structural dimensions of technological mediation produce a range of possible experiences (Ihde, 1990; 2006). On the intricacies of technological mediation Friis (2012, p. 365) correctly argues that “trained judgment of perceptual experiences—bodily-perceptual skills acquired through development of

5 See the Opinion of the *European Group on Ethics* (EGE) on implants: http://ec.europa.eu/european_group_ethics/avis/index_en.htm. The human body as we know it so far is not any more (in case it has been at any time) an anthropological constant. Accessed on 28.8.2015.

expertise—have a tremendous impact on our ability to understand what technologies in fact are mediating.”

According to Ihde, when we consider the ways our everyday experience is mediated by technological objects, we find several unique sets of human-technology relations, each positioning us in a slightly different relation to technology (Ihde 1990). One set of relations Ihde (1990) calls “embodiment relations” with devices we use to experience the everyday lifeworld and that, at the same time, alter and modify our perception of the world (devices are often mundane, for example, glasses, hearing aids, writing implements and handheld tools.) Another set of relations Ihde calls “hermeneutic relations,” these involve instruments that we read rather than tools we use (these devices are not mundane, for example, clocks, thermometers, spectrographic devices and other technologies with visual displays which must be interpreted to be understood). A third set is “alterity relations,” in which technologies appear as “other” to us, possessing a kind of independence from humans as creators and users (these devices include things like toys, robots, ATM machines, computer games and visual technologies that we interact with as if they are autonomous beings). The final fourth set is “background relations,” in which technologies form the context of experience in a way that is seldom consciously perceived. This set of devices includes, for example, lighting, air conditioning, clothing technology, shelter engineering, and the various automatic machines that operate in the background of our lives, subtly affecting our everyday experience (Kaplan, 2004, p. 91).

Tools are a means of controlling and steering the interconnections between things and a device for co-ordinating shared human activities (Miettinen, 2006). One quote⁶ from *Logic* by John Dewey (1938), clearly highlights how retooling requires retooling the culture:

Tool and utensil, every improvement in technique, makes some difference in what is used and enjoyed and in the inquiries that arise with reference to use and enjoyment, with respect to both significance and meaning. Changes in the regulative scheme of relations within a group, family, clan or nation, react even more intensively into some older system of uses and enjoyments. (Boydston, 2008, *Later Works*. 12.70)

Verbeek (2008, p. 94) argues that “Technologies are not neutral instruments or intermediaries, but active mediators that help shape the relation between people and reality. This mediation has two directions: one pragmatic, concerning action, and the other hermeneutic, concerning interpretation.” Technologies mediate between people and reality and experience. This phenomenon of technological mediation has two dimensions, each of them pertaining to one aspect of the relations between humans and reality. First technologies help to shape how reality and experience can be present for people by mediating human perception and interpretation; second, technologies help to shape how humans are present in reality by mediating human action and practices. The first dimension can be called hermeneutic, since it concerns meaning and interpretation; the second is pragmatic, since

6 I am grateful to Jim Garrison (Philosophy of Education, Virginia Tech in Blacksburg) for pointing me toward this quote by Dewey.

it concerns human activities (Verbeek, 2005, 2006). Technological mediation is precisely this capacity of technology to mediate between humans and reality by establishing specific relations between both (Verbeek, 2006).

Hermeneutics of Technologies

Hermeneutics in the traditional sense has to do with understanding and the conditions for understanding a text or a person or a situation. In philosophical hermeneutics, the historical character of understanding is posited such that one *always already understands in a certain way*, and this shapes the questioning that one does. Understanding is dialogical, a dialogue of question and answer, and one moves toward reaching an understanding with the person or the text in a process of question and answer and, eventually, a fusion of horizon. Newer approaches to hermeneutics, as outlined by Irrgang (2008, 2009) and Ihde (1998) claim that hermeneutics applies to the very praxis of science and technology use as well as to the constitution of scientific objects (Tripathi, 2015a; Friis, 2015).

Material hermeneutics is the art of deploying new variations on old themes to help interpret and understand technologies. Traditionally, hermeneutics was used to deal with the problem of theological and legal texts. But when we want to interpret and understand our technologically mediated lifeworld, it helps to show the limitations of traditional canons of interpretation. Ihde's examination of hermeneutic practice within the domains of technoscience is known as material hermeneutics. Ihde rejects the Diltheyan divide between the humanistic and natural sciences and argues broadly for a hermeneutic approach capable of characterizing both sets of disciplines. Ihde (1998) has examined a new interpretation based on material practices relating to imaging technologies, which have given rise to the visual hermeneutics in technoscience studies. Historically, Don Ihde and Bernhard Irrgang have both sought to explicate a hermeneutic convalescence of technology (Tripathi, 2015a) which provides a breathing space to enable a more informed position on technology's relationship to science to be better understood.

Irrgang (2009) and Steinert (2010) argue that hermeneutics of technology opens a new horizon and meaningful sphere of technology use. Further, Irrgang (2009) illustrates that a new hermeneutics of technology, which is deeply sedimented in materiality, gives us a new meaning of technology in their usage, and at the same time, such *new hermeneutics* also illustrates the sense and nonsense (Tripathi, 2015a) that this might involve.

Hermeneutically, the reinterpretation of phenomenology is important, since it creates the possibility for a new phenomenological philosophy of technology, which goes beyond the classical diagnosis of alienation. Irrgang (2009, p. 11) argues for a new material hermeneutic of technologies through which one can get the meaning of technologies in their uses, even in the success and failures of their routine interpretation and interpolation. In the contemporary philosophy of technology, it is important to explore the primacy of practice in hermeneutical pragmatism, and at large, it tells us that practice-immanent theorizing is one of the more significant factors of hermeneutical pragmatism. The rela-

tion of “theory and practice remains one of strict subordination, good practices” being that which is scrupulously governed by theoretical principles, is a pragmatic relationship between praxis and phronesis (Fairfield, 2000, p. 4; Friis, 2015).

In fact, Ihde’s aim in *Expanding Hermeneutics* is to show that science is a profoundly hermeneutic activity, and that hermeneutics, therefore, is not limited to the humanities (Verbeek, 2003). *Material hermeneutics* retains the imperative for critical, interpretive work, which all hermeneutics requires, but it is more a perceptual than a linguistic interpretation. After all, much of natural science solely investigates the non-speaking, non-writing, non-linguistic phenomena that is quite removed from the social scientific interests that underpin this other realm (Ihde, 2009).

Significance of Digital Hermeneutics in *Material Culture*

According to Capurro (2010) the story of Digital Hermeneutics begins, with the discussions dealing with artificial intelligence (AI), in the 1970s and particularly with Hubert Dreyfus’ book *What Computers Can’t Do: A Critique of Artificial Reason* in which he points to the importance of remaining cognisant of the context of everyday practices in which we are embedded before we start with any kind of knowledge objectifications and their symbolic manipulations in AI systems (Dreyfus, 1972, 1992).

Another key contribution to digital hermeneutics was Terry Winograd and Fernando Flores *Understanding Computers and Cognition. A New Foundation for Design* (Winograd & Flores, 1986). In the preface they write: “We encounter the deep questions of design when we recognize that in designing tools we are designing ways of being” (Winograd & Flores, 1986, p. xi). According to Rafael Capurro, Winograd and Flores develop their view in opposition to what they call the “rationalist tradition” and with explicit relation to hermeneutics. They follow Gadamer by stressing that every interpretation relies on the interaction between the “horizon” of the interpreter and the text (Capurro, 2010).

The role of the computer in the world has evolved from that of specialised computing machines to information devices that pervade our daily lives. As research in artificial intelligence attempts to make computers more human, some approaches to human-computer interaction are becoming analogous to human-human interaction. By attempting to emulate human conversation, natural language technologies are poised to replace traditional graphical interfaces as a more natural means of interaction. This approach, however, overlooks the embodied nature of communication, leading to serious difficulties in usability and implementation. Computers that monitor and measure the affect of students in the classroom can give helpful feedback to teachers. Recognising other people’s emotions and feeling or being affected by them are two different things, however. How affective computers may induce the emotional context of a certain environment is an important problem to solve: “the emotions of the game change how a player sees the field, and those aren’t things that one can get a feel from the film” (Coyne, 1995). The

computer's intentional arc, with the addition of multimodal and affective computing, is still incomplete (Tripathi, 2014, p. 202).

It is difficult to imagine humans as reasoning beings free of all technological augmentation since it would seem, reason proceeds by the use of tools (rules are tools). It is to be conceived that unmediated contact is possible between the human and the world. The computer and the user form a system. In this system, the human gives mind to the machine. The question for our time is whether machines give "mind" to the human or whether machines that appear to "give mind" to humans are but mediating instances and instruments through which other humans mind humans. The question of the autonomy of the artefact is familiar to text encoders and ethnobotanists. The moral and aesthetic question is older than talk of technological ecologies and textual economies (Tripathi, 2014, p. 203).

Paul Edwards describes a cultural-ideological background through the introduction of computer technology. The cyborg figure defined not only a practical problem and psychological theory, but also a whole set of subjective positions. Cyborg-brains can be understood as machine subjects, able to be reconstructed, produced and organised. This series of perspectives and self-interpretive patterns exposed new social roles in society (Edwards, 1996).

The term cyberspace describes an environment mediated by computerised communications networks, interactive mass media and multimedia. Cyberspace is defined by the connection between digital information and human perception. Cyberspace maintains the potential towards an outstanding technological future, offering unlimited communication options and a reinvention of a liberal and democratic society (Dreyfus, 2001). We may produce a new kind of digital *human* through a confluence of being and cyberspace, a human that can be authentically justified in its unique existence. This new existence is equipped to endure life in an artificially moderated world of the digital and of computer simulations, where human-computer interactions want to escape the world of their electronically supported environment, an event precipitated in part by the drive to communicate with other individuals. In cyberspace, distance and time do not play a role among interacting entities. While the term cyberspace implies a notion of space and place, the term more accurately stands for a metaphor of borderless medium for communication. An examination of a new Phenomenology of the World of Area and Place is necessary (Tripathi, 2014, p. 203).

Hermeneutics has been, as Capurro (1990, 2001, 2006, 2010) tries to show in his work, intimately connected since the 1970s with digital technology. After having passed through critical theory (J. Habermas), critical rationalism (K. Popper), analytic philosophy (L. Wittgenstein), deconstructivism (J. Derrida), the phenomenology of the symbol (P. Ricoeur), psychoanalysis (J. Lacan), dialectic materialism (A. Badiou), mediology (R. Debray), the hermeneutics of the subject (M. Foucault) and particularly through Gianni Vattimo's "weak thought" (*pensiero debole*), to mention just some prominent contemporary philosophic schools, hermeneutics is today facing the challenge arising from digital technology becoming what Capurro calls *digital hermeneutics*. Every revolutionary transformation in philosophy that leads to the creation of a new type of rationality arises usually, Capur-

ro (2010) argues, from an outstanding technological breakthrough. This is the case of today's global and interactive digital network, the internet. The internet's challenge for hermeneutics concerns first of all its social relevance for the creation, communication and interpretation of knowledge. This challenge implies a questioning of the pseudo-critical rejection of hermeneutics with regard to technology in general and to digital technology in particular (Capurro, 1990; 1995). Facing the digital challenge, hermeneutics must develop a "productive logic" towards understanding the foundations of digital technology and its interplay with human existence. A productive logic "leaps ahead" (Heidegger, 1976, p.10) of the established self-understanding of a given science, in this case of hermeneutics, in order to undertake a revision of its main concepts and disclose a new area of research.

In his post-doctoral dissertation *Hermeneutics of Domain-Specific Information* (1986), Capurro explores the question of information retrieval as an interpretation process of bibliographic data stored in a computer. It is important to create a bibliographic database on the basis of fragmented pieces of information such as journal articles (Capurro, 1986). In order to retrieve them we must create a common background for instance a classification scheme or a thesaurus or to depend on the original text itself searchable as basic index. It is important to fix a pre-understanding common to producers and users of the database. Such background changes according to new scientific developments, historical situations, new linguistic utterances (Capurro, 2001, 2008). There is no such a thing as a a-historical knowledge nor are users isolated minds with disembodied cognitive structures but social beings that share pragmatically a horizon of pre-understanding in their everyday life as well as in their professional activities, Capurro (1986, 2001, 2008). The question of relevance and pertinence in information retrieval that plays a key role in information science can thus be hermeneutically re-considered with regard to different horizons of expectations based on the Gadamerian concept of "fusion of horizons."

Conclusion: Significance of Digital Hermeneutics as Material Hermeneutics

A material hermeneutics is a hermeneutics that "gives things voices where there had been silence, and brings to sight that which was invisible" (Ihde, 2009, p. 80). Such a hermeneutics in natural science can best be illustrated by its imaging practices, as Ihde (2009) argues. The objects of this visual hermeneutics were not texts nor linguistic phenomena, but things that came into vision through instrumental magnifications, allowing perception to go where it had not gone before. One could also say that a visual hermeneutics is a perceptual hermeneutics with a perception that while including texts goes beyond texts (Ihde, 2009; Friis, 2015). This local history gives but a small glimpse of the directions Don Ihde tried to outline in *Expanding Hermeneutics*. Such material hermeneutics are doubly material—first, in the sense that the objects being investigated are material entities—*paramecia*, extra-geocentric satellites, and eventually even the chemical make-up of the stars—but also it is material in the sense that the instruments being used to "bring close"

such phenomena are also material entities, technologies, by which and through which the natural sciences are embodied (Friis, 2015). It is evident then that our instruments and technologies operate in hermeneutic ways.

Ihde has revived the traditional form of hermeneutics and transformed it into a material hermeneutics that helps to make clear traditional antinomies of interpretation. The older traditions hold that hermeneutics apply to and are limited to the social, cultural, and historical dimensions of science. But newer approaches claim that hermeneutics applies to the very praxis of science and to the constitution of scientific objects (Ihde, 1997). Ihde (1997, 2009) sides with the latter perspective and argues that a tendency to retain vestigial positivist interpretations of science keeps the older tradition from seeing hermeneutics as deeply embedded in science praxis. Traditionally, hermeneutics has usually been associated with linguistic phenomena, particularly texts of various types, with hermeneutics thought of as some set of interpretive principles. *Material hermeneutics* retains the critical, interpretive work which all hermeneutics requires, but it is more a perceptual than a linguistic interpretive practice (Ihde, 2009).

Capurro (2010) argues that the internet has no central point or final destination (contrary to what some cyber-prophets proclaim). It is already part of the everyday life of millions of people. It is integrated in their bodily existence, as Don Ihde (2002) has demonstrated. Capurro (2010) has demonstrated that “digital hermeneutics is in line with Ihde’s project of “expanding hermeneutics” particularly with “material hermeneutics” in contrast to the traditional text focused hermeneutics (Friis, 2015; Ihde, 2009; Tripathi, 2015a; Verbeek, 2003).

Capurro (2010) demonstrates that digital hermeneutics should be understood as the encounter between hermeneutics and digital technology, particularly in the realm of the internet. He raises the attention of IT researchers and hermeneuticists to the theoretical and practical relevance of the encounter of their areas of research that are sometimes considered as incompatible with each other (Capurro, Fruehbauer, & Hausmanninger 2007). Philosophy of technology is an exercise in cultural hermeneutics and ethical hermeneutics—a plea that the task of such philosophy is to work out suggestions concerning basic cultural and ethical conditions of technological and economic development. In principle, a philosophy of technology is concerned with fundamental questions concerning the proper understanding of a technology; how it affects human existence and reciprocally how human existence affects the technology (Irrgang, 2008; Kaplan, 2008). The task for a philosophy of technology is to analyze the phenomenon of technology, and the ways it significantly mediates and transforms our experience and perception of the lifeworld (Kaplan, 2008, 2011). The philosophers of technology “should reposition themselves” in the “R&D” position where “technologies are taking developmental shape, in think tanks, in incubator facilities, in research centers. Only then can truly ‘new’ and emerging technologies be philosophically engaged” (Ihde, 2012, p. 332).

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II

Information Ethics

Reconciling Social Responsibility and Neutrality in LIS Professional Ethics: A Virtue Ethics Approach

John T. F. Burgess

Abstract

An ethical dilemma occurs when two values are in opposition. One that arises in the context of professional practice has the potential to create a division among a profession's membership. This division in membership can lead to factionalism, which in turn may weaken the effectiveness of the affected profession. In the United States, the Library and Information Science (LIS) profession is host to a long-standing division between supporters of social responsibility and of library neutrality. This essay offers a virtue ethics approach as a framework to accommodate both values. Successful accommodation of both would promote greater professional coherence and simplify the ethical decision making processes of LIS practitioners. This chapter centers on a discussion of contemporary ethical crises that illustrate the social responsibility/library neutrality division and is a consideration of how a virtue ethics approach would facilitate using both core ethical concepts to address these crises in ways that are mutually compatible.

The Dilemma

This essay is a consideration of how a virtue ethics approach may be used to reconcile the concepts of library neutrality and social responsibility, two core but seemingly contradictory ethical values at the heart of the Library and Information Science (LIS) profession. Reconciling these two ethical values has the potential of strengthening the LIS profession's position in the academy and in its communities of practice. A stronger LIS profession means that it is in a better position to influence local and national information policies, and to advocate for the needs of the users of libraries, archives, and museums. Resolving these values has proven difficult, because in addition to the practical challenges of fulfilling contradictory obligations, the context in which the conflict emerged facilitated a cultural divide between those who advocated for one of these values over the other. For reconciliation to occur, a solution must provide a way for the two values to both be upheld with minimal compromise, and also create a shared purpose between the followers of each value,

bridging the cultural divide. The shared purpose proposed in this chapter is *eudaimonia*, or flourishing, a concept at the heart of some forms of modern virtue ethics (Hursthouse, 1999). Both movements of this effort, reconciling the cultural division and reconciling contradictory values, have the potential to improve conditions for the LIS profession. In order to understand how reconciling supporters of contradictory ethical values can strengthen a profession, it is first necessary to understand the role professionalism plays in defining the group identity of an occupation.

Professionalism as Claim to a Scholarly and Occupational Domain

Although many scholarly and occupational domains may seem well established and intuitive they only exist in the forms that they do today because like-minded people collaborated to establish the boundaries of those domains. These scholarly and occupational domains are dynamic, not static, requiring maintenance in a highly competitive environment that necessitates claims—over one or more social functions or institutions to be defended—against other rival interests (Abbott, 1998). Professionalism is key to one approach that can be used to defend claims over scholarly and occupational domains, and is the leading model employed by the LIS profession to do so. According to the *2012-2013 IFLA Annual Report*, the most current one available at writing, the International Federation of Library Associations (IFLA) had 137 national and international professional associations as members in 2013, representing the populations of six continents (IFLA Headquarters, 2015).

A professional organization then represents an ongoing attempt to create what amounts to an authoritative monopoly over an academic discipline, and to restricting access to membership in that monopoly through the creation of exclusive educational programs (Hjørland, 2000). If one of the main purposes of a professional organization is to defend a scholarly and occupational domain, then allowing a division between central ethical values to remain unreconciled risks definitional divergence in what constitutes the core scholarly domain of the profession. Additionally, allowing the division in LIS culture to persist risks divergence in the occupational domain as well, where one culture favors practices centered on library neutrality and the other on social responsibility. The following section takes a closer look at the place of ethics in the function of professional organizations, emphasizing the role of ethical codes, principles, and values in establishing and maintaining a professional identity and a professional culture that guides that identity.

The Functional and Genealogical Characteristics of Professionalism

In an influential analysis of the genealogical and functional origins of professional organizations, sociologist Magali S. Larson identifies “professional association, cognitive base, institutionalized training, licensing, work autonomy, colleague ‘control,’ and code of ethics”

as the key characteristics of professionalism (Larson, 1979, p. 208). These characteristics are functional in the sense that they are common elements used by most professional organizations to define the scope of their domain, and genealogical in that they are resources that each profession develops in accord with their own historical trajectories. By addressing each of these key characteristics, members of a professional organization can accomplish two things: define the border of a scholarly and practical sphere of influence, and establish a sense of professional identity that is similar to, but distinguishable from, the identities formed by professionals in other organizations. Leaving any of these key characteristics ambiguous or undefined for an extended period of time may result in functional and genealogical gaps, weakening the perceived status of a professional organization's claims to a scholarly and occupational domain, and may undermine the sense of professional identity.

A sense of professional identity provides an idea of how to behave while engaging in occupational work, but also creates a broader awareness of the professional's role in society. Pierce Butler, one of the influential early voices in the standardization of education in the LIS profession, casts the importance of defining a profession's characteristics as a way of coming to know that profession's "cultural motivations" (Butler, 1951, p. 245). Knowledge of an organization's functional characteristics is combined with knowledge of the profession's unique genealogical trajectory; the result is not only a professional identity, but a culture that reinforces the worth and goals of that profession and guides the acceptable ethical behavior of its members. LIS professionals may be expected to represent not only their institutions when they are engaged in public discourse, but their profession as well (Budd, 2008). When individual members of a professional organization call publicly for their members to act in ways that are not in line with the values of that organization, observers who are inside and outside of the profession are presented with rival interpretations of professional culture. If this diffusion of cultural identity involves the function or purpose of the profession, it might impact a professional ability to defend its authority over a scholarly and occupational domain.

A code of ethics is one of the functional characteristics of a profession mentioned by Larson (1979). Like other professions, the LIS profession is defined in part by the ethical values it emphasizes. The decision to emphasize one value against other possible values is a statement of identity, that is, we are the profession that values this concept of the good. Bonna Jones uses Paul Ricoeur's theory of narrative identity to relate the formation of the LIS profession's ethics with the formation of its identity (Jones, 2005). For this reason it is important for a profession to select its ethical vision in a way that is deliberate and coherent; ethics not only guide practice, but shape identity.

The fact that hundreds or thousands of individuals make up large professional organizations across the globe complicates the goal of ethical unity. We can expect that the different professional organizations will have different restrictions on the personal discourse of professionals, leaving some members of organizations freer to express their ideas of professional values than others. Individual professionals are also guided by a variety of ethical bases, representing many cultural perspectives, and a variety of economic and political realities. Given this diversity, it is difficult for an international profession to

maintain homogenous ethical concepts that centrally inform identity and practice. Regional as well as cultural differences may arise in which values are prioritized, as seen in research by Wallace Koehler (2003) on international regional differences in the preferred values of the LIS profession.

Diversity of ethical value only rises to the level of threat to domain when the values favored are seemingly in opposition to one another, that is where acting in accordance with one value requires acting in ways that would work counter to the other value. The situation is particularly challenging when adopting one of those values to the exclusion of the other would leave a significant impact on the identity of the profession. A contest over professional identity, if sufficiently divisive, may result in the weakening of the profession's capacity to defend its professional status or even the divide the one profession into two along value lines. The next section will advocate for functional and procedural characteristics of professionalism over the profession's ethical responsibilities to their communities of practice, this being one way to prevent division of a profession along ethical lines.

Professionalism is Not an Ethically Neutral Approach

Professionalism may be seen as an instrument designed to provide the benefits of monopoly to the membership of affiliated professional organizations and the academic programs that educate for them. This means that those invested in a profession have financial and status-based interests in seeing the profession persist. At some point it is conceivable that the self-interest that comes from perpetuating the existing organizational infrastructure of a profession might become more motivating than efforts to carry out the function of the profession. With this in mind, Dilevko sharply critiques the role of the LIS profession saying, "the notion of professionalism has devolved to a point where it is more about credentialism, careerism, and the accumulation of power and prestige than about the possession of meaningful knowledge than can be turned toward social good," (Dilevko, 2009, p. 1). Without affirming the position that the profession is mostly concerned with maintaining self-interests, it seems that strong self-interest might provide an impetus for minimizing internal conflicts, including ethical conflicts, before they can become disruptive. Working to minimize conflicts instead of resolving them may only hide the divisions instead of solving them, allowing the cultural divide to progress. This raises the question of how aware the LIS profession is of the culture or cultures that operate within it.

In a critique of the lack of class awareness in LIS education, Christine Pawley points out that turning to professionalism to defend a domain is not a neutral exercise, but instead is associated with managerialism and pluralism. These approaches result in a tendency to sort workers into professional and paraprofessional groupings in a reinforced hierarchical management structure, and to create a competitive milieu that over-emphasizes individual good over the collective good (Pawley, 1998). The tendency to divide, sort, and stack is a way of minimizing group identity and instead focuses on fulfilling the practical functions of any given librarial, archival, or curatorial position. Pawley further speculates that the

decision to ignore questions of classism in the formation of the profession suggests that the LIS profession is either concerned with following the model provided by other professions to the exclusion of self-reflection, or a willing implement of hegemonic domination (Pawley, 1998). Neither prospect, mimic or stooge, is an appealing way to self-identify.

Pawley's rhetorical approach seems designed not to condemn the LIS profession, but to motivate LIS professionals to choose a different means of self-direction, one that was informed more by the genealogical details for the profession's development rather than its functional characteristics. This call to develop a professional identity that was based on the genealogy of the LIS profession was taken up by philosopher of librarianship John M. Budd. Budd's work covered the history, function and identity of the profession in broad examination of professional purpose. One of Budd's concluding ideas for developing a mechanism specifically to help LIS professionals across a dialectical divide reconcile is to develop a type of practical ethical virtue called *phronēsis* (Budd, 2008). Related to the idea of prudence, *phronēsis* is a preference for acting in ways that are in line with one's sense of purpose. Budd leaves it to the wider LIS profession to decide what that sense of purpose might be. Another well-regarded philosopher of librarianship Charles Osburn (2009) provides a view that the purpose of the LIS profession is much greater than the library as service organization or even as a social institution (p. 234). Instead the profession has the responsibility to act as a steward over libraries and other information technologies where libraries are seen as a technology in the evolution of culture in the way that memory is a technology in the evolution of mind, and genes are in the evolution of the body (Osburn, 2009, p. 264). In being stewards of a cultural technology, LIS professionals would be obliged to both resolve cultural conflicts within the domain of the profession, and to take seriously the effects that decisions made about the nature of the profession would have on society as a whole. A goal this important can provide a counter motivation that is potentially greater than self interest and make the ethical non-neutrality of professionalism a positive for society instead of the negative that Pawley originally conceived of it as being. Combined with a mission to develop prudential ethics and an idea of the LIS profession as a cultural technology, we can turn from the question of why it is important to reconcile seemingly contradictory professional values to what those values are, and what makes them seem contradictory.

Library Neutrality and Social Responsibility

Library Neutrality

Library neutrality is an ethical approach to the development of library collections that favors a balanced, politically neutral collection policy (Samek, 2001). There are eight core values given by the American Library Association (ALA).¹ These are, access, confidenti-

1 While the ethical guidelines of the American Library Association only guides the actions of members of the ALA, they date back to 1939 and act as a precedent for other ethical guidelines in the broader LIS profession.

ality/privacy, democracy, diversity, education and lifelong learning, intellectual freedom, preservation, the public good, professionalism, service, and social responsibility (American Library Association, 2004). Library neutrality is not listed among that tally.² Instead library neutrality acts as an essential precursor to intellectual freedom. Intellectual freedom is, “the right of every individual to both seek and receive information from all points of view without restriction. It provides for free access to all expressions of ideas through which any and all sides of a question, cause or movement may be explored,” and, “intellectual freedom encompasses the freedom to hold, receive and disseminate ideas,” (American Library Association, 2015, para. 1-2). Intellectual freedom is also a contributing good to another core value, democracy, because one of the main reasons to value the ability to access all sides of a question is to be an informed participant in the democratic process. This means that library neutrality contributes meaningfully to at least two LIS core values.

In section five of the *IFLA Code of Ethics for Librarians and other Information Workers* neutrality is a listed value. There it is stated that

Librarians and other information workers are strictly committed to neutrality and an unbiased stance regarding collection, access and service. Neutrality results in the most balanced collection and the most balanced access to information achievable. Librarians and other information workers distinguish between their personal convictions and professional duties. They do not advance private interests or personal beliefs at the expense of neutrality. (IFLA Committee on Freedom of Access to Information and Freedom of Expression, 2012)

This is in keeping with the ALA's Code of Library Ethics section VII that states, “We distinguish between our personal convictions and professional duties and do not allow our personal beliefs to interfere with fair representation of the aims of our institutions or the provision of access to their information resources” (American Library Association, 2008).

These two ethical statements capture the idea that librarians ought to refrain from letting their own political philosophies or concepts of moral goodness influence not only their collection development policies, but also, the aims of their institution. This first ethical statement creates an obligation to uphold neutrality, and the second ethical statement creates a subordination of the personal to the institutional goals. Along with this subordination of the personal ethical stance to the institutional goals is the implication that institutions are obliged to follow the ethical values, codes, and guidelines of the LIS profession. However, problems might be seen to arise with this state of affairs when those involved in library governance, such as boards of trustees and deans who are not members of the ALA or other professional LIS organizations, are not bound to follow LIS ethical guidelines (Preer, 2008). In these cases, LIS professionals are encouraged to educate the members of their governing

2 Library neutrality is different from the question of the ethical neutrality of the LIS profession, which deals with how the institution of professionalization acts in an ethically neutral way. Library neutrality is an ethical value of a particular LIS practice. Even though the term “library neutrality” is used to differentiate a type of practice from “political neutrality”, the concept of neutrality is common to other LIS related disciplines where collection is involved, such as archives, special collections, and museums.

bodies on LIS values, including those relating to library neutrality and intellectual freedom (Preer, 2008). The only option open to practitioners in an instance where library governance ignores a core value in such a way that significantly abridges the rights of users—but is breaking no law—is to resign in conscience (Preer, 2008, p. 141) or to organize a collective response in a way that minimizes undermining the visible unity of the institution. Both of these actions are likely to result in significant hardships for the LIS professionals involved, and while professional organizations cannot compel an individual to take these actions, it is a sign of the importance of neutrality and intellectual freedom that such hard choices sometimes have to be made by the committed LIS practitioner.

Beyond the association with the value of democracy to society, library neutrality has immediate operational benefits. Practically speaking, a library or other institution with a collection development policy will often receive challenges to material that is held in their collections. The objective of the challenge is to have an item removed from the collection. When it is a book that is being removed, it is said that the book has been “banned.” The ability to point to library neutrality and note that inclusion in a collection does not equal endorsement, but, rather, is a reflection that a work makes an artistic or intellectual contribution to its field, is an effective countermeasure. This matters in regions where there is a significant cultural disconnect between the values of the local community of practice and the values of the LIS profession. Library neutrality also allows the institution to protect itself against challenges to its existence in those communities with values that differ strongly with those of the LIS profession. Libraries and related institutions are supported by tax money, tuition, or donations. If the library or similar institution seems to have a political or moral leaning that is contrary to local standards, members of the community might threaten to withhold, or actually withhold, funds in order to secure compliance with local instead of professional values. Remaining politically neutral in these cases provides an opportunity for the collecting institution to seek support from more politically or socially moderate members of their community. If it is possible to justify claims that a community library is a radical institution, then appeals to moderate sectors may be less persuasive

Social Responsibility

Given the many benefits of library neutrality to the LIS profession, it is understandable how a strong culture of defending that value would develop. Social responsibility also has a culture in support of it, with a different view of the priorities of the LIS profession. Social responsibility is the first value listed in the *ALA Policy Manual* in section A.1.1. It states that the

ALA recognizes its broad social responsibilities. The broad social responsibilities of the American Library Association are defined in terms of the contribution that librarianship can make in ameliorating or solving the critical problems of society; support for efforts to help inform and educate the people of the United States on these problems and to encourage them to examine the many views on and the facts regarding each problem; and the willingness of ALA to take a position on current critical issues with the relationship to libraries and library service set forth in the position statement. (American Library Association, 2013)

The idea behind social responsibility is that members of a society have a shared responsibility to support other members of that society. Often this means collaborating in a form of civil resistance in order to oppose perceived systemic legal, political, and economic injustices. In ALA, the Social Responsibilities Round Table (SRRT) co-ordinates advocacy for social responsibility. In an introduction to their activities, the SRRT states

Concern for human and economic rights was an important element in the founding of SRRT and remains an urgent concern today. SRRT believes that libraries and librarians must recognize and help solve social problems and inequities in order to carry out their mandate to work for the common good and bolster democracy. (American Library Association, 2014)

It is worth noting that as stated in the SRRT introduction, social responsibility contributes to the promotion of two other core values: democracy and the common, or public, good. Social responsibility is necessary for democracy, because if the rights of certain members of society are given less weight solely because of inclusion in a minority status, representation becomes unequal and democracy suffers. The public good is likewise the idea that members of a community of practice contribute resources individually so that all might benefit. Libraries and museums, particularly those devoted to the public, are tangible demonstrations of this concept in action. IFLA's statement on responsibilities towards individual and society do not focus on the same kind of shared public responsibility, and, rather, emphasize other core values such as access to information and diversity (IFLA Committee on Freedom of Access to Information and Freedom of Expression, 2012). However, as Al Kagan points out IFLA's Social Responsibilities Discussion Group (SDRG) has a more explicit social justice orientation towards the purpose of the LIS profession instead of an instrumentalist view (Kagan, 2005).

Social responsibility also provides an immediate practical good to the LIS profession. Recalling Osburn's position that libraries, archives, and museums are technologies of cultural evolution mentioned above, we see that in order to have a reason for being, library and information sciences have to be part of a society consisting of living, evolving cultures. Given this, and while systemic injustices continue to prevent the ideal range of cultural development in communities from taking place (specifically through privileging the hegemonic group's cultural norms), LIS professionals will exemplify a keystone species in the use of information in society, with unique abilities to enable other participants in society to thrive through aligning information practice with culture (Nardi & O'Day, 1999). One way that LIS professionals might do this would be by following their ethical imperative to oppose the economic and social injustices that prevent fair access to informational and artistic resources. What follows from this is that only when all citizens are truly encouraged to participate in the creative and entrepreneurial opportunities of a society will the library be fulfilling its purpose. In this way, social responsibility contributes to the narrative identity of the LIS profession by giving it a *telos*, or purpose. It likewise contributes to the professional culture by appealing not to functional ethical practices, but instead to moral goods that are thick with context and are relevant to all cultures in a society (Capurro, 2008).

The Two Values in Opposition

The apparent opposition between the two values operates in a direct proportional relationship. The extent that the LIS profession can claim to be politically neutral decreases as efforts to right political injustices increase. There is also the problem that from a perspective exclusively favoring one value, the other seems to lack legitimacy. For example, if one sees neutrality not as impartiality, but instead as being aligned with the assumed values of a hegemonic class, any preference for collecting informational and artistic material that confirms the worth and normative privileges of the hegemonic class prevents the liberation of subaltern and indigenous cultures in a society. Conversely, activism beyond the walls of the library may be seen as existing outside the conventional boundaries of recognized “library issues,” which are considered to be activities that directly pertain to the information management function of library and related institutions (Preer, 2008). From this second perspective the core value of social responsibility, which is concerned with the conditions of society beyond how information is used in it, may seem to belong in the domain of social workers instead of LIS professionals. Just as the two values point to opposing functional characteristics of the profession, they also sit across a genealogical gulf as well. Toni Samek’s *Intellectual Freedom and Social Responsibility in American Librarianship, 1967–1974* provides a detailed account of the cultural divide between supporters of these two values that grew out of generational and economic divisions during the American civil rights movement and protests of the Vietnam War. Samek concludes her work with a summary of how in 1973 and 1974 the ALA exerted institutional control over supporters of social responsibility, ensuring that neutrality was the dominant identity narrative going forward (Samek, 2001). With the emergence of social networking technology and the ease with which LIS professionals can voice their opinions, and collectively advocate positions on social justice issues, and with the actions of groups such as the Progressive Librarians Guild, the Library Freedom Project, A Librarian at Every Table, and the progressively minded Library Juice Press there is reason to believe that the value of social responsibility is returning to the forefront of LIS professional discourse. This implies that the conflict between the two values is likely to flare up again. This time however, there is an opportunity to break out of the discourse of competition between opposing values, and instead focus on ways to reconcile the two under a broader understanding of LIS ethics. That the two opposed core values overlap on the matter of recognizing the value of promoting democracy seems to be reason enough to believe that they are not in complete opposition, and might instead be reconciled if some commonality could be found.

Virtue Ethics as a Framework for Reconciliation

The framework I recommend for reconciling the two values is *eudaimonic* virtue ethics. A system of virtue ethics differs from other normative forms of ethics in ways that make it particularly well-suited for promoting an identity narrative and professional culture. *Eudaimonia*, means happiness through growth of well-being or prosperity translated as “flourishing.” *Eudaimonia* occurs when one fulfills either one’s *telos*, translated as “purpose” or one’s *ergon*, translated as “work.” *Phronēsis*, described above as prudence, is a type of wisdom that allows one to devote oneself to one’s purpose instead of other peripheral or temporary pursuits. By pursuing a virtue ethical standard that prioritizes prudence, focused on fulfilling a sense of purpose, and looking for success in terms of “flourishing,” the LIS profession has an opportunity to reconcile what might seem to be contradictory values when viewed from deontological or consequentialist perspectives.

Deontological ethics is concerned with the moral duties of ethical agents while consequentialism is the theory that morality is determined by examining real or imagined consequences of actions and appraising how those consequences affect human welfare. Together these two forms of ethics act as the current bases for most LIS professional ethics. Deontological ethics features heavily in LIS professional codes that appeal to the authority of human rights, especially those derived through reason. Consequentialism features heavily in LIS professional values that seek to promote a given outcome, like a well functioning democracy, a strong public good, or diversity. Consequentialism and deontology each feature the idea of the moral transgression, either in causing harm through action or inaction that runs contrary to human welfare or as a breach of one’s ethical duty. Virtue ethics, on the other hand, lacks this idea of a moral transgression, with the closest equivalent being the concept of *akrasia* or allowing oneself to act against one’s best interests.

This lack of concern over transgression means that using a virtue ethics approach is not designed to give explicit instruction in a specific ethical crisis, but, rather, to guide a long-term arc of growth in the profession. Transgressions serve not only to classify actions but actors as well, as good, bad, right, or wrong. Classifying an actor as wrong, when that actor is a fellow member of the LIS profession may have the unintended consequence of repressing that member’s participation in the ethical dialog that shapes professional culture, leading to marginalization and possible radicalization. Emphasizing instead how a given action is either prudent or imprudent in a given situation—meaning does it, in this one case, further the profession’s purpose or hinder it—leaves all ethical options on the table for consideration, and thereby promotes greater autonomy to choose whatever value, code, or principles seems most practical to use at the time. What separates virtue ethics from pragmatism is that in virtue ethics, resolving the situational dilemma is not the paramount concern. Instead, the primary concern is always fulfilling purpose in order to promote flourishing. The situational dilemma provides an opportunity to grow in experience and develop the virtues, which are simply good habits to practice. Instead of thinking of library neutrality and social responsibility as timeless, inviolable laws, it may be more beneficial

to think of them both as good habits to practice whenever at all possible while pursuing the LIS profession's purpose.

A virtue ethics approach for example might encourage building a collection that represents subaltern literature and perspectives whenever possible as a stated part of the collection development policy, while also having a policy in place that limits active political speech while engaging in public discourse, based on past experience of the relative good and harm that each socially responsible or neutral activity has resulted in. It becomes not a matter of either one good or the other, but how much of both can the library or related institution prudently employ at that moment. In each case, the narrative identity is of a profession that values prudence, favors results over ideology, and seeks collaborative input from all members, regardless of their preferred core value. Additionally, the benefit of having a definition of LIS's purpose such as that outlined by Osburn to which I have already referred, to steward technology that facilitates the evolution of culture, and that is both broad and ambitious is that it allows professionals who favor either functional or genealogical understandings of the LIS profession to find their own ways to flourish.

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Information Ethics in the Age of Digital Labour and the Surveillance-Industrial Complex

Christian Fuchs

Abstract

The rise of computing and the internet have brought about an ethical field of studies that some term information ethics, computer ethics, digital media ethics, or internet ethics. The aim of this contribution is to discuss information ethics' foundations in the context of the internet's political economy. The chapter first looks to ground the analysis in a comparison of two information ethics approaches, namely those outlined by Rafael Capurro and Luciano Floridi. It then develops, based on these foundations, analyses of the information ethical dimensions of two important areas of social media: one concerns the framing of social media by a surveillance-industrial complex in the context of Edward Snowden's revelations and the other deals with issues of digital labour processes and issues of class that arises in this context. The contribution asks ethical questions about these two phenomena that bring up issues of power, exploitation, and control in the information age. It asks if, and if so, how, the approaches of Capurro and Floridi can help us to understand ethico-political aspects of the surveillance-industrial complex and digital labour.

Information Ethics: Capurro and Floridi

For Rafael Capurro (2003), information ethics poses questions about the Enlightenment in the information age. It asks, "How can we ensure that the benefits of information technology are not only distributed equitably, but that they can also be used by the people to shape their own lives?" (p. 41). "Information ethics as a *descriptive theory* explores the power structures influencing attitudes towards information and traditions in different cultures and epochs. Information ethics as an *emancipatory theory* develops criticisms of moral attitudes and traditions in the information field at an individual and collective level" (p. 198). It explores and evaluates "the development of moral values in the information field, the creation of new power structures in the information field, information myths, hidden

contradictions and intentionalities in information theories and practices, the development of ethical conflicts in the information field” (p. 198).

Solving these tasks would require that information ethics both thinks about institutional design and cares about the self’s needs, such as friendship, respect, social relations, silence, laughter, etc. (Capurro, 2003). Capurro’s approach stresses the need for information ethics to pay attention to information technology’s ambiguities in society, such as the information gap, technological colonisation, cultural alienation, or oligarchic information control (2003). It also inquires into the tensions between freedom of communication/privacy, free online culture/copyright, the information rich and the information poor, information markets/digital democracy, the global and the local online community, oneness and unity/diversity and plurality online. It questions “structures of power and oppression” (p. 144).

Although he will not agree with my analysis because, based on his view of Heidegger’s position, he tends to see Hegel and Marx as representatives of a deterministic and totalitarian metaphysics that conceives of history as necessary progress, Capurro advances a concept of information ethics that in its stress on ambiguities of the information age is not unrelated to a Hegelian and Marxian dialectical logic that stresses the analysis of antagonisms (2003). Capurro’s work is based on a thorough knowledge of, and engagement with, classical, modern and contemporary philosophy. Kant’s philosophy has in this context been of particular relevance. Kant trusted that world peace could be achieved with the help of liberal democracy, world trade, and the political public (Capurro, 2003). Kant had the writing public in mind as the foundation for ethics and the Enlightenment. For Habermas, the communicating public is the foundation of ethics and politics. Capurro stresses that the internet, because of its own characteristics, cannot be a purely rational and enlightened space, but is one confronted by “semi-darkness” (Capurro, 2003, p. 83). The questions about freedom of the press and freedom of speech would, in the internet age, translate into questions of freedom of access. Capurro sees the United Nations as the best forum for discourses about internet ethics (Capurro, 2003). He thereby argues for an institutional discursive form of internet ethics. The moral values enshrined in the Universal Declaration of Human Rights are of central importance for information and internet ethics, specifically: human dignity, confidentiality, privacy, equality of opportunity, freedom of opinion and expression, participation in cultural life, and the protection of moral and material interests resulting from scientific, cultural, literary, and artistic production (2003). Capurro stands with the foregrounding of human rights in internet ethics in a Kantian tradition. This is expressed in his demand for a human right to freedom of communication on the internet. One certainly must see how such freedoms remain in asymmetric societies class-structured. Economic and political power limits freedom so that universal ethical and legal claims are practically undermined and remain unrealised.

Capurro (1981) first used the term information ethics in 1981 and also grounded it in his habilitation thesis *Hermeneutik der Fachinformation* in 1986. This was ten years before Luciano Floridi, who has also used the term information ethics (Floridi, 2013), published his first book, a book whose focus was not on ethics, but rather on epistemology. Similar to the tension between Manuel Castells and Jan van Dijk, the latter who invented the (non-

sensical) term the network society, there remains a tension between Capurro and Floridi concerning the grounding of information ethics. Floridi (2013, p. 23) says that it “seems that information ethics began to merge with computer ethics only in the nineties.” Capurro’s (1986) treatment of information ethics in his habilitation definitely merges aspects of information and computer ethics earlier on. Floridi does not seem terribly willing to engage with approaches alternative to his own definitions for the field in any significant detail.¹ At the same time one must say that Capurro’s habilitation is also not generally accessible because it was only published in German, which limits international academic discourse. Floridi (2013, p. 19) finds it “unfortunate” that there are different versions of computer, information and internet ethics and says that his approach is “a unified approach.” Floridi’s unifying approach is not universalist enough because it requires a quite particularistic approach that is implicitly grounded in actor network theory and post-humanist philosophy. It is, therefore, quite likely to attract criticism from other philosophers such as Capurro, who had already used the term information ethics before Floridi started doing so.

Floridi (2010c) argues that information and communication technologies (ICTs) have brought about a revolution that resulted in an “informational turn” (p. 11) that has been so profound that it has re-ontologised the world. The result would have been the emergence of a digitised infosphere, in which IT entities blur all boundaries and digitise all existence so that “*connected informational organisms (inforgs)*” come into existence (p. 12). A new form of ethical constructionism would be needed that fights a “struggle against entropy” (p. 17) and negotiates “a fruitful, symbiotic relationship between technology and nature” (p. 18). Inforgs are, for Floridi, not just human. Therefore information ethics is for him “an environmental approach, one which does not privilege the natural or untouched, but treats as authentic and genuine all forms of existence and behaviour, even those based on artificial, synthetic, hybrid, and engineered artefacts. The task is to formulate an ethical framework that can treat the infosphere as a new environment worth the moral attention and care of the human inforgs” (Floridi, 2013, p. 18). Humans would be confronted with information resources that they use for creating information products that are immersed into and affect an information environment as target (p. 20). Information ethics therefore would have to reflect on moral issues concerning information resources, products, and targets. Floridi adds that his initial model is too limited at a micro-level and needs to be complemented by macroethics (Floridi, 2013).

Floridi’s information ethics is non-, post- and trans-humanist; it wants to be an ethics that considers all beings as actors in an informational environment:

From an IE perspective, the ethical discourse now comes to concern information as such; that is, not just all persons, their cultivation, well-being, and social interactions, and not just animals, plants, and their proper natural life either, but also anything that may or will exist, like future generations; and anything that was, but is no more, like our ancestors. Unlike

1 There is for example only one brief clause mentioning Capurro in Floridi’s (2013, p. 308) book *The Ethics of Information*, whereas Capurro (2006, 2008) has published two major articles dedicated entirely to the discussion of Floridi’s work.

other non-standard ethics, IE is more impartial and universal—or one may say less ethically biased—because it brings to ultimate completion the process of enlarging the concept of what may count as a centre of moral claims, which now includes every instance of information, no matter whether physically implemented or not. (Floridi, 2013, p. 65)

Floridi's approach is pan-informational: he sees information everywhere, as a substance of the world. This becomes evident when he characterises the infosphere as "[m]aximally [...] a concept that, given an informational ontology, can also be used as synonymous with reality, or Being" (Floridi, 2013, p. 6) or as "informational metaphysics" (p. 307). Entropy is a crucial concept in Floridi's information ethics. Given that this concept tends to be used in thermodynamics as measure of disorder and chaos and in Shannon's mathematical theory of communication as a measure of the uncertainty of information, Floridi (2013) admits that the use of this notion in ethics can easily be misleading. He defines metaphysical entropy as "Non-Being," "absence or negation of any information" (p. 65), and "the decrease or decay of information leading to absence of form, pattern, differentiation, or content in the infosphere" (p. 67). Floridi formulates four information-ethical principles that apply to all actants and the totality of the infosphere:

- "entropy ought not to be caused in the infosphere (null law)"
- "entropy ought to be prevented in the infosphere"
- "entropy ought to be removed from the infosphere"
- "the flourishing of informational entities as well as the whole infosphere ought to be promoted by preserving, cultivating, and enriching their well-being." (Floridi, 2013, p. 71)

Capurro argues that given the existing information overload, ever more information is not necessarily desirable because humans cannot handle it and it fragments their communication. Floridi's information-ethical entropy-reduction and -destruction programme would therefore be mistaken. "But do we not have enough information in the information society? It seems that this imperative would make the situation even worse than it is!" (Capurro, 2003, p. 167). Capurro adds that Floridi's norms contradict "deleting viruses, SPAM and all kind of 'non useful' information" (Capurro, 2008, p. 170). Floridi's information ethics is also problematic from a political perspective: assume we live in Nazi Germany in the years 1933-1945, a society dominated by anti-Semitic, racist, fascist, imperialist ideology. This ideology has not ceased to exist after 1945. The principle of reducing metaphysical entropy implies that the presence of any ideology is good and that the more of it that is spread, the better. The real ethical imperative can however only be that Nazi ideology should be destroyed, i.e. informational entropy be increased, because it is the worst imaginable system of domination and exploitation. Floridi understands the infosphere and information ethics as expansive so that all entities are subject to moral judgments. In these terms one could define the Nazi regime as entropic because it sets out to annihilate Jews and political opponents—physically and thereby also their ideas. But what is the right answer to the Nazis? The only morally justified answer can be Adorno's "new categorical imperative"

that humans “arrange their thoughts and actions so that Auschwitz will not repeat itself, so that nothing similar will happen” (Adorno, 1973, p. 365).

In the situation of being inside Nazi Germany this then actually means that the ethical imperative must be to decrease homogeneity by increasing political entropy, i.e. by conducting anti-fascist attacks that aim to kill Hitler and other Nazi leaders and taking measures that aim to annihilate Nazi ideology. Destroying Nazism with violent and political means increases political entropy in order to enable a society that is not based on a project of extermination. Anti-fascist resistance is therefore in Floridi’s terms the increase of political entropy. It aims at a society that does not systematically reduce entropy. Floridi’s ethics cannot grasp these complexities. His ontology fails to provide an ethical imperative that can challenge Nazism and fascism. If any information is good, then also the ideologies of Nazism and fascism are good. Floridi argues that “because we have no reason against the intrinsic value of Being in all its manifestations, we should expand an environmental approach to all entities, including non-sentient beings. The injunction is to treat something as intrinsically valuable and hence worthy of moral respect by default, until ‘proven guilty’” (Floridi, 2013, p. 318). The assumption that humans are or can be on one ontological level with non-human entities was proven wrong by Auschwitz. A biologist and anti-Semitic ideology that describes groups of people as subhumans and parasites enabled Auschwitz. There are substantive historical reasons why we should refuse philosophies such as post-humanism, actor network theory, and Floridi’s philosophy that argue that humans and non-humans are ontological equivalents.

For Floridi, companies, machines, or parties (Floridi, 2013) are also moral agents, which in his view is an assumption that holds the advantage of being “non-anthropocentric” (Floridi 2013, p. 58). Floridi positively acknowledges the non-anthropocentrism, or what some call “anti-speciesism” of deep ecology (p. 133) and argues that his information ethics takes “this inclusive approach [...] further” (p. 133). Floridi does not mention that critics of deep ecology have characterised versions of it as an eco-fascist movement (Bookchin, 1987; Dittfurth, 1996). Putting non-human beings onto the same moral level with humans, as both deep ecology and Floridi do, decentres human morality and affords an undifferentiated moral obligation to all living beings irrespective of origin. It is important to see how such approaches to decentring human morality are linked to strategies of exploitation in capitalism that reify human life: both treat human bodies and minds like things. Nazi ideology is an extreme form of reification. Strategies of exploitation in capitalism reify human beings: they treat their bodies and minds like things. The Nazis ideologically justified killing Jews by comparing them to parasites, which put humans on the same ethical level with animals. Anti-humanism is one of the first logical steps to fascism. Practical and ethical anti-fascism argues for the specificity and difference of the human being in relation to non-humans. This does not imply that humans should treat nature recklessly, but that the ethics of nature and the ethics of society have different qualities and principles.

Capurro (2008) argues, against Floridi’s position, for a human-centred information ethics by stressing the difference between humans and things. Things-as-such would be morally worthless and humans “per se invaluable” (p. 168). The value of things, such as

their exchange-value measured in money or their moral value associated with emotional attachment, arises out “of our relationship to others” (p. 168). Only humans have the capacity to conduct economic evaluation (evaluating things) and moral evaluation (“evaluating ourselves” [p. 169]) and to relate both to each other. “As far as we know, we are the only living beings capable of mirroring the world as the common invaluable horizon that allows us to evaluate things” (169). Capurro (2008, p. 171) concludes his critique of Floridi by asking: “We have some 6 billion moral agents on earth. Why should we create millions (?) of artificial ones [to whom we assign ‘moral responsibility’]?” Capurro’s human-centred ethics is not anthropocentric or individualistic, but social-relational. It asks us to “relativise our ‘egocentric’ ambitions” and poses the ethical question: “What is good for our bodily being-in-the world with others in particular?” (Capurro 2006, p. 182).

Floridi (2013) conceives a business as an information process, in which the business provides, as actor, goods or services to customers. He stresses that “profit is clearly not part of the essence of a business” (p. 288) and that maximising profit is not a company’s ethical imperative. Defining an economic organisation by orientation on exchange, profit, or money is indeed a crude form of fetishism that naturalises capital accumulation. A general definition of the economy is that it is a system, in which humans produce use-values that satisfy human needs. An economic organisation is an entity specialising in the production of specific use-values in order to satisfy human needs. Raymond Williams points out in his *Keywords* that since the 15th century the English word “customer” has described “a buyer or purchaser” (Williams, 1983, p. 79). It is inevitably bound up with the modern forms of the market and capitalism. It is therefore inappropriate that Floridi uses the term customer when defining an economic organisation as “the provider of goods or services to customers” (Floridi, 2013, 280). This formulation implies that markets, money, exchange-value, and trade are inherent in all economies. The language often used in higher education systems that have been strongly commodified reveals the nature of this notion: students are often termed “customers” because they pay for (or rather go into debt, except if they have rich parents) access to education. The existence of online and offline gift economies, where people voluntarily give goods or services to others without the expectation of reciprocity or obtaining something in return, shows that trade is not an essential feature of the economy. A society of customers is a market and exchange society.

The three primary questions for information business ethics are for Floridi (2013, p. 284): “1) What is provided? 2) How is it provided? 3) What impact does it have?” It is hard to see how the first two questions relate to ethics, whereas the third one can be related to ethics if one asks how the economy and economic organisations can have positive impacts that benefit all. The imperative for Floridi’s information business ethics is fostering “human flourishing and avoiding wastefulness.” He understands wastefulness as “*destruction, corruption, pollution, and depletion* of (parts of) reality” (p. 290). Ecological problems are related to the mode of economic production, but are not the economy’s only ethical dimension. It is difficult to frame exploitation—the main ethical social problem of all class societies—in terms of waste and entropy. It is worth highlighting that Floridi’s analysis does not problematise exploitation. His information ethics does not give importance to

the phenomena of class and exploitation and is, therefore, particularly unsuited for a critique of exploitation in the information age. For Marx, exploitation means that one class whose labour produces use-values is deprived and excluded from them by another class that takes private ownership of these use-values, for the purposes of facilitating exchange and accumulation (Marx, 1867). The producing class is deprived of wealth and the owning class increases its wealth. Exploitation is a question of distributive justice and ownership justice, not one of waste, order, and disorder. The ethical social imperative for a critical theory of the economy and society is therefore that one needs to “overthrow all relations in which man is a debased, enslaved, forsaken, despicable being” (Marx, 1844, p. 182).

Humans cannot exist without, and only exist in and through, social relations. Society is social-relational; it is based on human co-operation (Fuchs, 2008). There can be no society without relations, communication, and co-operation. But a society without competition, war, markets, egoism and exchange is perfectly possible (Fuchs, 2008). Exploitation and domination limit our capacities to fully organise society by giving particularistic advantages to one group or individual over others. The ethical imperative is therefore to question and undo exploitation and domination and to create conditions that benefit all, i.e. a classless society without exploitation and domination.

Marxist political economy of information and communication is based on an inherently ethical imperative: it “goes beyond technical issues of efficiency to engage with basic moral questions of justice, equity and the public good” that concern information and communication (Murdock & Golding, 2005, p. 61). The “moral dimension remains strong in Marxian political economy because it provides a powerful defence of democracy, equality, and the public sphere in the face of dominant private interests” (Mosco, 2009, p. 34). Critical political economy of information and communication therefore analyses “the power relations, that mutually constitute the production, distribution, and consumption of resources, including communication resources” (Mosco, 2009, p. 2).

Information Ethics in the Age of Digital Labour and Edward Snowden

I do not see myself as a representative of computer, information, digital media, or internet ethics, but am rather interested in a critical theory and critique of the political economy of information, communication, technology, the media, and the internet. Such an approach aims to theorise these phenomena’s political economy and their power structures, to empirically analyse human realities within such structures, to conduct ideology critique of reifications of information, and to inform social struggles for alternatives. Ethics is one of the dimensions of this approach, but not its exclusive one. It also requires social theory and empirical social research. In this section, I want to discuss two information-ethical problems: digital labour and internet surveillance.

Digital Labour

The production of information and information technology is embedded into an international division of information labour (Fuchs, 2014, 2015). There are new technologies, but capitalism, imperialism, class, and exploitation continue to form the heart of society and international relations and shape the modes of information production, distribution, and consumption that have become so important in the 21st century. Critical scholars introduced the notion of the new international division of labour (NIDL) in the 1980s in order to stress that developing countries had become cheap sources of manufacturing labour and to highlight the rise of transnational corporations (TNCs) (Fröbel, Heinrichs & Kreye 1981). “Digital labour” is not a term that only describes the production of digital content. It is a category that rather encompasses the whole mode of digital production that contains a network of agricultural, industrial and informational forms of work that enables the existence and usage of digital media. The international division of digital labour (IDDL) is the new international division of labour in the context of the production and productive use of digital media. The international division of digital labour is a complex network that involves global interconnected processes of exploitation, such as the exploitation of Congolese slave-miners who extract minerals that are used as the physical foundation for ICT components that are manufactured by millions of highly exploited Fordist wage-workers in factories such as Foxconn, low-paid software engineers in India, highly paid and highly stressed software engineers at Google and other Western software and internet corporations, or precarious freelancers in the world’s global cities who are using digital technologies to create and disseminate culture, poisoned eWaste workers who disassemble ICTs and thereby come in touch with toxic materials, etc. (Fuchs, 2014, 2015). Let us have a look at two forms of labour involved in the IDDL: mining of ICT-related minerals in the Congo and hardware assemblage in China.

Capitalism as the dominant mode of economic activity has not brought older modes of production to an end, but has rather subsumed them. Slavery and patriarchy continue to exist and to be modes of organisation for the super-exploitation of labour. In 2014, 35.8 million people lived in modern forms of slavery. Modern slavery includes slavery, debt bondage, forced marriage, sale and exploitation of children, forced labour, and human trafficking (Global Slavery Index 2014). Slaves in the Democratic Republic of Congo mine a specific portion of the minerals (such as cobalt, coltan, and tin) needed for creating electronics and computing equipment (Fuchs, 2014). In 2014, the DRC was ranked 186 out of 187 countries in human development; 87.8% lived in extreme poverty on less than US\$ 1.25 per day, and 38.8% of the population aged 15 or older was illiterate (Human Development Indicators, 2014). A combination of civil war and neo-imperialist exploitation of labour and the country’s resources (that do not benefit local people, but primarily Western companies) has created the paradox—typical for capitalism—that one of world’s richest countries in natural resources is socially the world’s poorest country. In 2014, the political situation in the DRC saw continued hostilities involving government forces, rebels, and fighters from Uganda and Rwanda. The country’s inhabitants experienced war crimes, crimes against humanity, forced recruitment of children as soldiers, mass rapes, and the killing, mutilation

and torture of civilians (Human Rights Watch 2014). According to estimations, more than 760 000 people in the DRC were slaves in 2014 (Human Rights Watch 2014). Following Nigeria, it is the country with the second largest absolute number of slaves.

Apple was, according to the Forbes 2000 list of the largest transnational companies, the world's 15th largest company in 2014 (Forbes, 2014). Its profits were US\$ 37 billion in 2013 and 39.5 billion in 2014 (Apple SEC Filings, 2014). In 2014, iPhones accounted for 56% of Apple's net sales, iPads for 17%, Macs for 13%; iTunes, software and services for 10% (Apple SEC Filings, 2014). According to calculations published by Chan, Pun and Selden (2013, p. 107), the Chinese labour involved in manufacturing an iPhone makes up only 1.8% of the iPhone's price, while Apple's profit margins are 58.5% and Apple's suppliers, such as the Taiwanese company Hon Hai Precision that is also known as Foxconn, account for 14.3% of revenues. Applying this information shows that the iPhone 6 Plus does not cost US\$ 299 because of labour costs, but rather because Apple on average earns US\$ 175 profits, Foxconn US\$ 43 profits, and the workers assembling the phone in a Foxconn factory in total US\$ 5. The high costs are a consequence of a high profit rate and a high rate of exploitation that are achieved by organising digital labour within an international division. According to the CNN Global 500 2012 list,² Foxconn is the fifth largest corporate employer in the world. In 2011, Foxconn had enlarged its Chinese workforce to a million, a majority being young migrant workers coming from the countryside (SACOM, 2011). Foxconn assembles the iPad, iMac, iPhone, the Amazon Kindle, and various consoles (by Sony, Nintendo, Microsoft). When 17 Foxconn workers attempted to commit suicide between January and August 2010 (most of them succeeded), the topic of bad working conditions in the Chinese ICT assemblage industry became widely known. This circumstance was followed up with a number of academic works that showed that workers' everyday reality at Foxconn includes low wages, working long hours, frequent work shift changes, regular working time of over 10 hours per day, a lack of breaks, monotonous work, physical harm caused by chemicals such as benzene or solder paste, lack of protective gear and equipment, forced use of students from vocational schools as interns (in agreement with the school boards) that conduct regular assembly work that does not help their studies, prison-like accommodations with 6-22 workers per room, yellow unions that are managed by company officials and whom the workers do not trust, harsh management methods, a lack of breaks, prohibitions that workers move, talk or stretch their bodies, the requirements that workers stand during production, punishments, beatings and harassments by security guards and disgusting food (Chan, 2013; Chan, Pun & Selden 2013; Fuchs 2014; Pun & Chan 2012; Qiu 2012; Sandoval 2013).

Apple claims in its *Supplier Responsibility 2014 Progress Report* that it drove its "suppliers to achieve an average of 95 percent compliance with our maximum 60-hour work week."³ That the corporation prides itself for this fact shows that imperialism's international division

2 http://money.cnn.com/magazines/fortune/global500/2012/full_list/, accessed on October 29, 2013.

3 https://www.apple.com/supplier-responsibility/pdf/Apple_SR_2014_Progress_Report.pdf, accessed on December 22, 2014.

of labour is not just exploitative, but also racist in character: Apple assumes that for people in China, 60 hours is an appropriate standard of working time. Apple's argument is based on the Western assumption that Asians have a strong work ethic and are therefore suited to work long hours for comparatively low wages. It undermines the universal assumptions enshrined in the ILO Convention that there is a maximum of hours that human labour should not exceed because otherwise life is reduced to labour-time.

Apple says that for its 2014 report it audited the working conditions of more than 1 million workers. It is however a fact that these audits are not conducted independently and that the results are also not reported independently. Apple doesn't rely on independent corporate watchdog organisations such as Students & Scholars against Corporate Misbehaviour (SACOM), but rather conducts studies that one can only consider to be biased. Workers who are studied by their own employers will certainly not report what they think is wrong because they are afraid to lose their job. Apple's report is written in a style and language that conveys the impression that suppliers and local agencies that behave immorally are the problem: "Our suppliers are required to uphold the rigorous standards of Apple's Supplier Code of Conduct, and every year we raise the bar on what we expect. [...] We audit all final assembly suppliers every year." That such behaviour is however driven by TNCs' demand to produce cheaply and quickly is never mentioned. Apple uses the ideological strategy that it emphasises positive things about itself and negative things about suppliers in order to distort attention from its own responsibility for the exploitation of Chinese workers. In 2014, SACOM published a new report on working conditions at Apple's supplier Pegatron in Jinagsu,⁴ where tens of millions of the iPhone 6 have been manufactured. Undercover scholars conducted the research.

Workers told SACOM researchers that they sometimes have to work very long hours till early morning, often 12 to 15 hours a day, and sometimes even up to 17 to 18 hours a day. In other words, the total amount of overtime hours can be up to 170 to 200 hours a month, which, in turn, means that workers have to work more than 360 hours a month. (SACOM, 2014, p. 2)

Further issues at Pegatron included an unsafe and unhealthy working environment, illegal charges for health checks, insufficient health information, precarious dispatch labour, exclusion from social insurance, difficulties to resign from the job, scolding, fines, repressive management, and lack of trade unions. The report concludes:

Pegatron and its buyer Apple have continuously engaged in poor labour practices and abuses of workers' rights. Even though the Apple Inc. has established its code of conducts since 2005, the working conditions in Apple's supply chain are still far from satisfactory. This report, along with the earlier investigative reports released by SACOM throughout the years, have continuously demonstrated that Apple and its suppliers in the Chinese mainland have never treated their workers with dignity. (SACOM, 2014, p. 21)

4 See also the 2013 investigation by China Labor Watch: <http://www.chinalaborwatch.org/report/68>. A comparable case is the iPhone 6 assemblage at Jabi in Wuxi: <http://www.chinalaborwatch.org/report/103>

A 2014 BBC undercover report unveiled that workers assembling iPhones 6 in Pegatron factories are so overworked that they fall asleep during work and in their breaks.⁵

An ideology is a claim that does not correspond to and tries to distort the representation of reality. SACOM's studies show that reality in the factories of Apple's Chinese suppliers is different than reported in the company's own reports. Apple tries to distort presentations of labour in its supply chain by ideology in order to forestall critique of capitalism. Why is the exploitation of digital labour, for which the Congo and the Foxconn cases are good examples, ethically problematic? Capitalistically produced digital media are not accessible for all people in the world and not to the same extent and with the same benefits. The benefits of the one, especially digital media companies that derive large monetary benefits from selling hardware, software, content, access, audiences, and users, stem from the misery of the labour of others. There is not just a power asymmetry immanent in the IDDL, but a fundamental injustice that creates conditions that deprives digital workers of their humanity, makes them work under conditions not adequate for any human being, and results in distributive injustice so that the benefits from digital media are asymmetrically distributed so that the class of digital capitalists enriches itself by depriving others. Let us go back to two fundamental questions that Capurro's information ethics ask: "How can we ensure that the benefits of information technology are not only distributed equitably, but that they can also be used by the people to shape their own lives?" (Capurro, 2003, p. 41) and "What is good for our bodily being-in-the world with others in particular?" (Capurro, 2006, p. 182). The problem of the capitalist mode of organising digital media, i.e. the international division of digital labour, is that it creates distributive injustice. It only enables some people to use these media to shape their own lives. It results in conditions of slavery and exploitation, in which humans cannot determine their own lives and cannot own the products their life-activities create. It constitutes a being-in-the-world with others, where one class appropriates the labour and products of digital workers. It thereby creates inverse interdependent welfare (Wright, 1997) for itself coupled with the deprivation of opportunities for others and their exclusion from this appropriated welfare.

Internet Surveillance in the Age of Edward Snowden

In June 2013, Edward Snowden revealed with the help of *The Guardian* the existence of large-scale internet and communications surveillance systems such as Prism, XKeyscore, and Tempora. According to the documents he leaked, the National Security Agency (NSA), through the Prism programme, obtained direct access to user data from seven online/ICT companies: AOL, Apple, Facebook, Google, Microsoft, Paltalk, Skype, and Yahoo!⁶ The Powerpoint slides that Edward Snowden leaked refer to data collection "directly from the

5 "Apple 'failing to protect Chinese factory workers.'" <http://www.bbc.com/news/business-30532463> *BBC Online*, December 18, 2014.

6 "NSA Prism program taps in to user data of Apple, Google and others." *The Guardian Online*. June 7, 2013. <http://www.theguardian.com/world/2013/jun/06/us-tech-giants-nsa-data>

foremost advertising companies that appropriate and commodify data on users' interests, communications, locations, online behaviour and social networks. They make profit out of data that users' online activities generate. They continuously monitor usage behaviour for this economic purpose. Since 9/11 there has been a massive intensification and extension of surveillance that is based on the naïve technological-deterministic surveillance ideology that monitoring technologies, big data analysis and predictive algorithms can prevent terrorism. The reality of the murder of a soldier that took place in the South-East London district of Woolwich in May 2013 and the Charlie Hebdo attacks in Paris in January 2015 shows that terrorists can use low-tech tools such as machetes and conventional guns for targeted killings. High-tech surveillance will never be able to stop terrorism because most terrorists are smart enough not to announce their intentions on the internet. It is precisely this surveillance ideology that has created intelligence agencies' interest in the big data held by social media corporations. Evidence has shown that social media surveillance not just targets terrorists, but has also been directed at protestors and civil society activists.¹² State institutions and private corporations have long collaborated in intelligence, but the access to social media has taken the surveillance-industrial complex to a new dimension: it is now possible to obtain detailed access to a multitude of citizens' activities in converging social roles conducted in converging social spaces.

The profits made by social media corporations are not the only economic dimension of the contemporary surveillance-industrial complex: The NSA has subcontracted and outsourced surveillance tasks to approximately 2000 private security companies that make profits by spying on citizens.¹³ Booz Allen Hamilton, the private security company that Edward Snowden worked for, is just one of these firms that follow the strategy of accumulation-by-surveillance. According to financial data,¹⁴ it had 24 500 employees in 2012 and its profits increased from US\$ 25 million in 2010 to 84 million in 2011, 239 million in 2012, 219 million in 2013, and 232 million in 2014. Surveillance is big business, both for online companies and those conducting the online spying for intelligence agencies.

Users create data on the internet that is either private, semi-public, or public. In the social media surveillance-industrial complex, companies commodify and privatise user data as private property and secret services such as the NSA driven by a techno-determinist ideology obtain access to the same data for trying to catch terrorists that may never use these technologies for planning attacks. For organising surveillance, the state makes use of private security companies that derive profits from organising the monitoring process.

User data is in the surveillance-industrial complex first externalised and made public or semi-public on the internet in order to enable users' communication processes, then privatised as private property by internet platforms in order to accumulate capital, and finally particularised by secret services who bring massive amounts of data under their

12 "Spying on Occupy activists." *The Progressive Online*. June 2013. <http://progressive.org/spying-on-occupy-activists>

13 "A hidden world, growing beyond control." *Washington Post Online*. <http://projects.washingtonpost.com/top-secret-america/articles/a-hidden-world-growing-beyond-control/>

14 SEC Filings, <http://investors.boozallen.com/sec.cfm>).

control, data that is made accessible and analysed worldwide with the help of profit-making security companies. Why is the surveillance-industrial complex problematic from an ethical point of view? Let us again have a look at the foundational questions of Capurro's information ethics. "How can we ensure that the benefits of information technology are not only distributed equitably, but that they can also be used by the people to shape their own lives?" (Capurro, 2003, p. 41). "What is good for our bodily being-in-the world with others in particular?" (Capurro, 2006, p. 182). The surveillance-industrial-complex contains fundamental power asymmetries: the involved nation states argue that they have to monitor the communication of all citizens worldwide beyond nation states, but at the same time they want to hinder citizens monitoring state power, as the repression against WikiLeaks, Chelsea Manning, and Edward Snowden shows.

The surveillance-industrial-complex is also asymmetrical in terms of knowledge because it wants to deceive the world by not making transparent the existence of global surveillance systems. This is a strategy frequently found in surveillance that is hard to criticise because it operates invisibly and covertly. Unknown powers can hardly be questioned. The world should be grateful to Edward Snowden and award him and Julian Assange the Nobel Peace Prize for having made many unknowns known so that global society has become better enabled to criticise the existing power elites that operated behind their backs. Surveillance, as the collection of information about people in order to enforce power structures within a society is not automatically a bad thing. If a government or civic watchdog for example monitors financial flows and corporate power in order to uncover and overcome corporate crime and corporate tax evasion in order to increase the public tax revenues, then the use of the surveillance power strengthens the public good. At a macro-level this form of surveillance therefore benefits society at large. Within a society that is based on asymmetric power structures, not all forms of surveillance are morally problematic. The surveillance-industrial complex that Snowden exposed is morally problematic because it is based on the economic exploitation of digital labour, the deception of the public, a power asymmetry that tries to repressively block watchdogs' monitoring of state and corporate power, and surveillance ideologies that create the false impression that more surveillance results in more security and solves political and social problems.

The information technologies of the surveillance-industrial-complex disempower citizens who cannot shape their own conditions of information and it creates multiple power asymmetries that question the freedoms of information, thought, opinion, and communication that liberal societies claim as their fundamental moral values. The surveillance-industrial complex shows that a negative dialectic of the Enlightenment is at play in contemporary society: it constantly undermines the very liberal values of the Enlightenment, such as the freedoms of thought, speech, press and assembly as well as the security of the person and of their personal property. Prism shows how in supposedly liberal democracies dangerous forms of political-economic power negate Enlightenment values (Fuchs, 2015).

Surveillance ideologies—such as "if you got nothing to hide, then you got nothing to fear," "for security we need to compromise some privacy," "surveillance will stop crime and terrorism"—are mistaken for many reasons:

- Terrorists are not so silly as to communicate online what they are doing or intend to do.
- There is no technological fix to political and socio-economic problems.
- Law and order politics fosters fascist potentials in society.
- Categorical suspicion turns the presumption of innocence (“innocent until proven guilty”) into a presumption of guilt (“terrorist until proven innocent”).
- People who join fundamentalist groups often experience precarity, unemployment, lack of good educational opportunities, and racism. Welfare state politics, not politics of control, are the best means for countering fundamentalism.

Times of crisis are times of ideological scapegoating in order to distract attention from causes of social problems. In 2008, a major crisis of capitalism started. It also translated into a crisis of many states and societies. The emergence of heavy ideological scapegoating is therefore no surprise. Contemporary scapegoats in the UK context include Romanian and Bulgarian workers, the European Union, benefits recipients, the unemployed, the poor, black youth, international students, immigrants, Muslims, Jews, South Europeans, etc. Ideology deflects attention from social problems, inequality, precarious labour, and unemployment. It deflects attention from the problems of capitalism.

Moral panics that call for more surveillance and scapegoat certain groups can amplify and result in more terrorism and crime: if groups or individuals feel unfairly discriminated (e.g. by racism, classism, sexism, scapegoating, etc.), they may react to this circumstance with an intensification of hatred against those whom they perceive hate and discriminate against them. If certain groups or individuals are labelled as terrorists or criminals or denied certain possibilities (such as entering a certain country, area or building), there is the risk that an intensification or creation of hate can set in, which can result in the creation or intensification of the very phenomenon (crime, terror, etc.) that the algorithm, surveillance technology, ideology, law and order policy, etc. wanted to prevent in the first instance. The European protests and rejections of austerity, neoliberalism and capitalism are, in my view, the only reasonable voices in the crisis discourse. Slavoj Žižek (2015) pinpoints this circumstance by saying that a “renewed Left” is “the only way to defeat fundamentalism, to sweep the ground under its feet.” Syriza’s electoral victory in Greece is an important beacon of hope for the Left in Europe, a hope for a world beyond ideology, right wing populism, and neoliberalism.

Conclusion

A critical theory and critical political economy of information, communication, technology, the media, and the internet needs to be a theoretical, empirical, ethical and political inquiry into the information society’s power structures. It must also uncover, question, and help to overcome the inequality, power asymmetries, exploitation, ideologies, and forms of domination that emerge in the context of information and information technologies. The question therefore arises of how information ethics should best be conceived. I have

analysed in this contribution the relationship between two versions of information ethics, the ones formulated by Rafael Capurro and Luciano Floridi. Floridi's approach is highly problematic because it decentres the human and thereby risks relativising the very foundations of ethics. He does not engage with the critiques of deep ecology, post-humanism, and actor network theory that face the same problems as his version of information ethics. Floridi (2013, p. 308) argues about a specific claim that once was made against him is: "I still recall one conference in the nineties when a famous computer ethicist compared me to a sort of Nazi, who wished to reduce humans to numbers, pointing out that the Nazis used to tattoo six-digit identity tags onto the left arms of the prisoners in their Lager. This is rhetorical nonsense." Although this is certainly an overdrawn claim, Floridi simply dismisses it and does not ask himself if there may be certain problematic assumptions at the heart of his philosophy that make some people feel politically uncomfortable and make them think that it trivialises the horrors of Nazism.

Floridi overlooks that biologism, as an ideology that equates humans and non-humans by arguing that certain humans are like parasites or other biological organisms, or by projecting biological mechanisms into society, is one of the important logical foundations of Nazism. It makes it logically possible to treat humans like things and to ideologically argue that they do not deserve to exist. Floridi certainly can reject this line of argument because he argues that all existence is informational and is valuable and should not be destroyed. This however also implies that not just computer viruses, but also the human immunodeficiency virus and other virus illnesses that can threaten human lives should be preserved, which means the death of humans. Such assumptions in some versions of deep ecology threaten human lives and have resulted in a form of eco-fascism. Floridi does not engage with such approaches and their problems. The point is that an ontological equalisation of humans and non-humans has historically been the foundation of repression and that ontological equalisations as right-wing ideology continues to exist for example in the ideology of some animal rights activists and the deep ecology movement. The social-ecological philosopher Murray Bookchin warned in this context

Deep ecology contains no history of the emergence of society out of nature [...] 'Biocentric democracy,' I assume, should call for nothing less than a hands-off policy on the AIDS virus and perhaps equally lethal pathogens that appear in the human species. [...] Deep ecology, with its Malthusian thrust, its various centricities, its mystifying Eco-la-la, and its disorienting eclecticism degrades this enterprise into a crude biologism that deflects us from the social problems that underpin the ecological ones and the project of social reconstruction that alone can spare the biosphere from virtual destruction. (Bookchin, 1987)

Floridi's information ethics faces the danger of reproducing some of the problems of deep ecology.

Rafael Capurro has, in contrast to Floridi, grounded a form of information ethics that foregrounds human social relations as constitutive for the ethical understanding of information technologies and society. One can well disagree with Capurro on how to assess Heidegger, Kant, Vattimo, Marx, Hegel, etc., but in terms of the bottom line it is clear that his ethics cares about the deconstruction of asymmetric power structures and ideologies,

which is a good foundation for constructive agreement and disagreement with political economy approaches. Floridi's pan-informational ethics foregrounds the reduction of entropy and the centrality of human and non-human actors that are conceived of as having in common the simple quality that they are merely informational. It also stresses the struggle against all beings' entropy. It is hard find this approach fruitful if one wants to develop a critical theory and critical political economy of information, the information society, and information technology.

Information ethics is an important philosophical undertaking that we require for a better understanding of the 21st century. We require however, not just a general understanding, but specifically a critical understanding of the information society. Rafael Capurro's works are an important and indispensable contribution towards this philosophical task.

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Intercultural Information Ethics: A Pragmatic Consideration

Soraj Hongladarom

Abstract

Discussions in intercultural information ethics often focus on the problem of the universality of values, an understandable focus since cultures, when face to face with one another as a result of globalization, are bound to conflict over differing values. As information technology greatly facilitates the movement of thoughts and ideas, these clashes happen at an exponentially increasing rate. Such discussions usually occur between those who believe in a set of universal values and those who oppose the idea. Such discussions and debates thus often find themselves in a stalemate; they show every characteristic of an arcane philosophical dispute that does not seem to go anywhere. The following chapter argues for the rejection of the sterile and politicized debates that define the above stalemate. Instead of looking towards which set of values are universal and how they are going to be justified, or how a set of values can be defended against others values claiming to be universal, the following paper instead proposes that talk of universality and cultural distinctiveness be discarded altogether in favor of asking which set of values serve the existing goals and fit with the desires of the people for a particular period of time and place more than other values. In short, the following paper argues for an abandonment of the question of which values are true and asks instead which values are useful.

To state the obvious, the world has become an intricately interconnected place through the use of information and communication technologies (ICTs). We are, at a global level, connected via digitally electronic devices to the internet, enabling us to share information at a rate only dreamt of a few decades ago. The vast floodgate of information has been thrown open and the resultant rush of information has flooded the field below. After only a few decades of the internet, the flood of information remains unchecked and it should hardly be surprising that the volume is increasing, ever seeking new places to flow. The world is in the midst of experiencing a tremendous change. There is no end in site, should we desire

it, to the deluge of information flow, a course fuelled in no small measure by the desire of the people from all corners of our globe to be connected to one another.

The situation naturally calls for a sustained reflection on its ethical ramifications. The flood of information has created numerous ethical conundrums, many of which are well known to us, as unresolved as they may be, whereas new ethical dilemmas raise their heads daily, many of which we yet remain obliviously ignorant to. Issues such as privacy, data protection, network security, and leaking of harmful information are only some of the concerns that ethicists and legal theorists have been grappling with. These are, it would seem, merely the tip of the proverbial iceberg. As information and communication technologies become more sophisticated and powerful, there will be an increasing need for ethicists and legal theorists to think ever more deeply about their social and legal consequences.

Moreover, as the internet, both the original internet and the Internet of Things (IoT), spreads across the globe, a concern arises over the clash between the values originally embedded in the internet itself and those of the various cultures wherein it is introduced. Even within the culture where the internet originated we can find conflicts between varying sets of values. It used to be believed that the internet is embedded with libertarian values that emphasize the role of the individual vis-à-vis the state. The internet in its early days boasted an autonomous user and a “Wild West” milieu free from authoritative policy and guidance, a frontier not reliant on government backing and security. Such a user cherished individual freedom, autonomy and opportunity and was not concerned with the security traditionally provided by the collective or the state. It seems particularly appropriate that the first packet of information that was sent via the network that eventually became the internet took place on the West Coast of the United States, it being widely acknowledged that West Coast values exemplify American idealism and ideals of freedom. However, when the internet spread to other areas of the US and to Europe where these libertarian and individualistic values were less emphasized, the values of the internet were then adapted. Instead of emphasizing the libertarian values that first informed the internet, the European internet began to emphasize the role of the state in protecting the security and livelihood of the people.¹ The European emphasis on data protection and privacy, then, was understandable in light of the overall outlook of European culture that put less emphasis on individualism than did America from where the internet originated. It can be seen that action by governments on giant corporations such as Microsoft and Google contains elements of cultural difference between the US and the EU. In 2008, by way of example, the US government brought charges against Microsoft for its bundling of the Windows operating system and the Internet Explorer browser. This, charged the Government, hurt business competition by giving Microsoft an unfair advantage. The focus on this case is on an environment for fair business competition, rather than protecting the rights of the individual consumers. On the other hand, when the European Union brought charges against Google for violating the “right to be forgotten,” the emphasis is directly

1 For an illustration of the cultural differences between the US and the EU on some aspects of the information society, see Burk (2007). See also Steinke (2002).

on protecting the rights of *individuals*.² This does not imply that the difference between the two are hard and fast, but it seems to show the different level of emphasis on what is deemed more important in each culture.

This shows that the internet, as with other forms of technologies, can lend itself to the cultural environment it finds itself in. What I would like to do in this chapter, then, is to reflect on this interplay between the internet on the one hand and its cultural environment on the other. The situation where the EU and the US have different opinions and values on the role of the internet shows that culture does indeed play a role, and it is to our benefit to look closely at this interplay towards an understanding of the philosophical insights one can obtain through reflecting on it. Following the lead given by Rafael Capurro, this reflection situates itself in what he calls “intercultural information ethics” (IIE).³ The field is a lively and robust one, as demonstrated by Charles Ess’s special volume on IIE in *Ethics and Information Technology* where he assembles a set of papers dealing with privacy from various cultural perspectives.⁴ The foundational crux of the field reflects on how the presumed values in the field of information ethics are to be understood in light of the spread of information technologies to all cultures in the world. Naturally this gives rise to the philosophical problem of universalism and relativism with which the following paper engages. Karsten Weber (2010), for example, argues that one should focus on the normative problem rather than only a description of the norm of each culture. However, missing from Weber’s account is the methodological reflection on how one is to find the solution to these normative problems, a lacuna that I intend to address in this paper. Reflecting and deliberating on ethical issues in information society as it pertains to different cultures is a fascinating endeavour, and I think a very important one in today’s world. What I would like to accomplish in this chapter is then not only to introduce intercultural information ethics, but also to suggest a methodology towards workable solutions to the problems in the field.⁵ In a nutshell, I would like to propose what I call a pragmatic theory: A solution to intercultural problems in information ethics based on *that which works*. In other words, an intercultural information ethics methodology should be based on considerations that give due emphasis to searching for solutions from within the resources of the particular culture in which the search is taking place, rather than from an external source, or from any theory that aims at absolute truth which is taken to be the source of objective normative rightness that transcends contexts and cultures.

It is not surprising that many discussions in intercultural information ethics focus on the problem of universality of values. This is understandable because globalization is

2 A factsheet on the right to be forgotten can be found at this link: http://ec.europa.eu/justice/data-protection/files/factsheets/factsheet_data_protection_en.pdf.

3 Capurro talks about intercultural information ethics in many places, (Capurro, 2005, 2006, 2007, 2008a, 2008b). For a critical and comprehensive review of the current literature on the topic, see Bielby (2015).

4 See Ess (2005) and the other contributions to *Ethics and Information Technology* Vol. 7, as well as *Information Technology Ethics: Cultural Perspectives* [Hongladarom & Ess, Eds. (2007)].

5 This chapter is an elaboration of an idea broached briefly in Hongladarom and Britz (2009).

bound to produce clashes or dissonances among cultures, giving rise to a large number of discussions and debates. These debates, however, often find themselves in a stalemate, with no possibility of being satisfactorily resolved any time soon. As a consequence, I would like to argue instead a methodology that looks to abandon such sterile and politicized debates, looking instead to a grass roots solution. Therefore, the questions that should *not* be asked are: Which sets of values are universal? How are universal values to be justified? And, how can a set of values be defended against all others claiming to be universal? Instead, I propose a pragmatic conception as alluded to above which calls for an abandonment of talks of universalism and cultural relativism. Instead of asking which set of values are universal, we should ask which set of values serve the existing goals and fit with the desires of people in a particular time and place more than others. Another question that needs to be asked is: How could a set of values stemming from the tradition of a culture be adapted and modified so that they can actually serve the values and goals of the people who belong to that culture? In short, I would like to argue that we abandon the question of which values are true and ask instead which values are *useful*.

Universalism and Relativism

One of the age old debates in philosophy is between those who claim that there is only one truth, those who claim that truth does not exist, and those for whom there are many truths. *Truth*, with capital T, is truth that is universal and independent of any contextual variation. One may think of mathematical statements for example. On the contrary, truths (lower case) are statements and beliefs that are more tied to local contexts. Here epistemology and ethics are intimately connected. Truth is an epistemological concept, but some philosophers, claiming *Truth* have also assumed a set of ethical judgments that transcend all culture. Others do not agree; they claim instead that it is not possible to find *Truth* and more often than not those entities or concepts that are claimed to be *Truth* turn out to be context-bound despite claims to the contrary. Alasdair MacIntyre, for example, is well known for claiming that statements in Kantian ethics, which claim to be universal, are instead reflections of Kant's own upbringing as a strict Protestant pietist (Macintyre, 2007).

Kant, as is quite well known, grounds his ethical judgments in universal reason. What this means is that a theory that explains why an action is right has to be such that it can be generalized as universal law, that is, a law that is applicable to everybody without any exception. The injunction to act according to such a maxim that can be generalized into universal law thus defines a right action to the extent that it demands universal assent by every rational being. What the categorical imperative seeks to buttress is the view that everyone, that is, every rational being, can benefit equally from the law. There is no egoistic desire to gain benefits for oneself alone at the expense of others. That is why Kantian ethics appeals to our intuition as a theory of right action. The key idea is the notion of a *rational* being. What is assumed in Kant's theory is that everyone must be rational in the same way: they have to regard themselves as being in an equal setting with all others. What applies

to one applies to all, and vice versa. In the same way that all assent to the statement “ $7+5 = 12$ ”; their rational capacity tells them the statement is a correct one, in the same vein, everyone is thus supposed to assent to the normative rightness of the statement: “Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction” (Kant, 2002). The maxim under which one acts has to be one that can be accepted by all, and this is only possible if the maxim does not benefit any particular person at the expense of another. Thus one can sense the logical direction of Kant’s thinking here. One starts from the universality of reason and logic (as well as mathematics). One then assumes that all rational persons subscribe to the same set of logic. The normative force of the categorical imperative is then derived from this very universality that applies to everybody without any prejudice. This is not a logical deduction from “is” to “ought,” but an analogy of the universal force of reason between the cognitive field of logic to the normative field of ethics.

The reason why I summarize Kant’s theory of ethics here is that I would like to emphasize the very important role the concept of universality plays in his theory. In any case Kant’s ethics is the paradigm example of universalistic normative thinking, one that should be applicable to any locale and culture without exception. Just as mathematics and logic are valid anywhere, according to partisans of such a view (such as O’Neill and Habermas), so is Kantian ethics. By extension, any system of normative rules or guidelines that are based on the Kantian system then should be applicable in other cultures apart from Kant’s own East Prussian based ethics. These sets of rules and guidelines also include those in information ethics, such as the rules around privacy and related topics. The privacy of the individual should be respected even if only for the reason that individual persons are autonomous rational agents. As such, individual persons possess a set of rights and deserve a certain amount of dignity to be accorded to them in their dealings with institutions (such as the State). Since the reasoning is based on universal logic, then it seems that other cultures should follow the same guidelines too.

Kantian ethics is not the only ethics that subscribe to universalism. Another tradition that has gained some traction in recent years finds a basis in biological evolution, also a kind of universalism. Ethicists such as Sam Harris have recently argued for a kind of ethics based on the theory of biological evolution (Harris, 2011). Harris argues that the reason why we have the ethical system that we have today is because it enables us to survive the vicissitudes that life has thrown at us throughout our development as a species. Without a system based on values such as honesty and altruism, for example, the forces of evolution would have eliminated human beings long ago. And since human beings everywhere are subject to the same evolutionary pressure, the ethical system they come up with needs to be universal. Given this, it may be fair to say that any differences among the ethical systems of the world are more apparent than real. The main difference between Harris’s ethics and Kant’s is that the former does not rely on any claim to the universality of reason, but is a thoroughly naturalistic one.

Against these claims there has been a tradition in ethics that argues against the existence of universal norms. Edward Westermarck is well known for arguing for ethical relativity;

he places the source of normativity in moral emotions that arise as a result of someone's action, such as the desire for vengeance as a result of action that is intended to harm us, rather than in any universal and rational norms (Westermarck, 1932). Furthermore, he argues against the kind of universalism that is found in Kant (and also in Utilitarianism): the source of our moral emotions are more appropriately located in our relationships with our families and close friends rather than with distant people we do not know. Thus, we feel more strongly for our family members than for anybody faraway.

When an ethical system is based on moral emotions, where the gut feelings that we naturally have which are stronger for close kin than for more distant people, then we have ethical relativism. The contrasting view, moral relativism, advances the view that ethical judgment should be based on some set of empirical conditions that obtain within a group of human beings. These conditions, which are taken to be moral emotions by Westermarck, ground the empirical judgments of rightness or wrongness of action. Relativists use these conditions to base their theoretical claim that the normative force of moral judgments is based, ultimately, on empirical conditions that manifest in human groups. Since these conditions naturally vary according to place and time, moral judgments also vary accordingly. The gist of ethical relativism then lies in how moral judgments vary according to different local conditions and that this claim is normatively valid. In other words, each group creates and each group is entitled to believe in their own way of life and their own ethical system, neither of which has to be the same as that of other groups. We can then compare the local ethical systems of relativists as exemplifying a less pronounced commitment to "truth" in contrast to the transcendent source of normativity of universalists who seek a more formalized explication of *Truth*.

As a result, the debate between universalists and relativists boils down to how we can share the same truth across all cultures. For example, all cultures seem to agree that dishonesty is wrong. For the universalist, this is so because, deep down, all judgments by different cultures that dishonesty is wrong can be traced down to some kind of universal logic, in the case of the Kantians, or perhaps to the same biological or evolutionary structure that is there in all human groups, if Harris' argument is to be accepted. The relativist, on the other hand, does not hold the view that such culture-transcendent sources can be found, and normativity can only be found at the surface level, so to speak; that is, at the level of empirical observation. If all cultures so far observed believe that dishonesty is wrong, that does not mean that dishonesty is wrong *per se*, and there is always a possibility that there could be some culture that believes that dishonesty is right. Or there could be a situation where dishonesty turns out to be a right thing to do even for a culture that normally believes otherwise. The problem, then, is whether it is possible that such a source of normative rightness can only be found in areas that transcend culture, such as logic, the brain, or evolution, or whether such a source has to be found in the way people actually behave and practice, in other words within their culture.

The problem with either view is that they are intractable. That is, philosophers have debated among one another for a long time whether universalism or relativism (or particularism) is true but have come to no definitive results. Because of the longevity of both

traditions of thought and their engrained influence on culture and history, one can choose either side a priori and from there construct one's argument to defend it. Then if one so desires, one can just as easily switch sides and argue for the other side with the same level of logical acumen. Philosophy should not be like that. To put it in more concrete terms, the debate on the ground for privacy guidelines is centred on this very issue. On one side there are those who believe that the guidelines need to be based on a strong foundation, such as the one derived from the Kantian liberal tradition. If a culture, such as the Chinese or Thai, does not historically belong to this tradition, then it is their task to get themselves into that tradition and learn it fast in order that Chinese or Thais can become full-fledged members of the international community. On the contrary, there are also those with a more relativistic mindset who believe that the guidelines for privacy and other topics in information ethics should be based rather on the pragmatic reality of each culture, and if a particular culture does not happen to agree with some provisos in the guidelines, then there is nothing, philosophically speaking, one can rely on to convince the members of that culture to see the "truth" of the provisos that are believed to derive from a norm that transcends culture or empirical conditions. For example, the Chinese might argue that in their culture it is customary for the state to have more authority to pry into the private lives of its citizens than their European counterpart. The relativistic point is thus that the European argument that such prying is wrong is not tenable to the Chinese because they belong to different cultural traditions. An impasse thus occurs when the Europeans and the Chinese have to work together and conduct businesses together because these norms and guidelines in information ethics are supposed to be the infrastructure that facilitates such working together in the first place. On the one hand, to impose European moral theory on the Chinese is not acceptable, but on the other, Europeans and Chinese have to work together in today's globalized world, which implies that the guidelines need to be in place. Both have to find a common ground on these guidelines, but no imposition is acceptable. To impose the theory originated in one culture on another is the universalist position, but to accept it as an accomplished fact that different cultures have different norms is the relativist position. Both lead to an impasse.

The Pragmatic Point of View

The debate between the universalist and the relativist is thus a difficult and intractable one. Suppose that it is possible for one to transcend one's own environment and view it as just one possible system, then the universalist can claim that these systems are not the most universal one because all these systems can be grouped together in one more overarching system that is at a higher level of abstraction. Then no matter how the relativist comes up with an argument showing that a normative system is situated inside a local context, the universalist can always claim that that local context is part of another larger system at a higher level of abstraction.

The debate on privacy that we've seen in the previous section illustrates this point very well. Everyone seems to agree that everybody should have largely the same right to privacy, no matter whether they live in Europe, Asia, or anywhere. I say "largely" because there can always be small differences in the norms of each country, but the overall picture should remain the same. On the surface this looks like a universalist claim. The argument is that everyone possesses the right to privacy because the right is part of the autonomy and dignity that a human individual already has by virtue of their rationality. The relativist explanation, however, is that this is not a universalist claim. Instead, the claim to the right to privacy is tied up with local contexts, as the whole conception of privacy and the way it is justified are connected to the Western way of thinking. To claim that people everywhere have the right to privacy, then, is nothing less than to claim that the Western way is superior to the ways of other cultures. According to the relativist, there can be no rational argument that can successfully convince the people in other cultures to accept claims to privacy because any forms of argument are already bound up with the culture wherein they originate and thus have no force outside of that culture. In sum, then, the universalist searches for an incontrovertible and culture-independent source of valid norms, whereas the relativist argues that such norms are not possible.

What makes this seemingly arcane academic debate serious and relevant is that it has spilled out into the real world *en masse* via an ICT saturated global digital culture. Thus the issue has turned out to be political. Instead of using rational arguments to try to convince the other side, the debate can become merely a front for political manoeuvring, giving substance to those who criticize philosophical argumentation as nothing more than a cover for power grabbing. When debates become as highly intractable as the one between the universalist and relativist here, its tone ceases to be purely rational. Instead of a common search for truth, participants in the debate fight against one another under the will to power, or the will to force the other side to submission. This is certainly not healthy for anyone involved. I suspect that a root cause in the politicization of the above scenario can be traced back to the intractability of the debate between universalism and relativism.

The main reason behind the intractability is that both sides are aiming at what they are convinced to be the truth. The universalist is convinced that there is only one truth, and he or she has access to it. The relativist, on the other hand, is also convinced that there is only one truth—the truth that there can be no one final version of the truth. When both sides are convinced of their own respective version of truth based on what they to be incontestable axioms, then debates and discussions between them become very difficult. Thus, in order to avoid these consequences, I think we should drop the requirement of always aiming at final truth in value judgments, and instead we should aim at how well the arguments lead us to the realization of our goals. In place of universalism, I propose that we aim at bringing together different cultures, seeing and looking for common traits. On the other hand, in place of relativism, I would propose that we aim at emphasizing differences among cultures, stressing the unique traits of a culture rather than effacing it for the sake of uniformity. The two aims here obviously go together, and the task would

be to find a delicate balance between these two forces, which vary according to times and circumstances.⁶

To return to our concrete example of the right to privacy, globalization has resulted in cultures being squeezed more than ever to live closely together. What happens on one side of the globe can have an immediate impact on the opposite side due to the internet. Hence there is clearly a rationale for all sides of the globe to share the same working set of norms and guidelines together, and these guidelines have to include the right to privacy. This does not mean that all cultures share the same theory behind those norms. For example, Kantians have their own way of justifying the norms, and Buddhists have another, even though the norms themselves are the same. For example, the standard justification of the right to privacy in the West, on the standard liberal account at least, appears to depend on the concept of the autonomous individual. After all, the very autonomy of the individual consists in her having a right to privacy, namely a right to operate within a domain where others do not interfere with her. It is hard to conceive how she could remain autonomous without this right. However, in a culture where the talk of the autonomous individual does not hold a lot of credence, to convince members of such a culture of the right to privacy would prove difficult. A number of empirical research projects have shown that privacy, as understood in this sense, is foreign to these cultures.⁷ It is regarded as a “foreign import” that comes together with the influx of globalization and ideas flooding in from the West. Thus there is a resistance toward claiming that the right to privacy is universal and hence non-Western cultures have to accept it. Non-Western cultures, then, are in a dilemma. On the one hand they need to integrate themselves into the globalized world economy out of necessity, but on the other hand they do not want to lose their identity and the set of values that they have cherished their entire culture long.

In a number of my previous papers I have tried to suggest a way out of the above dilemma by arguing that we can have it both ways. That is, non-Western cultures can integrate themselves into the world economy, subscribing to the right to privacy, without thereby losing their identity. This is done by looking back to the intellectual resources within the

6 The account of my pragmatism is different in certain respects from the one famously offered by Richard Rorty. In a number of works, starting from *Philosophy and the Mirror of Nature* (1979), and *Contingency, Irony, and Solidarity* (1989), Rorty argues for the concept of solidarity as replacing objectivity in discussing universality of norms. Instead of searching for universally valid norms, Rorty calls for a solidarity among the world's cultures instead so that they could communicate and work with one another where roughly speaking “solidarity” means basic agreement and some shared goals. My conception agrees on the whole with Rorty's. However, the difference is that my conception does not specifically call for solidarity in Rorty's sense. Solidarity might imply that there is felt need for cultures to conform to some rules or guidelines for the sake of living together, so to speak. On the contrary, my proposal does not imply the same kind of conforming, but a realization that the goals of one culture might be better realized if it collaborates with others. In any case, this is only a sketch of an idea that needs to be much developed further.

7 See, for example, Lu (2005); Kitiyadisai, (2005); Nakada and Tamura (2005); Capurro (2005); Ramasoota (2000) and Hongladarom (2007, 2009 & 2016).

local cultures themselves to see if there is anything that can be used to support the right to privacy. In the case of Thailand where I am from, this would be to look at Buddhist thought and see if there is anything there that proves applicable. Doing so is not entirely similar to what Rawls has called looking for an “overlapping consensus” (Rawls, 2005). What Rawls has in mind is a kind of political liberalism that looks for a way to accommodate people in a pluralistic society, allowing them to come together to form a social contract, so to speak. What the participants in the social contract deliberation are asked to leave behind is their metaphysical belief, which makes the social contract process purely political. What I have in mind, on the other hand, is that the participants should not leave their metaphysical beliefs behind. On the contrary, they should embrace them and look at them as a source of the normative validity of what they subscribe to as part of the global community. By looking back at their own intellectual resources, an advantage is that others who do not belong to the same tradition could benefit, and the global norms themselves could well be revised, if it is found that the intellectual resources from one culture contain an insight that the global community finds beneficial for the whole.

What recourse do we have if the proposal from an intellectual resource of a culture proves so different from the belief of the global community that both cannot be reconciled with each other? Suppose a culture concludes that their intellectual resource tells them that the right to privacy is anathema to them, that there is no possibility of enshrining the right in their own guidelines? How then do the conflicting cultures determine what to do? My answer would be that, empirically speaking, such a scenario is almost impossible. In bioethics we see similar conflicts, such as the Jehovah’s Witnesses group whose members are religiously forbidden to receive blood transfusions.⁸ This has created an ethical dilemma between the belief of the members of the group and that of the medical practitioner who believes that it is their duty to provide the best possible treatment to their patients (in the case that the best treatment requires blood transfusion). As in other difficult cases, the debate is ongoing, but at least the individual patient should be fully informed of the available options and what the consequence would be of choosing either option. The case of the Jehovah’s Witnesses is part of the larger case around the right of patients to refuse treatment. If the patient has such a right then her fully informed decision should be respected, unless there is a compelling medical or public health reason to treat her condition right away, such as would be the case if her condition were left untreated and the health of the whole community is then adversely affected.

Thus we see that even if the patient has a right to refuse treatment due to her religious belief or otherwise, the community still has a final authority over her decision if her decision would threaten the whole group. In the globalized world where the whole world has become one community tied together with interconnecting web of transactions, it has become increasingly difficult for a group to isolate themselves completely and not to follow global norms and guidelines. What they need to see, however, is the benefit to their individual members and to the group as a whole in following the guidelines. As for the theoretical

8 See, for example, Singelenberg (1990); Lowell Dixon & Smalley (1981); Muramoto (1998).

group whose intellectual resource says that privacy for individuals is forbidden, it is very hard to see how such a group could exist in today's world. Either the group is part of the global community and causes a lot of disruptions for their total lack of respect for privacy (nobody entering this culture would be able to keep their passwords secret, for example), or the group is totally isolated from the rest of the world.

Practical Concern

To be even more specific, when a culture receives an idea from outside of itself, such as the idea that the right to privacy of individuals should be respected, it usually judges whether the idea is worthy of accepting into the belief and practice system of that culture. This process involves "naturalization" where the idea in question is translated and modified in order to fit within the already existing system. For example, Thai people have a special fondness for Mercedes cars, believing that it is more than just a car, but a powerful status symbol of the owner. The status and power attached to the Mercedes is so strong that in many cases policemen are reluctant to issue parking tickets to Mercedes that are parked illegally because they are afraid the owner might retaliate by complaining to their superior officers and their career might be in jeopardy. This, of course, is only possible in a society where status and power count for more than rule of law and the merit system. In any case, the Mercedes example fits well into the cultural system of the Thai people. The fact that the car is a very high-tech device made in democratic Germany counts for very little. In other words, the Mercedes has been naturalized by the Thai cultural system such that it ceases to be merely a German-engineered car but rather a totem of power in the Thai culture.

As for the guidelines on privacy, the process of naturalization might not be as dramatic, but the structure is the same as one consisting of an adoption of the product or the idea, searching for a place for it to fit within the structure of the practice of the culture. Since the guidelines on privacy consist of ideas rather than products, the potential to change the beliefs and practices of the members of the culture could be greater. Thus the naturalization process does not have to result in adopting the imported ideas, but the imported ideas themselves could effect a great deal of change in the receiving culture too. This process is not the same as imposition of foreign values criticized by the relativist in that the process of change comes from within the receiving culture itself. As the Thai culture receives the idea of the right to privacy, what happens is that the belief, and more visibly the practices, of Thai people start to change. The more Thai people are integrated into the world community, the more the need for the right to privacy and the desire to participate in the global discussion around privacy. One does not have to issue a universalist argument to this effect; on the contrary I believe that would be counterproductive. It would be better to let the Thai culture, or other non-Western cultures for that matter, absorb the new ideas by themselves according to their own schedule and allow the members of the culture to decide for themselves how close they need to integrate themselves into the idea and the idea into themselves. The whole process takes time but it will result in a lasting

commitment to global ideals as the members begin to feel that the ideals and the values belong to them rather than to foreigners.

Moreover, in an attempt to ground the right to privacy firmly on the footing of Thai culture, it is almost necessary to search for a way to justify the right from the indigenous intellectual resource of the culture in question, in the case of the Thai, this intellectual resource being Buddhism. The reason why this methodology justifies privacy rights is that it subjects the concept of privacy and its related concepts to naturalization. By showing that the right to privacy can be derived from Buddhist thought, Thai people find that privacy actually belongs to themselves. The reason why a non-Western culture needs to do this is so that the process guarantees that the idea or the value in question (such as the right to privacy) really belongs to their own culture. No matter how it is justified, the statement to be justified is largely the same—in this case, every individual has a right to privacy. Certainly there can be qualifications and exceptions to this general statement, but that is to be expected in any international item of discussion and agreement. The key idea is that the statement can be justified in various ways. It can be justified through reference to the idea of the autonomous individuals engaging in a deliberative process for a social contract. Or it can be justified through the Buddhist perspective where the individuals are themselves a construct and autonomy is only relative. An important aspect of Buddhist theory is that everything can be changed, namely, that nothing is written in stone. The import of the foreign idea can result in a change in the receiving culture, but since the receiving culture participates in the global arena and comes up with their own original way of justifying and theorizing the norm, the global community could find the argument acceptable, resulting in a global change. This, however, does not mean that all receiving cultures have to change in the same way; some cultures may decide not to participate in the global economy. For these cultures there is no need to look back at their own traditions to re-evaluate them.

Thus, the above outlines my view of how to avoid both universalism and relativism in intercultural information ethics. The conception is pragmatic because it does not put an emphasis on the “truth of the matter,” so to speak. The aim is not to solve the universalist-relativist debate to the satisfaction of all philosophers; instead it is to find the best solution within the perspective of a non-Western culture of how to ground the normative concepts coming from the West. Instead of determining the truth of the matter, as in the universalism-relativism debate, the aim is to find the best elements from both views, elements that can realize our cherished goals and values. In today’s world our cherished values almost invariably include liberal and democratic ones; hence, as the right to privacy plays a large role in realizing such goals, the right to privacy is thus justified on this ground. For example, if Thailand wants to be a player in the international arena, then it has to abide by the rules adopted for that arena. This in a way is an acknowledgment of the force of universalism, but in actuality it does not play the same role because the way the adoption of the international guideline is justified can be materially different. In the Thai case this can include an interpretation of Buddhist philosophy, as I have mentioned. The reference to Buddhist philosophy shows that universalism is not accepted, because if it were, the justification should have proceeded in the standard Western way. In a way, the

reason why Thai culture accepts the international guideline is that it wants to be a player and not entirely because the guideline is the universally or absolutely correct one. This does not mean that Thai culture is incoherent, but it judges that the guideline is the best that the international community has come up with in order to facilitate workable collaboration among countries and cultures which are very different from one another. On the other hand, stressing the difference and uniqueness of Thai culture does not mean that it accepts relativism either because it accepts the content of the international guideline, and thus from the outside there is nothing different in Thailand's participation.

However, an objection to the above solution arises if a culture refuses to play the game at all. In this case what usually happens is that the dissenting culture is so assured of its version of truth that it finds itself incapable of participation because its version of truth tells it that it is either pointless or dangerous to participate with other cultures in the common game. The example of the Jehovah's Witness comes to mind again. In this case what the global community should do is to try to talk with the refusing culture, showing it the benefits of participating and joining the community. But in any case it is always possible that the culture will refuse to join. In this case the global community should respect the culture's decision and let it go alone. In reality the culture in question could be a small tribe in a very remote jungle that prefers their traditional way of life to the fast paced life of the globalized economy. In this case the global community has an obligation to respect the culture's decision. The "decision" of a culture actually means a kind of consensus that emerges from the tribe as a whole (in most of these cases one tribe comprises one culture, as they are very different from all other tribes), but if some individuals from within the tribe want to join the global community then they should be allowed to do so too. As for the culture of the whole tribe, the global community not only has an obligation to respect their collective decision, but it has another obligation to support it in such a way that they remain viable and strong in the future. This usually means that the natural environment where they live should not be interfered with, for that would mean that their traditional culture would be severely threatened.

Another objection has been offered by Wong Pak-Hang (2009), who argues that pragmatic considerations could supplant ethical considerations in intercultural information ethics, and thus destroy the *raison d'être* of the latter itself. For example, Wong argues that one of the favourite pragmatic reasons offered by those who promote international norms, such as respect to privacy rights, is that by doing so the country could enjoy economic progress, and Wong argues that economic progress should not be regarded as an ethical value. However, there is an ethical tradition, utilitarianism, which says explicitly that *utilities* such as happiness or pleasure should be the aim of ethical considerations. Hence as much as economic progress brings in such utilities, according to utilitarianism at least, one does not see why economic progress should not be considered an aim of ethical consideration. The difference between utilitarianism and the pragmatic consideration I am proposing is that within the former resides universalistic thinking—the claim to create the greatest happiness for the greatest number applies everywhere, to all cultures. On the contrary, my view is much less strong and less universalistic as we have seen. This does not mean that

maximization of utilities for the greatest number is not a valuable goal, but my emphasis in this paper is more on the question of options when confronted with different ethical systems coming from different cultures, and not directly on the question of what constitutes the absolutely correct ethical norms. Hence in my view there is nothing inherently wrong in having economic success or progress as one goal in a pragmatic deliberation. It would be wrong if everybody did not share the economic success equitably in a particular culture or community. But that is a subject for another paper.

In any case, to claim that all participating cultures should abide by the same rules does not mean, I repeat, that the rules are written in stone as if given by God. On the contrary the rules are always subject to negotiation and revision. The content of the rules, such as those concerning informational privacy and many others, are there in order to facilitate the working of the global information society, so when the society changes as it always does, the rules and guidelines have to change too. What is important is that the change not be initiated and controlled by a few powerful countries, but rather by all stakeholders equally, including non-state participants such as NGOs and the civil society. They should have their voice in the process too.

Conclusion

Pragmatists have been criticized for changing the subject. Instead of tackling the problem head on, pragmatists are seen as trying to avoid it by searching for a way around it. Ludwig Wittgenstein advised us that philosophers are sometimes like a fly in a bottle, knocking their heads against the sides of the bottle hoping to break free. The task, of course, would be easier accomplished by finding the opening at the top of the bottle and flying out of it. In the case of the debate between universalism and relativism, to find an opening would be to search, on the one hand, for common grounds that are already there among the different cultures, but, on the other hand and no less importantly, emphasizing the unique identity of each culture at the same time. The common ground does not have to be grounded in a universally valid argument, for such an argument might not be possible anyway, or if it were possible it might lie so far away from us that getting to it proves too arduous. On the other hand, the common ground that we seek is not the same as homogenizing all the cultural differences. The process of giving and taking, of negotiating and accommodating, goes ever on and is an integral part of finding an effective set of normative guidelines for information ethics that everyone in the world can feel comfortable with.⁹

9 It has been an honour for me to have the opportunity to write a chapter in Professor Capurro's Festschrift volume. I have had the good fortune of his company on several occasions, starting from his inviting me to attend the African Information Ethics Conference in Pretoria early in 2007, then his acceptance of being the keynote speaker at the Third AP-CAP conference in Bangkok later in the same year. Then I met him again in Tsukuba, Japan, both of us having been

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invited by Prof. Nakada to his Center in 2012. Each time I met him I learned something new, and his charming personality always left a lasting impression on me.

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Ethics of European Institutions as Normative Foundation of Responsible Research and Innovation in ICT

Bernd Carsten Stahl

Abstract

Responsible research and innovation (RRI) is a term that is used to describe current developments in the governance of research and innovation. Its purpose is to ensure that process and outcome of research are aligned with societal needs. RRI implies interventions in research and innovation processes. One open question concerning RRI is that of the normative foundations and justifications of such interventions. In this chapter I review work undertaken by Rafael Capurro and his collaborators on the ethics of European institutions. I suggest that this is a fruitful approach that can contribute to developing clear and acceptable normative foundations upon which RRI can be built. Using the example of affective computing I show how this approach to the ethics of European institutions can guide and support the practice of RRI.

Responsible Research and Innovation

The concept of responsible research and innovation (RRI), sometimes also referred to as responsible innovation (RI), has been established as a cornerstone of the European research landscape (European Commission, 2013). As a first approximation one can define RRI as the attempt to ensure that both the process and outcome of research and innovation are acceptable and socially desirable. The discourse surrounding RRI needs to be understood in the context of broader discussions about scientific research and technology development which in the past have had many positive consequences but also, it should be said, notable negative ones as well. Examples of research and innovation that were and remain contested include the development of genetically modified organisms, nanotechnology, nuclear technology and geoengineering. Some of these have been discussed for decades, others are still at earlier stages of development.

RRI is meant to ensure that research and innovation processes and agendas are sensitive to the question of which developments can lead to resistance and be perceived as problematic. To some degree RRI can be seen as a response to the dilemma of control, as

described by Collingridge (1981), who showed that at an early stage of research and development when it is still easy to change the trajectory of a technology, it is very difficult to determine which consequences it may have. At a later stage when consequences become more clearly visible, changing the trajectory may no longer be possible.

The problem of proactive engagement with research and innovation activities is particularly pertinent in information and communication technologies (ICTs) whose uses are notoriously difficult to predict and whose ubiquity render them of high social relevance. It is therefore not surprising that a significant part of the work undertaken in RRI focuses on ICT (Schomberg, 2011).

RRI spans a number of areas and applications, includes numerous activities and different interventions. One aspect that all RRI activities have in common, however, is that they are normative. RRI moves beyond describing research and innovation activities. It is based on the normative premise that research and innovation are subject to social intervention and that societal actors can legitimately influence the course of their development. Such a normative position requires normative underpinnings. One possible source of the normative foundations of RRI could be values (Holmes, Blackmore & Hawkins, 2011). Values are notoriously difficult to capture and describe. They can also contradict each other. Using values to support the normative basis of RRI requires a difficult exercise which involves identifying and describing values and demonstrating their reach and validity. It is, furthermore, not obvious whether and to what degree, particular values are applicable to particular technologies, in our case to particular ICTs.

Establishing the normative underpinnings of RRI in ICT via an analysis of values is thus not straightforward. However, it could be argued that collective values held by societies can be assessed by looking at how these societies behave. This chapter describes a way of extracting a particular type of values, namely the values of European institutions, and their relationship with ICT. It argues that this approach is promising as a way to find broadly agreed normative foundations that will allow the development and implementation of RRI in ICT, at least in a European context. The chapter argues that the work undertaken by Rafael Capurro and his team for the ETICA project (www.etica-project.eu) can be seen as an important contribution to the institutionalisation of RRI and therefore to the way in which research and research policy are developed on a European level. In order to make this argument, the chapter begins by reviewing the discussion of RRI and in particular the question of its normative underpinnings. Following this it describes the work undertaken by Capurro's team concerning the values of European institutions with regards to a set of emerging ICTs. The chapter concludes by discussing how these normative underpinnings can affect RRI in ICT.

RRI and its Normative Underpinnings

The term “responsible research and innovation” is relatively new and can be traced back to US legislation aimed at regulating research in nanotechnology in 2003 (21st Century Nanotechnology Research and Development Act, Public Law 108-153, 2). It can originally be seen as an attempt to manage the risks related to research and technology development. In this sense, it is a more recent instantiation of much older and well-established discussions on research governance which finds its roots in Enlightenment notions of the moral good of research and has been reflected in research policy for decades.

The problem that RRI is trying to address is that research and innovation activities are generally agreed upon as constituting a public good, but at the same time it has been clear at least since the First World War that they can have negative consequences that need to be understood and addressed. Research and innovation in modern industrialised states are subject to policy oversight with a view to harnessing their positive potential and ensuring that their outcomes are in the interest of society as a whole (Bush, 1945). The general Enlightenment optimism and belief in the beneficial nature of science and research was shaken in the course of the 20th century by numerous factors, including the large-scale industrialised mass killing of humans during two world wars, numerous large industrial and nuclear accidents, public debate and disagreement on specific types of technologies (for example nuclear power or genetically modified organisms) and high-profile cases of research misconduct.

Western societies developed a number of activities aimed to address these problems. These include the development of research ethics protocols and ethics review procedures (Elgesem, 2008), (national) technology assessment (Bellucci & Joss, 2002; Grunwald, 2009), science and technology studies (Coenen & Simakova, 2013; Pinch & Bijker, 1984), technology ethics (Brey, 2012) and the professionalization of research and development. Most of these activities originated from biomedicine and life sciences, often motivated by the desire to avoid direct government control of research (Stark, 2011).

RRI builds on these prior activities but tries to broaden and mainstream them. It can also be understood as a risk management approach, but it goes beyond that in recognising that the global nature and far reach of modern research and innovation requires a broader understanding of the problems they may raise and the ways of addressing them. It is therefore not surprising that RRI in its current form developed in areas of research and technology development that are potentially contentious, such as nanotechnology (Grunwald, 2010; Kjolberg & Strand, 2011), synthetic biology (BBSRC / EPSRC, 2010; Technology Strategy Board, 2012) or geoengineering (Macnaghten & Owen, 2011; Parkhill, Pidgeon, Corner, & Vaughan, 2013). It is increasingly realised that for RRI to be relevant it also has to cover other areas of research and innovation which may be less publicly debated but have a large potential impact on society as a whole. One research practice explicitly requiring such an increased focus is that of information and communication technology (ICT) (Schomberg, 2011).

The debate surrounding RRI's, definitions, implementation and practices is developing rapidly. This has been supported by the large-scale adoption of its principles and ideas by research policy makers which have created a number of research funding streams (for example in the US, the Netherlands and Norway) and are promoting the adoption of RRI as a guiding principle for publicly funded research, notably by the European Commission in its current research framework programme Horizon 2020 (European Commission, 2012a).

This chapter does not provide the space to review and contribute to the general discussion of RRI in detail. As such, it is worth seeking a brief definition to help define the discussion. Probably the most widely used definition of the term is the one proposed by von Schomberg (2013, p 64):

Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society).

There is much debate about how to put RRI into practice. In this chapter I build on work undertaken by Stilgoe, Owen, & Macnaghten (2013) who tried to synthesise the discourse and develop a framework of RRI. This framework was adopted by the UK Engineering and Physical Science Research Council (EPSRC) and developed using the acronym of AREA. According to their website,¹ research undertaken responsibly should seek to:

- Anticipate—scribing and analysing the impacts, intended or otherwise, (for example economic, social, environmental) that might arise. This does not seek to predict but rather to support an exploration of possible impacts and implications that may otherwise remain uncovered and little discussed.
- Reflect—reflecting on the purposes of, motivations for and potential implications of the research, and the associated uncertainties, areas of ignorance, assumptions, framings, questions, dilemmas and social transformations these may bring.
- Engage—opening up such visions, impacts and questioning to broader deliberation, dialogue, engagement and debate in an inclusive way.
- Act—using these processes to influence the direction and trajectory of the research and innovation process itself.

While the AREA framework is by no means the only one that provides guidance on implementing RRI, it is widely used and compatible with most other approaches. I will return to it later when discussing how the ethics of European institutions could be brought to bear on a particular technology area such as affective computing.

One question to look at is in what way RRI goes beyond its predecessors and whether it is simply a new name for established activities. I believe that there are several aspects of

1 <https://www.epsrc.ac.uk/research/framework/area/>, accessed 19 August 2015.

RRI that set it apart from prior activities. RRI covers a broader range of activities and aims to govern the entire spectrum of research, development and innovation. It furthermore includes a strong agenda of practically affecting these activities and making sure that they contribute to the public good.

One way of conceptualising RRI is to view it as a type of meta-responsibility (Stahl, 2013). This means that RRI recognises that it does not need to reinvent everything that has gone before. Research and innovation were, generally, conducted in a responsible way prior to the arrival of RRI. The contribution of RRI might be seen to be better assessing and aligning existing and novel responsibilities with a view to ensuring that they are synergistic and contribute to the same intended outcomes. This puts RRI on a different level from existing responsibilities, such as those of the researcher to undertake their work with integrity, the funder to ensure appropriate oversight, or the policymaker to align funding streams with societal needs. All of these and many other responsibilities remain. The role of RRI can then be to understand their interaction and address possible conflicts or contradictions. Where such conflicts of existing responsibilities exist, RRI's role would be to highlight them and open to debate. This view of RRI allows a better understanding of the various components that it needs to cover. It promotes reflection on the necessary conditions for RRI to be relevant and successful, the various activities that it comprises and the likely problems and limitations that it will need to address.

As indicated above, RRI includes interventions that aim to change individual and collective behaviours. Any normative activity needs to provide a justification that allows assessment of the basis of suggested changes as well as their generally-acknowledged limitations. Such a justification is required to be able to understand and assess competing normative claims and come to acceptable decisions and outcomes.

The discourse on RRI recognises that normative foundations are one component that RRI has to address explicitly. It debates a number of possible sources of norms or values that can inform the way research and innovation are undertaken. Again, these discussions have a long tradition, for example in the discourse around biomedical ethics.

One stream of the debate draws on philosophical ethics and tries to identify the type of normative resources that can inform RRI. This type of argument looks at established ethical theories that may be applicable to research and innovation. Gutmann (2011), for example, when looking for ethical principles relevant to synthetic biology proposes public beneficence, responsible stewardship, intellectual freedom and responsibility, democratic deliberation, and justice and fairness. These are closely related to the principles that underpin much of biomedical ethics. The Nuffield Council on Bioethics (2013, p. 8) similarly suggests a number of what they call "interests" that should be taken into consideration in relation to novel neurotechnologies: protection of safety, promotion of autonomy, protection of people's privacy, promotion of equity, promoting public understanding of and trust in novel neurotechnologies and social desirability.

Others look for normative bases or principles in ethical literature, for example by applying Rawls's (2001) ethics to engineering, (Doorn, 2012), by looking to an ethics of care (Gilligan, 1990) to inform our thinking about emerging technologies (Adam & Groves,

2011) or by listing a number of ethical values with possible relevance to research and innovation (Brey, 2012). In addition to these more philosophically oriented approaches, there have been a number of suggestions to draw on normative resources that exist in the form of legal frameworks, basic or human rights. The European Commission (2012b, p. 51), for example, proposes that RRI be based on anchor points that include “the whole spectrum of social institutions and human activities: human rights and the principles of dignity, freedoms, equality, solidarity, citizens’ rights, justice, and sustainability.”

As RRI is a process based on a variety of research and innovation-related processes, it has been suggested that its normative justification may be linked to norms governing these processes. This can refer to normative principles such as democracy (Grunwald, 2011) and the concomitant ideas of participation (Bijker, 2010) and transparency (Zhang, Marris & Rose, 2011). The probably strongest and most widely-spread normative tradition that affects research and innovation and thus RRI is that of biomedical ethics (Beauchamp & Childress, 2008). Formalised since the 1940s via the Nuremberg Code, the WHO Helsinki Declaration and since turned into organisational practice, notably through the establishment of institutional review boards (IRBs) and their functional equivalents (Stark, 2011), biomedical ethics has shaped the view of ethics in much of research. It is based on mid-range philosophical principles such as autonomy, beneficence and justice and has led to the now ubiquitous practice of gaining informed consent from research participants. While widely used in biomedical research, it has long been argued that the biomedical approach is not always appropriate in other types of research notably social research (Schrag, 2010). More importantly for the current argument, these general principles of biomedical research are not specifically geared towards particular areas of research and blind to the characteristics of particular technologies.

One can thus summarise that there is a rich array of normative foundations that can inform RRI. What they have in common is that they were developed in contexts other than modern science and technology development. They furthermore tend to be rather general and have little to say about the way in which generic issues relate to particular technologies. This is where Capurro’s work can make an important contribution, as will be discussed in the next section.

The Ethics of European Institutions

This section briefly recounts the ethics of European institutions as developed by Capurro and his collaborators Michael Nagenborg and Lisa Stengel in the course of the ETICA research project. It is based on the deliverables submitted to the project (Nagenborg & Capurro, 2011; Stengel & Nagenborg, 2011). Readers interested in the details and specific references are pointed to those sources.

The ETICA project was a European research project funded in the seventh European Framework Programme in the Science in Society stream. It ran from 2009 to 2011 and consisted of a consortium made up of 12 partners. Very briefly, the ETICA project can be

understood as a technology foresight project that aimed to come to a better understanding of emerging information and communication technologies with a view to identifying and understanding potential ethical issues early in the research and development process (Stahl, 2011). Its motivation is the recognition that, very often, ethical reflection of technology commences after the technology is well established and difficult to change. The idea was thus to commence reflection on ethical issues early on in the hope that this would make it easier to proactively address them. The project started by identifying emerging ICTs via a structured review of policy and research publications. This led to the identification of a list of 11 technologies that could be described as emerging in the sense that they are held to have the potential to significantly change the way humans interact with the world over the next 15 to 20 years. For each of those 11 technologies an ethical analysis was undertaken to identify which ethical issues may be associated with them. The result of this work was an “ethical issue matrix” that contained a description of each technology, some possible applications and a discussion of ethical issues (see www.etica-project.eu for more detail).

Capurro’s work on the ethics of European institutions formed part of the next step which was the validation and further elaboration of those ethical issues. Each of those technologies was further explored from different directions, namely those of technology assessment, law, gender and ethics. The original brief to look at ethics was interpreted by Capurro et al. to include an investigation of how European institutions had approached and discussed the various technologies.

The approach they took to achieve this is described in detail in Stengel and Nagenborg (2011). They started out by identifying core values of the EU from the Charter of the Fundamental Rights of the European Union. These are human dignity, freedom, democracy, equality, the rule of law and respect for human rights. In the next step they analysed the way in which ethics was represented in the 7th Framework Programme. This analysis highlighted that key values associated with ICT included autonomy (e.g., informed consent), privacy, and dual use.

The next step in the analysis they proposed was to explore the published Opinions of the European Group on Ethics in Science and New Technologies (EGE), a high level advisory group to the President of the European Commission, of which Capurro was a member for 10 years. Several of the opinions of the EGE focus specifically on issues related to ICTs. It is therefore possible to draw conclusions about which values are affected or relevant when dealing with such technologies. The analysis furthermore covered publications by other European bodies relevant to ethics, notably the Inter Service Group on Ethics and EU Policies, National Ethics Council (NEC) Forum and EC Unit L3—Governance and Ethics.

Overall this work led to the following list of principles and values:

- 1 Human Dignity
- 2 Freedom
 - 2.1 Autonomy
 - 2.1.a Control
 - 2.1.b Responsibility

- 2.1.c Persuasion and coercion
 - 2.1.d Informed consent
 - 2.2 Freedom of Arts
 - 2.3 Freedom of Research
 - 2.4 Dual use
 - 2.5 Privacy
 - 2.6 Data protection
 - 2.7 Surveillance
- 3. Justice (Equality and Solidarity)
 - 3.1 Autonomy
 - 3.1.a Dependency
 - 3.2 Consumer Protection
 - 3.3 Cultural Diversity
 - 3.4 Environmental Protection
 - 3.4.a Animal Welfare
 - 3.5 Health
 - 3.5.a Safety
 - 3.5.b Equal access to Health Care
 - 3.6 Respect for human rights
 - 3.7 Ownership
 - 3.8 Social Inclusion
 - 3.8.a Equal Access to Education
 - 3.8.b (Non-)Discrimination
 - 3.8.c Participation
 - 3.8.d Access to the labour market
 - 3.8.e Surveillance and Security
- 4. Principle of Proportionality
- 5. Precautionary Principle
- 6. Principle of Transparency

In addition to listing these values, Capurro and his collaborators explored how they were reflected in research projects (e.g. projects on a particular technology that had an ethical evaluation component). They also looked at the relationship between different values, in particular the existence of value conflicts. Using this body of literature, each technology was individually explored to assess whether ethical questions and related values were discernible. The following section discusses the relevance of these findings for RRI using the example of affective computing.

Using the Ethics of European Institutions as the basis of RRI in ICT – The Example of Affective Computing

The above list of ethical principles and values derived from publications by European institutions and a search of the relevant publications for particular technologies allows for the identification of specific ethical issues and their evaluation from the perspective of the ethics of European institutions. To demonstrate how this could be made useful in RRI, I will briefly recount findings related to one of the 11 technologies identified by the ETICA project, namely affective computing.

Affective computing, sometimes also called “emotional computing,” uses computational artefacts and principles to record and identify, process and express human emotions (Picard, 1997). It has been an active research field for well over a decade and is slowly entering the mainstream market for particular applications. Capurro and his collaborators’ application of principles and values to affective computing allowed the identification of a number of issues which are summarised in the following table:

Table 1 Overview of ethical issues of affective computing.

Ethical Issues Already Discernible	Description
Privacy	“Deals with some of our most personal data...a lot of personal data is needed sometimes even from external sources accessed via the web.”
Manipulation and Coercion	Even if persuasion is desirable there is a tendency towards paternalism, manipulation, and even coercion.
Informed Consent	The persuasiveness of some applications might question the quality of the informed consent given by the users.
Social inclusion	System might be beneficial for people with severe motor and oral communication problems, but may promote stereotypes. Ethical challenges of cultural differences regarding emotions have to be addressed.
Principle of Proportionality	Collection of sensitive data and potential of manipulating persons require strong justification with regard to means and ends.
Principle of Transparency	A high level of transparency has to be requested.

Note. Adapted from Nagenborg and Capurro (2011, p. 13f).

This list can prove hugely beneficial to researchers and other stakeholders in research and innovation for the process of determining how to act responsibly. If we go back to the components of RRI in the AREA framework, then it is easy to see how an understanding of specific ethical issues promotes responsible activity.

The first A, standing for anticipation, can draw on the list by running through the ethical issues and exploring how these may apply in their specific setting that the research

focuses on. An interesting example is the problem of manipulation and coercion. These are ethical issues that other technologies are less likely to raise. By being able to mimic human emotions, affective computing may be able to solicit responses, or engender actions, on the basis of human reactions to perceived emotions which differ from those that could be expected otherwise. This is not surprising as, to a significant degree, it is the purpose of affective computing to lead to such reactions. However, the explicit attention paid to this feature as a potential ethical issue may help stakeholders to avert potential negative effects.

The R stands for reflection, which again is supported by an awareness of ethical issues. Reflection covers all aspects of the research and innovation activity and requires stakeholders to think about the purpose, the means chosen to achieve it and the role of the researcher in the process. Again, a list of ethical issues based on accepted values can help the process of reflection by offering key aspects of the technology which are potentially contested and in need of justification.

The third aspect of RRI, engagement, as represented by the E of the AREA acronym, requires opening up the research and innovation process to external stakeholders, such as users or affected groups. This process of engagement raises numerous problems, as it is resource intensive and typically an unfamiliar activity for most researchers. Engagement furthermore needs to be guided to ensure that it allows the exchange of positions on crucial aspects. The list of ethical issues can provide an important input into this and structure initial interactions between internal and external stakeholders of the research and innovation process.

Finally there is action, the last component of the AREA framework. The importance of this aspect is that it clearly points out that RRI must go beyond theoretical consideration and have manifest consequences for research and its outcomes. Capurro and his collaborators' list of ethical issues can help here by providing a baseline of issues that action needs to address or at least be aware of. If, to come back to the example of affective computing, an action plan for RRI is developed in the specific project, then the lists could be used to check whether these issues are covered. An action list that fails to cover the issue of manipulation and control in affective computing, for example, would need to demonstrate why this important feature is not relevant in this specific project.

Overall, I hope we have shown with this example that the ethics of European institutions allows a very specific view of ethical concerns with regards to particular technologies and that such ethical concerns are important for the practice of RRI. A further advantage of this approach which sets it apart from other types of ethical analysis is that it is based on the experience and practice of individuals and institutions whose voice is recognised in this particular environment. This means that the adoption of the ethics of European institutions can provide the normative basis of RRI in those cases where the practice is based in the jurisdiction of these institutions, which means in the Member States of the European Union. For practising scientists this means that they do not need to seek further justification or philosophical arguments to support adopting this position but can take it as given that it reflects the current and dominant ethical thinking. This does not imply that the ethics of European institutions is beyond philosophical critique. However, the

majority of individuals engaged in research and innovation who have to engage in RRI are not philosophers but people who need to find practical ways forward in order to integrate ethical concerns in research practice. For this purpose the ethics of European institutions would seem to be a highly suitable approach.

Conclusion

The brief example of affective computing demonstrates that the application of principles and values of European institutions to specific technologies can provide a basis and important input into RRI. The identification of the principles and values is important as a step towards rendering more concrete the usually quite broad reference to normative foundations of Europe. Capurro et al., have furthermore shown that these values are not simply aspirational but can be made concrete for specific technologies. As I have tried to argue, such a specifications of principles and values in particular application areas can provide an important input into the practice of RRI.

This is not to suggest that no further problems may arise. As Capurro et al.'s work has also shown, values are complex and can be contradictory, leaving the question open of how best to act when faced with contradicting values. The list of values and its application to particular technologies is, furthermore, potentially incomplete and subject to change over time. The biggest practical issue, however, is that the translation of principles and values to specific application areas has only been done for a very limited number of technologies and even in those cases has not been widely disseminated. I therefore hope that this chapter will contribute to the broader awareness of the important work undertaken by Rafael Capurro and his collaborators in this field, so that it can make its intended contribution to a heightened sense of responsibility in ICT research and innovation.

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III

From Information to Message

Raphael's *School of Athens* From the Perspective of Angeletics

John D. Holgate

Abstract

Raphael's famous painting the *School of Athens* is given a fresh perspective through the prism of Angeletics and Messaging Theory as developed by Rafael Capurro and the author in our 2011 publication *Messages and Messengers* (Capurro & Holgate, 2011). In a close analysis of the messaging paradigm employed by the painter in the *School* and related works a radical new viewpoint of Raphael's artistic message is presented. The orthodox theological interpretation of *The School* (notably by Giorgio Vasari (Vasari, 1550), Johann David Passavant (Passavant, 1839) and Eugène Müntz (Müntz, 1888) is questioned in the light of the philosophical framework provided by the exiting and departing messengers—Diagoras of Melos and Theodorus the Atheist. Diagoras himself represents the transforming mission of *angelos* (messenger) at work in the Renaissance theatre of knowledge and is an avatar for Raphael's essentially heteronomic philosophy. In conclusion the author draws a parallel between the Platonic *Hieros Logos* depicted in the *School*, the autonomic theocracy of the Renaissance and our contemporary posthumanist world of Big Data with its veneration of the algorithm and its seductive reduction of *Logos* to the logo and the brand. The true message of the *School* reveals itself to us as a warning about the precarious state of global citizenship in our digital age.



Fig. 1 Raphael's *School of Athens* (1509)

Introduction – the Philosopher as Messenger

For over five hundred years the painting known as the *School of Athens* by Raphael (Raffaello Sanzio da Urbino, 1483–1520) has been subjected to analysis by a number of interpreters starting with Raphael's contemporary, the painter Giorgio Vasari, to theologians, art historians, classics scholars and travellers. There has scarcely been a significant consensus about the identity of many of the characters portrayed in the work. In this article I would like to shine a fresh light on the masterpiece by applying the key ideas and philosophical framework of Angeletics, a discipline developed by Rafael Capurro in the 1990's and formulated in our jointly edited publication *Messages and Messengers* (Capurro & Holgate, 2011). In January 2011 Capurro made the observation

Messengers (and the use of *angelia*) in the political and military context of Ancient Greece were critical to how Greek society worked and to the art of convincing both friends and enemies (*rhetorikos*). The Habermasian process of finding a political consensus is basically dependent on messages coming from “the outside” of the system (*Fremdreferenz* in Luhmann's terms). This is why I find the situation painted by Raphael in his *School of Athens* with the “angelos” coming with news to the circle of Plato and Aristotle an excellent visual metaphor for my own philosophy of Angeletics. (Capurro, 2011, personal communication)

Who then is this young semi-naked messenger figure and what is the message (*angelia*) contained in the scroll and the two anonymous codices he carries? Who amongst this as-

sembly of great minds is the intended reader? How does this angeletic situation epitomise the underlying message of the painting? Clearly, in cinematic parlance, it is the inciting incident of the story; the modern eye is drawn to focus on the action of the harbinger's arrival rather than on the more static central protagonists, Plato and Aristotle. Few commentators of the work since Giorgio Vasari have paid much attention to this event (known as the 'left edge') and its relevance to the overall message of Raphael's masterpiece but I believe it is the key to understanding its concealed meaning. Eugène Müntz grasped the *angelia* (message) of Diagoras and the narrative dynamic of the work when he commented on the "rhythmical intention" of the motive of the messenger

This motive, repeated at the two extremities of the fresco, gives it wonderful unity and movement, for the ardour of the young philosopher, who is so eager to take part in the debate that his feet scarcely touch the ground as he comes up, like one of the angels in the fresco of the Heliodorus. At the other extremity of the composition, a young man is running away; and it has been supposed that Raphael intended to represent by these two figures the beginning and the end of the great Greek school. (Müntz, 1888)

Similar flying messenger figures tend to appear in many of Raphael's later paintings culminating in the ascending Christ of the *Transfiguration*, but, in the *School of Athens*, the travelling messenger from "outside the system" of ancient Greek philosophy gives both sense and impetus to the work.



1. Gorgias of Leontini, 2. Diagoras of Melos, 3. Critias of Athens, 4. Aeschines, 5. Pericles, 6. Xenophon, 7. Thrasymachus of Chalcedon, 8. Alcibiades, 9. Anaxagoras of Clazomenae

Fig. 2 The *School of Athens*, the left edge

The *angelia* of Diagoras

So what is the news that this *angelos* is eagerly bearing from beyond the framework of the *School*?

The consensus interpretation since art historian Johann David Passavant's *Rafael of Urbino and his father Giovanni Santi* has been that the messenger refers to Diagoras of Melos

The man half-clothed hastening from the left with writings in his hand is Diagoras of Melos, the freedman, a disciple of Democritus. He is ranked among the Sophists, and his declared atheism forced him to leave Athens. The two other Sophists beside him are Gorgias of Leontini, a pupil of Empedocles, and Crites of Athens, who represented religion as derived from politics, and who was the constant adversary of Socrates. (Passavant, 1872, p. 92)

Very probably the avuncular figure is Critias of Athens (not Crites) and his Renaissance doppelganger Marsilio Ficino who founded the neoplatonist New Academy in Careggi. Critias is one of the Thirty Tyrants who originally banned Diagoras from Athens and placed a price on his head for his *atheos*, his destruction of the herms and his attack on the Eleusinian mysteries around 415 B.C. (Romer, 1996). He purportedly became a non-believer as a result of a trial against a rival poet for plagiarising a paeon (ironically a hymn to the gods). His father Teleclides was known as the Impious. The capped figure behind Diagoras's head who gives him an encouraging salute is (according to Passavant) Gorgias of Leontini, the pupil of Empedocles. Just below the messenger is the laughing Democritus of Abdera who reportedly bought Diagoras out of slavery and trained him in philosophy. The figure who gives him a welcoming wave is Aeschines the orator, accepting the poet into the circle of the Sophists. In fact the whole left edge reflects the *atheos* of the Presocratics and the Sophists first articulated in the *Derveni papyrus* ascribed to Diagoras (Janko, 2001). The traditional pairing of Heraclitus/Democritus in the bottom left also reflects this chronology. It may be that here the message is destined for Alcibiades, depicted in the centre of the *School*, and that it contains an appeal for clemency to be delivered to the statesman who condemned the young Melian to death and put a price on his head.

I agree with Daniel Bell (Bell, 1995) that the stub-nosed philosopher addressing the group is not Socrates but Anaxagoras. This is an error created by Giovanni Bellori in his *Lives of the Artists* (1672) and perpetuated in Raphael scholarship ever since. Firstly, the figure is too tall, and secondly, he is engaging his pupil Pericles (sporting his signature helmet) in discussion by counting on his fingers with his arm extended as he was commonly depicted in antiquity. Anaxagoras (literally "Master of the Field") is demonstrating to his group of soldier philosophers that man is the most intelligent of animals because he has hands—a human being is a creature with a mind and ten fingers. However the pathetic sitting figure hunched over in the foreground is not Socrates (as Bell suggests)—it is definitely Diogenes of Sinope (the Cynic). Diogenes Laertes writes

One day, observing a child drinking out of his hands, he cast away the cup from his wallet with the words, "A child has beaten me in plainness of living." He also threw away his bowl

when in like manner he saw a child who had broken his plate taking up his lentils with the hollow part of a morsel of bread. (Diogenes Laertius, 1925)

So where is Socrates to be found? There is one person in the canvas who faces us squarely with eyes lowered in humility wearing a robe of patrician purple with a golden border. He is the old bald man in the purple robe standing between the counting Anaxagoras, Socrates' teacher, and Plato's entourage. Alcibiades—the handsome youth immediately to the right of Anaxagoras—displays a shaky movement of his arms, a reference to that famous incident of inebriation in the *Symposium*. He is not paying attention to Anaxagoras at all but gazes over his shoulder at his friend Socrates who reportedly saved his life on the battlefield.



Fig. 3 The *School of Athens* with Socrates in the purple robe behind Anaxagoras

According to the ethos of the Sophist it behoves a wise man to keep his hands hidden beneath his robes and not to flourish them about wildly. The Renaissance personage appearing as Socrates is, in my view, Marco Fabio Calvus of Ravenna, the Pythagorean ascetic and translator of Hippocrates whom Raphael greatly respected as a father figure. Calvus, with his knowledge of Greek history and sculpture, was a major source of information for Raphael and shared a vision of the re-creation of ancient Rome. His stoic lifestyle, and commitment to artistic truth, endowed him with a Socratic aura. His fate resembled that of the Greek philosopher when, during the sack of Rome in 1527, his life was ended during a massacre perpetrated by the pillaging army of the Holy Roman Emperor, Charles V. Calvus, as a translator of Hippocrates and Vitruvius, also represents the *angelos* tradition as his life was about bringing the message of Greek civilisation, lost during the Middle Ages, to the Renaissance. In Wilhelm Kelber's biography of Raphael (Kelber, 1979, p. 146) Fabio's influence on the painter is described in detail. Now the nature of the *angelia* carried by the arriving slave messenger becomes clearer. Diagoras of Melos, who had been unjustly

treated by the Athenians and who had seen his compatriots butchered by Alcibiades in 415 B.C. now presents his case to Socrates for judgment. Alcibiades' anxious look over his shoulder reminds us how his friend had once excused him for that injustice. His inner conflict is mirrored by his *contrapposto* stance. But Socrates, true to his nature, does not pass judgment but stares downwards calling for our response in keeping with his maieutic method. His encompassing purple coat with the golden border is a reference to passages in Diogenes Laertius's account of Socrates in his *Lives and Opinions of Eminent Philosophers* written in the third century B.C.

Ameipsias: "You come to join us, Socrates, worthiest of a small band and emptiest by far! You are a robust fellow. Where can we get you a proper coat?"

Socrates: "The purple robe and silver's shine more fits an actor's need than mine." (Diogenes Laertius, 1925)

Laertius's *Lives* as well as the tenth century Byzantine *Suda* and the *Nuremberg Chronicle* (1493) were very likely Raphael's major sources for the *School*—all available from the Vatican Librarian, his close friend Tommaso Inghirami (Joost-Gaugier, 2002, Chapter 7). Thus Socrates (in patrician colours) stands between the school of the Sophists, atheists and orators (representing *pathos* and the rhetoric arm of the Trivium) and Plato's cenacle (*logos* and dialectic) with Aristotle and his entourage representing *ethos*. The tall bald and bearded figure flanking Aristotle's group on the right has been identified by Passavant as Chrysippus of Soli, the father of formal grammar, who represents *grammatikos* (Passavant, 1872, p. 95). In fact the figure bears a strong resemblance to the sculpture of Chrysippus in the Museum für Abgüsse Klassischer Bildwerke in Munich.



Fig. 4

Chrysippus in the *School of Athens*

**Fig. 5**

Statue of Chrysippus in the
Museum für Abgüsse Klas-
sischer Bildwerke, Munich

This explicates the structure of the trivium in Raphael's allegory of the Liberal Arts—which has never been satisfactorily explained. It also reinforces the key angeletic view of Socrates as a mediator between the rhetoric tradition—here the Sophistic atheistic and hermeneutic *dia*-logue—and the conceptual worlds of Plato's *logos* and Aristotle's *katagorein*. Such an interpretation reinforces Rafael Capurro's important insight into the nature of philosophy as communication and messaging not just as proclamation and attribution, i.e. the philosopher *as* messenger

The philosopher is a messenger that passes on (*dia*) ideas through the medium of the critical and autonomous *logos* instead of proclaiming a mythical truth coming from above. (Capurro, 2011, p. 164)

Plato, with his upward-pointing finger referencing the ideal hierarchical world of forms, represents the vertical autonomic perspective. He is glaring angrily at Chrysippus and his teacher Zeno of Citium whose Stoic philosophy affirmed the primacy of *phantasia* and *katalêpsis*, universal *epochê* and propositional logic, a more empirical and heteronomic view of *logos*. Aristotle with his intervening hand gesture attempts to mediate between them as if to say “Hold on Plato, Chrysippus does have a point.” In fact the *School* is not about the harmony of thought between Plato and Aristotle after all. It is about the conflicts, differences and repercussions (akin to the Heraclitian *polemos* and *dike eris*) of their two philosophies. Nearly all of the various subgroups in the painting are self-absorbed and are not communicating with each other. Further to the right the Peripatetics, the Eclectics and Radical Sceptics go their separate pessimistic ways. Then, as now, philosophy has lost its passion and perspective. Then, as now, science has lost its ability to network across the disciplines. The cool scientific blue in the robe of Aristotle is repeated in Diogenes' vestment and in the mathematical group around Euclid/Bramante downstage right. Next to Diogenes the Cynic we see Epicurus asking Crates to explain the famous anecdote about the beggar's cup documented by Diogenes Laertius and more broadly the justification for a

life committed to *akatalêpsia* (nothing can be known and action is impossible) *askesis* and shamelessness (*anadeina*)—anticipating Sloterdijk’s philosophy of kynic action. “Where is the hope? Where is the joy? What has happened to the Socratic tradition?” asks Epicurus. In reply Crates points at his pupil Zeno of Citium with his arm around Chrysippus saying, “The Stoics are responsible for this mist of confusion and that is why I left them to follow Diogenes of Sinope.” Diagonally upstage right Carneades, the head of the Third Academy, observes this incident aware that the knowledge of Aristotelian causes, the *causarum cognitio* (the original title of the painting), has been abandoned. His downward-pointing finger tells us that Platonic idealism has gone south just as the ideals of the High Renaissance and the dominant Neoplatonism of Marsilio Ficino were to flounder at the dawn of the sixteenth century.

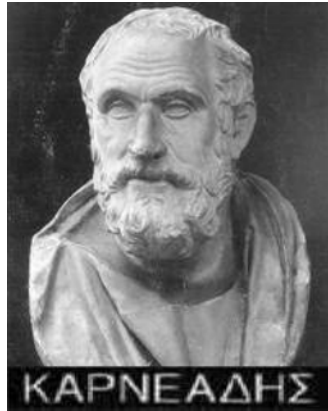


Fig. 6

Bust of Carneades



Fig. 7

Carneades in the *School of Athens*

Could it be that in our own epoch we are witnessing, like Carneades, with the dominance of social media, big data, reductionist science and fundamentalist religions a similar dumbing down of knowledge and a trivialisation of thought and individual creativity? The

lofty ideas of Plato's Academy and Classical Greek philosophy petered out in scepticism and narcissistic hedonism. The delayed message of the *School of Athens* reaches us as a warning for our society across half a millenium.

The *angelia* of Diagoras then is a message about passion for justice and the truth of art, egalitarian cosmopolitanism and the need for action to bring about change. The passionate gold in the robe of Diagoras is reiterated in the garb of Chrysippus but as we progress to the right the colours become faded and shabby. Finally, the messenger exiting the scene on the far right, the outspoken Theodorus the Atheist, casts a look of despair over the whole proceedings. Where is he heading? His destination is to be found elsewhere—over on the north wall of the Stanza della Segnatura in Raphael's *Parnassus* where his doppelganger is seen flirting with Clio the muse of history who has a matching pagan design on her arm. Could this character be an avatar of Raphael himself flirting with history by affirming the secular hedonism of Theodorus and at the same time disclosing a message of support for the pagan mysticism secretly espoused by Giovanni Pico della Mirandola, his nephew Gianfrancesco Pico and Egidius of Viterbo?



Fig. 8

Youth with Clio in *Parnassus*

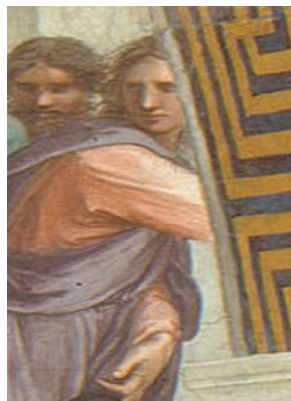


Fig. 9

The Departing Messenger

Thus the *angelia* has been delivered in the various messages and modalities—all the scrolls, charts, tablets and books which the famous philosopher-messengers are holding, inscribing or designating—but its sense has not been received and understood by them. The original scroll and codices are gone. Passion for justice and truth has faded. Then, as now, solipsism, scepticism and hermeticism rule philosophy and science. Then, as now, the *evangelium* has become Nietzsche's *Dysangelium* where truth becomes its own opposite in a Kafkaesque universe of circulating uncertain messages coming from nowhere and going nowhere. In this school of philosophy, self-absorbed insularity triumphs over genuine transdisciplinary communion. The gaze of the departing messenger (*as* Theodorus the Atheist) is directed past Raphael towards Ptolemy, his former master, and the group of keen young mathematicians involved in the teachings of Euclid. Here there is a glimmer of hope at the dawn of the Scientific Revolution that will usher in Galileo, Descartes, Leibniz and Newton. A similar hope for the mathematical masterminds of our own digital age has transformed that glimmer into a veritable Utopian glow.

A Delayed Message About Plagiarism and Paganism?

The news then appears to be about *atheos*—the Nietzschean news that the gods are dead. Diagoras (*dia-akor-as* = across the field of action) represents the pathos of personal injustice. Furthermore, Diagoras is carrying a scroll and two anonymous codices. The scroll represents the Orphic tradition of *mythos*, the codex marks the birth of the book and with it the rise of Christianity and its evangelical message. The scroll/codex contrast also reflects the conflict between individual expression and the copy, the reproduction, the scientific principal of reproducibility. Ficino, we remember, was the Renaissance apostle of the individual and originality. The running figure of Diagoras—a slave and also the most vocal atheist of antiquity—carries a message of personal injustice, rather than the cool philosophical doubt of Protagoras; his presence contradicts the official code of the painting glorifying the union of Holy Christian Idealism and Platonic metaphysics (and their hierophantic representatives—Plato and Pope Julius II). Diagoras heralds in the new age of action and protest—remembering that the Augustinian monk Martin Luther was working on his Ninety-Five theses in 1511 and the Reformation itself was only a few years away. As a self-styled “philosophical painter” Raphael must have absorbed these undercurrents of change and according to Vasari he could be sharply critical of the Church in spite of Pope Julius's enthusiastic patronage of his work. For example, when accused by two cardinals of painting the apostles' faces too red Raphael retorted that this was because in heaven St Peter and St Paul would blush about what the cardinals of Rome were doing to their flock (Passavant, 1871, p. 133).

As the likely author of the *Derveni papyrus* (Romer, 1996; Janko, 2001) Diagoras can claim to be the first hermeneutic philosopher in his deconstruction of the gods by interpreting their names. As a kindred spirit of Heraclitus (mentioned in the *Derveni papyrus*) he, along with Democritus his teacher, espoused the principle of air (*pneuma*) which was later a central concept in mainstream Stoicism and the Hellenistic philosophy of Chry-

sippus. There is a direct line from *pneuma* in the Presocratics to the concept of spirit in Christianity, to *esprit/Geist* in Western philosophy and (via Hippocrates) to “respiration” in biomedicine. The matching of the gold in Diagoras’s tunic with that of the robe worn by Chrysippus points to their philosophical affinity.

Could it be that here in the Stanza della Segnatura Raphael has left us a subtle delayed message (to use Vilém Flusser’s term) about the Church and its secular counterpart, High Renaissance Platonic idealism? An analysis of his paintings from the Betrothal of the Virgin (*Lo Sposalizio*) in 1504 to the erotic *St Cecilia* (1516) confirms the presence of this dark alter ego, a daemonic shadow, issuing a secret message of *atheos*, of pagan hedonism and mysticism. In each of these works the scroll motif is a visual clue to the diagonal or wry perspective undermining the official code of Christian doctrine.

For example, his first major work *Betrothal of the Virgin* (1504), painted at the age of twenty-one, was a pastiche of his master Perugino’s similar painting but the mixed message contained in the action of the angry suitor in the right foreground goes far beyond the content of Pietro’s orthodox homily.



Fig. 10 *The Betrothal of the Virgin (Lo Sposalizio)* (1504)

The young man in the folksy cap (who closely resembles Raphael's early self-portrait) dramatically bends his rod in protest right in front of the marriage ceremony. There are obvious implications of a sexual affinity with the Virgin (and possibly a paternity claim) suggested by the matching red colour of their clothing, the corresponding shape of arm and leg and her yellow veil wrapped around his waste as well as by her gaze which is directed beyond the wedding ring towards the youth's well-packed codpiece. In contrast, Joseph the carpenter is a spindly almost effeminate figure whose thin rod is scarcely blossoming compared to the one depicted by Perugino. Joseph's torso is in *contrapposto*, expressing an inner conflict about the wedding. The ring itself has been borrowed from the married woman to the left and her female companions look sceptical about the validity of this contrived union and Mary's ostensible virginity. Raphael's signature scroll appears on the suitor's cap and on his right arm is a pagan number symbol (hash) which is mirrored on the hat of the officiating priest indicating that this is in reality a heathen ceremony. The latter displays on his gown apparently arcane squiggles which seen from different angles reveal themselves as anamorphic graffiti—repeated later in *La Disputa* by Raphael on the gaudy gold coat of Sixtus the Fourth. This is around the same time as da Vinci, Michaelangelo and Dürer had just discovered anamorphic art as Jurgis Baltrušaitis describes (Baltrušaitis, 1977) and clearly Raphael was a great innovator in this. Significantly the scroll icon is repeated eight times on the pagan temple where Raphael Urbinas has left his signature.

If, as Vasari claims, Raphael was an outspoken critic of the Church, and a closet atheist, the question arises—when did this occur and who could have influenced him? We must remember that as an eight-year old he saw his mother, grandmother and sister snatched away by death within the space of a week and then, a few years later, his father. As a boy his first collaborative work with his father was on a sketch for the *Massacre of the Innocents*. He watched Giovanni, this man of sorrows, turn towards a more secular humanism at the court of Urbino and away from Christian belief only to return to the fold just before he died. Giovanni's features appear again and again in faces depicted in Raphael's early paintings—as the officiating priest in the *Betrothal of the Virgin*, as Simeon, Joseph, one of the Magi and God the Father in the predella to the Coronation of the Virgin, and as the sceptical apostle in the *Assumption of the Virgin* of the Oddi Altarpiece (1502-4) who stares in despair at the roses and lilies growing from the coffin and ignores the glory of the heavenly coronation. Young Raphael's alter ego looks out at us from the right hand corner asking for an explanation for the death of his own mother. Giovanni was also exposed to the pagan traditions of Umbria with its Etruscan heritage and to the liberal views of the writers Baldassare Castiglione and Ludovico Ariosto. Just as Diogenes the Cynic had responded emotionally to an unjust fate and found no evidence for the gods, Raphael may never have come to terms with his mother's unjust death and turned for solace to the beliefs and symbols of pagan cultures. Jean Mallinger claimed that Raphael's great secret was that this artistic darling of the Papacy was a Pythagorean initiate who populated his oeuvre with occult images and symbols (Mallinger, 1944). Perhaps it was not mere coincidence that Mirandola, who wrote the philosophical Bible of the Renaissance *The Oration on the Dignity of Man*, experienced his Damascene conversion to Averroism and

the Hebrew Kabbala in Perugia, the home of Umbrian symbolism and the site of Raphael's own artistic and intellectual apprenticeship. Mirandola's philosophy and his influence on Raphael have been explored by Christiane Joost-Gaugier in her *Pythagoras and Renaissance Europe* (Joost-Gaugier, 2009).

A subtextual message of fatalism runs as an undercurrent throughout nearly all of Raphael's works, many of which were altarpieces for funerals pointing to black doorways, tomb entrances or windows. The characters themselves, especially the wingless messengers and foreground slave figures guide us to the subliminal message of *memento mori* (as in Holbein's painting *The Ambassadors* with its anamorphic skull). Nearly always it is the scroll icon (hidden sometimes in a lock of hair or an architectural ornament) that unlocks the official code and reveals the delayed oblique message for posterity. In *La Disputa* the scroll appears as curly locks in the hair of the slave messenger and in the peak of his assistant's cap. The latter leans over the black doorway while the sinister hooded figure, a *Piagnoni* located between Dante and Savonarola, stares at the viewer reminding us of *vanitas* and mortality.

Is Diagoras the *alter ego* of Raphael?

Since in the *School of Athens*, the classical figures are doubled with Renaissance personages, who then is the contemporary personality concealed in the figure of the message-bearing slave of the *School* whose face is turned away from us? Could it be the alter ego of Raphael himself, his Jungian shadow? His official presence is of course recorded in the figure standing downstage right next to his teacher Pietro Perugino. He belongs to the Euclid/Bramante group reflecting his public persona as official architect and painter to the Vatican. But Raphael's shadow has been cleverly hidden in the guise of the messenger slave. Several clues are available. First his flowing robe describes the shape of a scroll representing Diagoras's poetic paeon, which lead to the accusation of plagiarism, his court case, his atheistic outrage and ultimate banishment from Athens. But the scroll also points to Raphael's literary heritage in Urbino where he grew up with his writer/artist father Giovanni at the court of Duke Guidobaldo da Montefeltre. Here Raphael became the self-styled philosophical painter and was influenced by thinkers and writers like Count Castiglione and Neoplatonists such as Pietro Bembo. Here Giovanni organised pageants and theatrical events which clearly influenced his son's dramatic style. The scroll icon also appears as a lock of hair in the official representation of Raphael next to Perugino. As Glenn Most (Most, 1996) points out, the *School of Athens* is both literature and art and is meant to be read (like many of Raphael's paintings) from left to right. The Etruscan paganism of Egidius of Viterbo informs the *School of Athens* (as Most argues in his article). The parallels between Diagoras and Raphael become more evident when we remember Vasari's assertion that the painter was an atheist and lived a riotous personal life (as did Diagoras) and owed his early demise to a fever caused by sexual overexertion with his lover La Fornarina. That decadent

image has been disputed over the centuries by Christian apologists in the beatification of Raphael as the divine prodigy.

But it is the accusation of plagiarism which unites the two young men. Raphael was dubbed an adopter of influences throughout his life and constantly suffered accusations of plagiarism from Michaelangelo. Here in the *School of Athens* he has clearly borrowed from three works by Michaelangelo—the Apollo figure in the frieze from the *Dying Slave*, the brooding Michaelangelo in the foreground from Buonarrotti's *Jeremiah* fresco in the Sistine Chapel and even the robed messenger slave himself from Michaelangelo's cartoon for the *Battle of Cascina* which Raphael greatly admired. The Critias/Ficino character is gesturing towards the bas-relief representing cupidity and carnality. The official code would interpret this as a gesture which disapproves of prurience and admonishes the slave's past sins. The three bas-reliefs are also a reference to Plato's tripartite division of faculties into reason, anger and animal instincts. The subtextual message, however, affirms the world of the flesh and indicates a common bond between the two. Then, if we follow the diagonal line which goes from the fingertip of Critias alias Ficino, it leads straight to the figure of Michaelangelo in the foreground who is writing (not painting). This is a conceit about the nature of signature (in the *Stanza della Segnatura*), the original and copy theme of Plato's *The Sophist*, and Raphael is defending himself against Buonarrotti's accusations—remembering that while busy on the *School* he was sneaking across to the Sistine Chapel to observe his accuser at work. Just as Diagoras is presenting his case to Socrates in defence of an unjust accusation of plagiarism, Raphael is appealing to Fabio Calvus, his most respected friend, to justify and vouchsafe his artistic originality.

This theme of plagiarism is echoed in the Raphael/Perugino coupling downstage right and the reference to similar copying issues between Apelles and his teacher Protogenes. Interestingly the Michaelangelo figure and the Raphael/Perugino duo were later added at the same time to the original cartoon. Rafael Capurro brilliantly analyses in his article *Ethik im Bilde* (Ethics in the Picture) this phenomenon of *Geister-Zitierung* (Spirit Quotation) (Capurro, 1999). In the same vein, Raphael has quoted Bramante's painting of the crying Heraclitus and the laughing Democritus in the lower left corner (Figure 11). Like Hermes the Trickster who delighted in mischievous camouflage, Raphael has cheekily placed Pope Julius the Second's wreath on the head of the atheist Democritus while doubling his likeness with that of his close friend the poet and actor Tommaso Inghrami, the Vatican Librarian and Papal Secretary who was probably the main source for the philosophical content of the painting itself (Joost-Gaugier, 2002). Raphael's (1511) oil portrait of Fedra (Figure 12) with his strabismus reflects the fact that an artist presents a skewed or diagonal message along with directly representational codes and accepted aesthetic forms. This dynamic interplay between code and message is, from the viewpoint of anaglyphic aesthetics, the creative source of an art expressing itself as uncanny, anamorphic awry.

**Fig. 11**

Democritus in the *School of Athens*

**Fig. 12**

Raphael's *Portrait of Fedra*

Raphael's Knowledge About Diagoras of Melos

A critical point in my analysis is the provenance of Raphael's knowledge about Diagoras of Melos. His major source for the content of the *School* appears to be the *Lives and Opinions of Eminent Philosophers* by Diogenes Laertius. And yet Diagoras is only mentioned in passing in one sentence there. Where then did the painter find the biographical and authorial detail about him that I have described? Sources of Greek philosophy were scant at the time and Raphael reportedly knew little Latin and no Greek. Tommaso Inghirami, the Vatican Librarian and scholar, is the most likely provenance of such detail, particularly as his face has been merged with that of Democritus in the *School*. The most probable additional sources are the *Nuremberg Chronicle* of 1493 and the Byzantine *Suda*, a copy of which would have been held in the Vatican Library or even in Federico's extensive collection in Urbino. Here the story of Diagoras and that of Hypatia are narrated in detail. Nearly all other content in the *School* can be traceable to Diogenes Laertius's *Lives*. Most of the physical representations of the philosophers come from Raphael's observations of statues made during his various journeys with Bembo, Castiglioni, Viti and Fabio Calvus. It would seem that the

School of Athens has for the most part preserved the correct chronology in the history of Greek philosophy proceeding from Gorgias, Diagoras, Heraclitus and Democritus below left through to the Sophists and orators grouped around Anaxagoras, Socrates, Plato with the scholarchs of the First Academy (Plato's nephew Speusippus with Axiothea of Phlius on his left, Xenocrates, Polemo and Craton), Aristotle and the philosophers of the Lyceum, the Stoics Chrysippus and Zeno of Citium, below them Diogenes the Cynic, Epicurus and Crates of Thebes (the fifth scholarch of Plato's Academy), above them the Peripetetics and Eclectics through to Arcesilaus (the head of the Second Academy) and Pythodorus his scribe, Carneades (the scholarch of the Third) and the radical sceptics on the far right (Pyrrho of Elis, Timon of Phlius and Theodorus the Atheist) (Holgate, 2015).

The claim that Heraclitus of Ephesus is a double of the Michaelangelo figure in the centre foreground is a longstanding error. The "crying philosopher" is represented on the far left opposite Democritus, the 'laughing philosopher,' in the proper chronological position amongst the Presocratics. The Greek philosopher in the foreground hiding behind the features of Michaelangelo is more likely Protagoras of Abdera whose message was "man is the measure of all things." If so, then Glenn Most's thesis about the Protagorean framework of the *School* gains strongly in credibility (Most, 1996).

Angeletic Features in the *School of Athens*

Diagonal polarity

Another angeletic feature present in the *School* (and throughout Raphael's oeuvre from the *Coronation of the Virgin* in 1504) is the move towards a diagonal perspective. In the early Renaissance we see with Ghiberti, Botticelli and Perugino the horizontalisation of figures in landscapes and away from the vertical and hierarchical arrangements in medieval painting. Raphael's distinctive double structure (which intrigued Nathaniel Hawthorne) expressed a division between earthly and heavenly worlds. Beginning with *Lo Sposalizio* (1504) Raphael created hidden layers of message by using diagonal lines between figures and objects which tended to contradict the vertical and hierarchical codes. Here in the *School of Athens* the hierophantic code is embodied in Plato's upward pointing finger and its vertical autonomic perspective and in the two levels of steps placing the philosophers above the scientists. This is balanced by the horizontal line which groups them as equals in two heteronomic arrangements. The four diagonal perspectives—one linking the arriving messenger Diagoras/Raphael to Michaelangelo, the second connecting the Pythagoreans to the vanishing point situated between Plato and Aristotle, a third from there to the Euclid/Bramante group and a fourth linking Diogenes to the Radical Sceptics and the departing messenger, Theodorus the Atheist—represent alternatives to the official party line of Catholic and Neoplatonist doctrine. These diagonal perspectives express the wry parallax or anamorphic viewpoint that Jacques Lacan and Slavoj Žižek have described (Žižek, 1989). In fact the *School of Athens* can be viewed as a Lacanian bolagram which pivots around

enigmatic anamorphic characters lost in a matrix of knowledge. Thus the Renaissance code about the unity of knowledge, religion and art is reframed and polarised by the boundary behaviour of the fulfilling angel (Diagoras) and the empty angel (Theodorus).

Similarly in *La Disputa del Sacramento* (1510) there are four diagonal lines of thought which represent alternative messages in opposition to the vertical and horizontal codes of orthodox theology (Figure 13). At the bottom left, the architect Bramante and other Renaissance painters and intellectuals, including the controversial Pico della Mirandola (Joost-Gaugier, 2002), are in dispute with the Church Fathers (art versus theology). In the top left corner, a naked hippy-like Adam is confronting St Peter with his nudity (innocent nature versus original sin). In the top right St Paul, disguised as the atheist Ludovico Ariosto, angrily confronts John the Baptist who defends the real presence of Jesus and his transubstantiation against emerging Pauline appeals to individual conscience and the text of the gospels (ritual versus faith). In the bottom right a slave messenger disputes the hegemony of Christianity as expressed in the Eucharist by pointing to the pagan symbol of the Endless Knot decorating the monstium (Christian doctrine versus paganism).



Fig. 13 Raphael's *La Disputa del Sacramento* (1510)

Raphael's unique techniques of concealing and revealing information throughout his oeuvre bear the hallmarks of angeletic thought—mirroring through form, shape and colour, foregrounding of figures, anonymous faces turned away or in shadow, the use of *contrapposto* to indicate psychological ambivalence, repetition of icons and symbols, facial expressions or hand gestures which contradict received meaning, ambiguous pointing or eye directions, hidden anamorphic designs and doodles, doubling of reference points (e.g. in the *School of Athens* where each face refers both to a Greek and a Renaissance personage), situational irony and veiled socio-political criticism (cf. *Coronation of Charlemagne*, *Fire in the Borgo*, *Miracle at Bolsena*, and *Vision of the Cross*), referencing beyond the frame or *debordement du sens* (Vissing, 1977), directional hand gestures and interactive glances, and especially the creative tension between message and code.

Here in the *School of Athens* the official code (the wedding of Platonic idealism and Christianity) conceals a different message borne by the messenger slave—atheistic nihilism. The black doorway of death appears at the bottom of the left edge below the facing figures of Heraclitus and Democritus to remind us of our mortality. Let us not forget that the poet and artist Raphael himself would have been banished from Plato's Republic of Reason and possibly threatened with death (like Diagoras). Ironically the very act of writing itself, exemplified here in various scenes depicting inscription, was proscribed by Plato. It is the exiting messenger (Theodorus the Atheist) who with his parting expression of disillusionment and his deprecating *mano fico* hand gesture, seems to be saying "There is no place for me or my poetic *angelia* in the Castle of Reason or the Citadel of Science (Figure 14). All I can do is run away and embrace anonymity. For knowledge without passion, communication and a sense of justice is moribund." Disillusioned young people of today might identify with his despair. The *School of Athens* retraces the end of Plato's Academy, records the demise of Renaissance idealism and anticipates the end of our postmodern age.



Fig. 14 Theodorus the Atheist departing from the scene in the *School of Athens*

Witnesses—ambiguity and the deictic gesture

Throughout Raphael's paintings cues and clues to sense are provided by figures who display pointing gestures and are coupled with a witness responding to the sense offer with an ambiguous expression or stance or by confronting the viewer in a theatrical aside. Raphael thus challenges the witness outside the frame to respond to the situation depicted and to look for a message behind the official code of accepted meaning. This phenomenon anticipates the theatrical aside and Brecht's alienation effect.

The Fire in the Borgo: Message versus Code

The *Fire in the Borgo* (1514) celebrates the intercession of Pope Leo IV in 847 A.D. to stop a raging fire in the Borgo district of Rome through his benediction from the loggia of St. Peter's (Figure 15). The woman raising her arms in the foreground appeals to the Pope for a miracle. This is the official code. The message, however, is somewhat different. It is the man of Middle Eastern appearance who, like the Good Samaritan, takes action and risks his life to save the mother's baby from the flames. The figure carrying the old man to safety (referencing Aeneas and his father) and the naked athletic youth (alluding to Michaelangelo) are involved with the victims of the fire and display their humanism in risk engagement and action—true to the Renaissance ideals. Leo remains distant aloof and safe. The work was probably executed by Giulio Romano, Raphael's pupil, but the design and philosophy of the piece are Raffaello's and express his personal message about the Church and the Papacy of that time.



Fig. 15 Raphael's *Fire in the Borgo* (1514)

The “Ecstasy of Saint Cecilia”: Music, death and sexuality

To what kind of ecstatic experience does the painting *The Ecstasy of Saint Cecilia* (1517) bear witness? The traditional code of the martyrdom of St Cecilia who sacrificed her earthly music and passion for spiritual ecstasy is depicted here. The painting (Figure 16) was commissioned to honour Elena Duglioli of Bologna who had adhered to a vow of chastity throughout her marriage. Friedrich Nietzsche later saw in the painting a justification of Wagnerian rapture.



Fig. 16 *The Ecstasy of Saint Cecilia*

The dark brooding figure on her right is both her executioner, the Roman prefect Turcius Almachius, and the apostle Paul. Painted in 1517, when Raphael was strongly influenced by the erotic writer Pietro Aretino (whose features can be glimpsed in the face of Paul), the message is a distinctly Freudian one—that music is the food of love. Phallic and yonic symbolism abounds here—in the Picasso-like instruments, St John’s Apostolic eagle pecking at the opening labia of the martyr’s garment, St Paul’s sword penetrating the triangle, the yonic shell and the lascivious stance *in contrapposto* of Mary Magdalene depicted as La Fornarina, Raphael’s lover, who is nestling against St Augustine, the patron saint of chastity.

The official moral code is expressed in Cecilia’s chastity belt and reinforced by the Pauline injunction “marry or burn” of I Corinthians and by the figure of St John as the

patron saint of virginity. But lurking beneath this surface meaning is a concealed message about open promiscuity, adultery and earthly delights. The witness confronting us with the painting's subtext is La Fornarina, a Renaissance *femme fatale* masquerading as the penitent prostitute.

Behind this "fine and private vision of virginity" (Stefaniak, 1991) *The Ecstasy of Saint Cecilia* illustrates Žižek's Lacanian notions of *jouissance* and inherent transgression:

Since there is no direct, unmediated relationship between the subject and the authentic, true value, the problem of belief takes on vital importance. But the very separation between belief and knowledge requires that the "true believer" must always be someone else. The Lacanian decentred subject has to live out the authenticity of his being or her *jouissance* through the Other. (Žižek, 1998)

Raphael's Cecilia lives out her *jouissance* through Others who have experienced non-repressed sexuality, the "true believers" in the music of corporeal delights not in noise from broken instruments—the Christian codes of virginity, self-denial and ethereal pleasure.

Pictorial Counterpoint: Oblique and contrary motion

The voices, conversations and debates emerging from the various subgroups give the *School of Athens* the form and structure of a contrapuntally organised musical composition, a fugue in paint.

John Rahn writes:

The internal structures that create each of the voices separately must contribute to the emergent structure of the polyphony, which in turn must reinforce and comment on the structures of the individual voices. The way that is accomplished in detail is... "counterpoint." (Rahn, 2000, p. 177)

The tension found in musical counterpoint between autonomy (independence of rhythm and contour) and heteronomy (interdependence of polyphonic voices) as well as the subordination of vertical (harmonic) features to horizontal and vertical (simultaneous melodic) features, is reflected in Raphael's work and is also a hallmark of angeletic aesthetics. The "oblique and contrary motion" seen in the *School of Athens* and his other masterpieces anticipates the rise of counterpoint culminating in Bach's fugues.

Conclusion

For the past five hundred years, art critics, theologians, classicists and travellers have shaped interpretations of the *School of Athens*. Perhaps it is finally time for philosophers to have their say. And what we are perhaps discovering is that Raphael's complex persona displayed a daemonic dimension that has been largely unrecognised or deliberately disguised. The young, sensitive and graceful boy wonder with visions of Christian piety appears to have

concealed a darker, daemonic spirit which places him firmly in the tradition of Hieronymus Bosch, Goya, Salvador Dali and the Surrealists. The fact that Friedrich Nietzsche described Raphael's final work *The Transfiguration* as a summary of his own philosophy would seem to indicate that atheistic nihilism and a struggle with Christian doctrine played a major role in the lives of both geniuses. Is Raphael's paganism the secular elephant in the sacral Signature Room? Could it be that embedded in the Ambassadors' Palace of the Vatican are the works of a closet atheist who is questioning the pretensions of organised religion and the hypocrisy of its representatives? Was Raphael another Ariosto who, as official painter to the Pope, secreted his message under an official cloak of accepted artistic codes and narratives? The fact that Ariosto, the Renaissance *enfant terrible*, appears in all three of Raphael's paintings in the Stanza della Segnatura gives us a clue.

Raphael displayed an ambiguous trinity of personalities each represented as characters in the *School*—Raphael Sanzio, the creator of magnificent Madonnas and Papal apologist of the Christian story; Raphael Urbino, the master craftsman of the Umbrian School and consummate exponent of technique; and finally the hedonistic Raffaello, the cryptic Pythagorean and explorer of the dark mystic underbelly of the Renaissance. His rebellious spirit was nurtured by controversial authors like Castiglione and his cult of the courtier Bembo, Ariosto and Aretino, rebellious painters like Viti Fra Bartolomeo and Pinturicchio and visionaries of the occult such as Mirandola, Reuchlin and da Viterbo. These daemonic influences are acknowledged in the *School of Athens* where their likenesses have often been embedded behind the visages of their counterparts from antiquity (Holgate, 2015). The angeletic lens which reveals a delayed message in the *School* can be focused on the rest of his oeuvre and on his secret affinities with his Renaissance contemporaries. A more complete understanding of the shadow behind the persona of Raphael can only enhance our knowledge of his complex genius.

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Understanding the Pulse of Existence: An Examination of Capurro's Angeletics

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Abstract

The contribution of Rafael Capurro to the clarification of the uses of the concept of information has a conceptual as well a historical dimension; in this last sense, there are few philosophers of information that can follow the history of the concept of information in the works of the Classics with the accuracy and erudition of Capurro. We find that his contribution embraces the following fields: a) a clear differentiation between subjective and objective information and as a consequence of that b) a clear differentiation between information as order in the universe, different from matter and idea. But the contribution he made has not only been analytical and historical, it has also been creative, opening up for us an understanding of the phenomena of "information" through the differentiation between the act of interpretation of a message (hermeneutics) and the proper act of communication as a specific kind of intentional act. Capurro has opened up a new discipline named "angeletics." As we understand the Capurrian framework, the key idea is to comprehend how "a message produces changes in both the emissary and in the receptor." According to Capurro, a message has two dimensions; one is information, and the other intentionality. It is the aim of our short article to take a closer look at Rafael Capurro's contribution to the understanding of these two sides of the message.

Intentionality and Information

Rafael Capurro introduces a connection between the objective character of a message as information, and the subjective character of it as intentionality. According to Capurro, information is fragmented intentionality (Mitcham, 2000). This observation is crucial to understand the complex nature of human communication. Capurro applies the Greek-influenced term *angeletics* to delimit this new field of study (Capurro, 2011). As we understand Capurro's work, the angeletic perspective leaves behind the opposition between object and subject and substitutes it with inter-subjectivity in context as *noema* and *pragma*; a proper

message will then, not only “inform,” but also “persuade.” The double nature of the human act explains also the relationship that exists between thinking and acting, between the psychological state of *engagement* in acting and the state of *acedia* proper to the processing of pure data. Since Norbert Wiener’s introduction of cybernetics (Wiener, 1950), the technical understanding of information states that information is “not matter, nor energy”; following Capurro we say instead: it is “order” (Flores, 2009). This is a consequence of the angeletical perspective, which does not contradict the technical definition but complements it. To understand Capurro’s angeletics, we introduce the opposition between “order” and “information” (as the measurement of “disorder”) in relation to probabilities. “Order” arises together with certainty while information is the expression of uncertainty. While “consciousness” is the expression of order; “knowledge” and the pure processing of data, belongs to the dimension of information. Intentional acts are organizational and therefore include a very low informational value. On the other hand, information and knowledge, as the result of the fragmentation of intentionality in small and disconnected parts, increase uncertainty and the informational value of the human act.

The perfect ordered act bears no information at all; it is the pure “conscious act.” Therefore, even intentionality can be expressed as the probability of an act—as the absolute certainty created by order. Because order implies certainty, intentional acts are acts of control. On the contrary, when intentionality vanishes at low organizational levels, order disappears into entropy, instituting the state of *acedia*. The dialectics of knowing versus interpreting or that of reasoning versus believing follows this path, fragmenting and reconstructing intentionality, moving from a very uncertain world to a very convincing world, and vice versa.

Angeletics can help us to overcome the “solipsistic” trap of the technical theory of communication. The solipsism of the technical theory of communication has its deeper philosophical roots in Descartes’ “methodic doubt.” The technical approach reduces communication to pure information. The angeletical reduction of solipsism opens for the study of the relation of order as meaningfulness against the fragmentation of meaning. This attempt has a precedent in the work of Jacques Lacan and his reflections about thinking and acting: “I am not, where I am the plaything of my thought; I think about what I am where I do not think I am thinking” (Lacan, 2006). The “think” here stands for “knowledge and information” while the “I am” stands for the intentional act assuming the form of “I believe,” “I exist” and “I am aware of myself.” Of course, Lacan’s concern about the communicative dialectics between the Self and the other are intrinsically angeletic. For Lacan, the unconscious is identical to an entropic world of pure data. He considered that this vast universe was structured as a reservoir of signifiers (pure data), accepting that signification (intentionality) fluctuates freely. According to Lacan, signifiers (pure information) build chains without fixed meaningful (intentional) references. As such, the structure of the Unconscious becomes then a chaotic reality which makes impossible any meaningful analysis of its contents based on a priori interpretation criteria. For Lacan, it is the imprinting of a rhythm in the message that creates the interpretation. That means that “order” arises throughout the establishment of a rhythm inside chaos. For Lacan, to be “an adult,” is to find balances and harmony in the unconscious chaos of the Self. But

the “Self” is a circumstantial illusion and any definitive existential harmony outside the angeletical rhythm is impossible to achieve.

The Rhythm of the Communicative Act

Angeletics then, opens for the study of the rhythm of the communicative act, as a strong indicator of the intentional charge of a message. This rhythm depends on the intentional “weights” present in the communicative act. For instance, from the logical cliché “p implies q,” angeletics allows us to distinguish “p implies Q” in which the capital letter “Q” stands for a heavier (or lighter) intentional weight that reinforces (or undermines) the logical deduction with intentionality. Further, for example: “If A is the case and A implies B; then B also is fulfilled,” known by the scholastics as *Modus Ponens*, it can be expressed rhythmically as weights $A - (a - B) = B$; by means of the arithmetical difference or as $A / (a / B) = B$; by means of quotients.

Furthermore, in a dialogue, someone controls the initiative and this is independent of who is actually acting (speaking and writing). As a consequence of that, in every communication there is a leader and a follower. The relationship between leader and follower is determined by two communicative states: the initiative or communicative-state, and the waiting-state or prompt. Following simple rules it will be possible to make a classification of types of communicative acts. It would be possible to distinguish communicative types that combine different angeletic paths: some examples could be the “command”; the path of “regular conversation”; the path of “asking” or the path of “wishing.” A “command” for example would be a communicative act that monopolizes both the communicating-moments and the waiting-moments. On the other hand, in a “regular conversation” these states are distributed between the participants in the dialog. In the act of “asking” the initiative would be like a boomerang, opening for an answer giving away the prompt but controlling the initiative; finally in a “wish,” the initiative and the prompt would be given away.

Intentionality as the Rhythm of Acting

We shall introduce a text of Jacques Lacan from the *Écrits*, (Lacan, 2006). In his text Lacan presented a “sophism,” understanding by this a process of reasoning which has puzzling conclusions. It is in fact, an “ideal experiment” which reproduces a living situation in a simpler way. The conditions of the sophism are: a) the director of a prison explains for three of the prisoners that they are going to undergo an experiment. Each of them shall be provided a colored disc which shall be hanging on their backs in such a way that it will be possible to see the others discs but never their own; b) the prisoners shall be moved to a room without mirrors. They cannot talk with each other during the experiment; c) each of the prisoners shall have a disc hanging on their back and on the discs shall be chosen

from a set of five discs: three white discs and two black discs; d) the prisoners shall deduce which color has his own disc and the first prisoner who manages to do it shall be rewarded with freedom; e) each of the prisoners get a white disc on their backs. That which happened step by step: (prisoners shall be named A, B and C).

The first step:

1. A thinks: "I see two white discs. Am I a 'white' too? If I am 'black,' I should see B (and C) thinking as follows in the following numerals (2) (and then respective [3])."
2. B thinks: "I see a white disc (C) and a black disc (A). If I were 'black' too (as A is), C should be running to the door immediately. But that has not happened; therefore I am also a 'white.'"
3. C reasons as B did.

Therefore the first conclusion of A is: If B and C together go out just now, then I am "black." But A noted that B and C are undecided and waiting... The second conclusion of A is: I am a "white" too.

The three prisoners go out of the room together and that is the end of the sophism. Lacan says that the logic of the conclusion depends upon the narrative of the circumstances. With our own words, the conclusions depend upon the rhythm of the situation. We notice that a situation like this is not an empirical one. Nothing happens that allows the prisoners to learn from experience. This is obviously a case of logical reasoning and, of course, it is possible to translate it into the language of traditional logic, but only if the traditional logical contents subordinates the rhythm of the facts. We know that in an "if...then" sentence, the true values are determined a priori by logical rules. The prisoners deduce the right situation from facts which have meaning and use "If...then" sentences to draw right conclusions, but it is the timing of the facts and not any a priori rules that connects the "If" part of the reasoning with the "then" part of it. If A, B and C do not suspend their decision for some seconds, they could not draw the right conclusions. If some of them should move wrongly, too slowly or too hastily, all would have drawn the wrong conclusion. Therefore the first conclusion of A is: If B and C together go out just now, then I am "black." But A noted that B and C are undecided and waiting. The second conclusion of A is: I am a "white" too. The angeltics of communication was also studied by Søren Kierkegaard who explained the reasons for religious belief as a consequence of a special type of rhythm in acting.

But what did Abraham do? He arrived neither too soon nor too late. He mounted the ass; he rode slowly along the way. All that time he believed—he believed that God would not require Isaac of him, whereas he was willing nevertheless to sacrifice him if it was required. He believed by virtue of the absurd; for there could be no question of human calculation, and it was indeed the absurd that God who required it of him should the next instant recall the requirement. He climbed the mountain; even at the instant when the knife glittered he believed ... that God would not require Isaac. [...] Therefore, though Abraham arouses my admiration, he at the same time appalls me. He who denies himself and sacrifices himself for duty gives up the finite in order to grasp the infinite, and that man is secure enough. (Kierkegaard, 1994, p. 27)

The logic of rhythm is built upon a dialog that in the case of Abraham is in communication with God. We see also that the dialog consists of a double structure of repetitions and alternatives. In fact any situation, any fact, persists (has some extension in time) or changes to a new situation with different extension. This duration can be put as an identical succession of seconds, minutes or also as the succession of identical things like black or white discs. If the situations persist, then the succession of parts is all identic. But if the situations change, some part is of a different kind. Any situations became intelligible through one and only one instant, the instant which they consciously intersect with each other and decide who gets the initiative. As in a computer's monitor, the privileged instant detects this as a pulsing "prompt" or "input" signal. In the narrative of the *Book of Genesis*, Abraham is tested by God who controls both the prompt and the initiative, placing Abraham in the situation of a prayer.

Some Concluding Words

The work of Capurro allows us to see the field of informatics from a new and bright perspective. He connected the technical world of machine communication with the world of human existence starting with the statement that "information is fragmented intentionality." This short proclamation made intentionality the inverse of information and opened the way for an operative understanding of the meaningfulness of discourse as a process; in other words, the succession of moments during which different intentional fragments of different weights are organized and reorganized to create sense. That is the starting point of *Angeletics*, the discipline that studies diachronically the reorganization of intentionality in a discourse. This is going to have important consequences for the future development of artificial intelligence as the formalized pulse of existence.

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The Demon in the Gap of Language: Capurro, Ethics and Language in Divided Germany

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Abstract

The following philosophical study is centered in three dimensions: a historical epistemology; a hermeneutics of information studies; and a pragmatic analysis of philosophical and scientific concepts. Being stage one of the project “Following trivium: the philosophy of Library and Information Science in the philosophical tradition of language,” it sets out a proposal whose aim is to debate the various conceptualizations of the relationship between the epistemological and the ethical thoughts of Rafael Capurro. Its context resides in a body of studies in information philosophy and ethics developed in the discourses around language, politics and technique in contemporary society. The general objective of the research presented is a discussion of how and in what spirit Capurro elaborated his thinking about the problems and the challenges inherent to an intercultural ethics. It will be argued that the hermeneutical basis of the following study must be understood within the context of Capurro’s ethics by retracing the path he followed—the spirit of his course—and in the context of the spirit of a 1980s Germany where Capurro prepares his “ethics.” In addition, it will be argued that in order to understand the Capurrian ethics of information, one must first understand the epistemological pathway of documentation and the bibliological field in general. Finally, we will outline how the above development of understanding must start from the language that permeates the construction of relevant historical elements. The use of Wim Wenders’ cinematographic work as a discursive resource in this study relates, precisely, to the hermeneutical order of the proposal. The function of *Wings of Desire* in this study is to indicate and suggest the beginnings of understanding the “spirit” of time and space through which Rafael Capurro establishes his preparation and the preparation of his concepts. Keeping in mind the difficulties of extension, the articulation of the epistemological, hermeneutical and pragmatic perspectives looks for a conceptual vocabulary of Capurro’s ethics, of the bibliographical reasons for the construction of such a model, of the discussion about the limits of the researcher’s ethical thinking and of the recognition of the position of transcultural ethics in the information science (IS) epistemology.

1 Initial Remarks: Eudemonism, Ethics and Information in Divided Germany

The awareness that other cultures might have other sets of epistemic values should lead to a recognition that one's epistemic practice is only one among many.
Hongladarom (2002, p.83)

In 1981, in Frankfurt, Germany, Rafael Capurro used, for the first time, the expression “ethics of information”—*Informationsethik*. In preceding years, Capurro completed his education in documentation, followed by immersion in the documental field with a thesis, in 1978, entitled “Information: A contribution to the history of ideas and the etymological bases of the concept of information” (Capurro, 1978). Besides his thesis, a new series of attempts, among other activities, would take him to the creation of the concept of *Angeletics* and the view of information science (IS) as a subdiscipline of rhetoric, positions to become strengthened in the nineties and the decade of 2000.

The development of these points of view of a philosophical-philological character would then result in Capurro's recent production of an “intercultural ethics,” having direct influence from Soraj Hongladarom (2002). This notion brings with it a direct criticism of the “ideal correspondence of reality” model of cognitive thinking criticized by Søren Brier (1996, p. 307) and later Bernd Frohmann's (1992) in the nineties as reading the world from “the Lord's eyes” (Brier, 1996, p. 307).

In the 1980s, as Rafael Capurro was establishing his place in the informational field, director Wim Wenders, on the eve of the fall of Berlin's Wall, was producing his cinematographic work *Der Himmel über Berlin* (translated as “Sky over Berlin,” “Heaven above Berlin,” and, finally, “Wings of Desire”). The 1987 film tells the story of two angels, Damiel and Cassiel who get close to the German urban world, “inquire into” the pain and the will of what is “social-human,” struggle with desire in a city that is under siege by solitude, and are finally taken by the absence of *pathos*, and experience *ethos* in crisis, a rationality crisis.

In the year prior to the premiere of the film, Rafael Capurro published his study on the relationship between hermeneutics and specialized information. Between 1985 and 1986, just before the “angels of Wim Wenders” found their place in the German world, Capurro was busy presenting papers on the concept of information. At that time his work and the preparation of his concepts were already expressed under the influence of a language where hermeneutics *and* pragmatics preceded and informed the Capurrian way of thinking (Capurro, 2010). In Wim Wenders' film, in turn, the movement of the angels (at the beginning, “perceptibly imposing”) and their “fall,” stimulate a mythological background particularly dear to the hermeneutics and the understanding of Capurro's philosophy, then under construction: that mythological background being the relationship between Hestia and Hermes.

This relationship may be interpreted as the dichotomy between permanence and movement and is present in the use of hermeneutics by Capurro in the preparation of his angeletics and later in his “intercultural ethics of information.” Hestia represents the

“principle of permanence,” or the “principle of impulsion,” the quality of coming prior to other things (Vernant, 1990, p. 190). On the one hand, we find “Hestia, interior, enclosure, what is fixed, closeness of the group in itself”; on the other hand, we recognize “Hermes, exterior, openness, movement, contact with others” (Vernant, 1990, p. 155). Hermes, like the “angels that fall,” knows the two “sides”: the world of sensitivity” and the “world of intelligence.”

In the Judeo-Christian tradition, a “fallen angel” becomes a demon—from Latin *daemon*, and Greek *daimon*, a word meaning neither evil nor good, inferior to a god, but superior to a man. In Greek philosophy, Socrates’s demon, for example, was a genius who acted as an inspiration and a counsellor. In the Christian religion, the “demon” is considered an evil angel, as is the Devil himself, interpreted as the active principle of evil (Japiassu & Marcondes, 2001, p. 50). Traditionally, demons were angels, who, as intermediate entities between God and Man, after the war in heaven, set themselves apart from the divine plan and yielded to sin. This fall, in the tradition of the Bible, is related to Adam’s loss of metaphysical language: his “fall” would represent the absence of the capacity for naming the essence of things.

Hermes is not an angel, but he behaves as one. He remains in the company of gods and men, and dialogues with heaven and earth. Philosophically, the concept of “demon” takes on distinct meanings. One meaning relates to an idea of a “divine being” to whom a certain function of mediation is reserved. The concept of mediation is has a fundamental place within IS epistemology. In Plato, divinities called “demoniac” would have been created by the Demiurge, or organizer of matter. From a neoplatonic point of view, it expresses negativity—the angel-demon. “Eudemonism” is any doctrine which assumes happiness as the principle and foundation of a moral life (Abbagnano, 2007). As Ferrater Mora indicates (1978, p. 109), it is about a set of “ethics of happiness,” which makes someone “happy” using different approaches, like welfare, meditation or pleasure.

A number of critically important notions can be found among the above relationships that serve to prepare IS epistemology and a philosophy of information, beginning in the early 1980s. They prepare the way for the development of an “intercultural ethics” through Rafael Capurro and his epistemological positioning of informational studies as rhetoric, whereby a new ethical model emerges, as well as a vision of the place of a hermeneutical paradigm and a social paradigm in the informational field at that period. They also call for a philosophical analysis based in a relationship between language, culture and knowledge.

2 Hermes, Message and Ethics: Culture and Happiness in the Course of Hermeneutics

Nowadays German soul can only be conquered and governed
by someone who presents to each small statesman the password.
(*Wings of Desire*, 1987)

In the initial dialogues between the angels Daniel and Cassiel, the reflexive issue is in the hidden relation between permanence and movement, or, still, between Hestia and Hermes. Daniel, in a long speech, calls Cassiel's attention to mundane pleasures. "I don't want to float forever...I would like to be able to say 'now' ... and not anymore forever, eternally... run a temperature, black fingers due to the newspaper... lie outrageously...be able to say 'ah,' 'oh,' 'hey,' instead of 'yes' and 'amen'...at least feel what it is like taking off your shoes under the table" (*Wings of Desire*, 1987).

Daniel's words bring Cassiel to a reflection about our destiny in the world, and Cassiel points to objective directions of informational practices as part of this earthly function, "Yes. Be able to get excited with evil... attract all Earth demons and go around the world! Nothing more than looking, joining, witnessing, preserving" (*Wings of Desire*, 1987). Such practices, synthesized under the concept of "information" in IS since the 1960s, would become the focus of Rafael Capurro's studies (2010).

In his thesis, Capurro (2010) focuses on the Greek concept of message, followed by its Latin origin, in order to develop a relationship between "information" in the relationship between "information" in the modern world and its ongoing development as a concept. It is important to notice two central aspects of Capurro's first monograph about the concept of information: a) his concern with language in linguistic as well as philological sense, b) the space-time context, "message" and "information" in his context of formation.

Presented in its subjectivity through Wim Wenders' work, 1980s Germany, appearing in the first scenes, is shown under a dark sky, full of dense clouds, followed by an eye opening and, immediately after, a panoramic view of the city; Berlin is vertically below the observer. The city is grey and inundated by a cacophony of various languages: multiple voices and noises, murmurs of radio, television and readers of books, different vernaculars and worldviews... such images and expressions decode Germany even as Capurro works towards his doctorate in philosophy.

A continuous play with signs is revealed in Capurro's developing thought as exemplified by various statements made by Capurro at the beginning of the 1990s (Capurro, 1992). At the dawn of the 1990s, Capurro, the *philosopher of information*, first proposes that IS is a subdiscipline of rhetoric. The search for ethics in Germany, divided and in crisis, seems to be directly linked to his concern with the concepts of message, culture and information—and, mainly, language. Happiness, distant in "grey" and in "silence," in voices multiplied like the empty monologues of *Wings of Desire*, contrasts with the possibility of a transforming language, of noise that is not a hindrance, but a solution to the evils of the Wall.

"Capurro's Germany," that is, Germany in the 1980s, is revealed by Wim Wenders as a set of borders multiplied to infinity, creating limits to separate and, not, bridges to bring

near. "More than ever," ponders Cassiel, "each street has its dividing line." Therefore, this is a universe in which "Each dweller or owner hangs his name on the door like a shield and analyzes the newspaper as if it were a world leader" (*Wings of Desire*, 1987, s.p.).

The German people got divided into States equivalent to the number of citizens. And these States are mobile. Each one carries his own and demands a toll of whoever wants to enter: a fly confined in amber or a leather purse. This is done only for the border, however, to have access to the inland of these States, a password is needed. The soul of present day Germans can only be conquered and governed by whoever presents the password to each small statesman. Fortunately, nobody can do it at the moment. (*Wings of Desire*, 1987)

This monologue is verbalized by Cassiel at the beginning of a long journey across Berlin by car. Cassiel circles the city, his mind open, free from the bias of "the eyes of the Lord" facing head on Germany's social problems, but even so he remains insensitive" unable to understand the "spirit" of human tribulation. He carries with him a notebook, as if it were essential to maintaining the relationship between thinking and recording—that is, between knowledge and the recording of knowledge and the technology of knowledge records.

The long crossover through a dark and grey Berlin culminates in a kind of metalanguage that becomes fundamental to the comprehension of the role of informational studies and to the position in space-time occupied by Capurro. Cassiel comes across a film set showing Germany during World War II. The imposing Wall, still standing, objectively casts Hitler's traces in every direction. The solution to the impasse, as suggested by the monologue and its symbolic conclusion, narrated in a science of language. The relationship between the above portrait of Germany and Capurro's studies in documentation establishes a foundation to understanding the central tool for Capurrian thinking as rhetoric.

Aristotle divides the art of rhetoric into three models: deliberative, judicial and epidictic. Discourse, which is the object of the rhetor's technique, has three elements: speaker, topic and listener. The aim of discourse always refers to the last one (Aristotle, 2012, pp. 21-22, 1358a-1358b). When deliberating, the elements of counselling and deterrence appear. Aristotle argues that the most important subjects that people discuss consist of five main themes: finances; war and peace; national defense; imports and exports; and legislation. (Aristotle, 2012, pp. 23, 1359a-1359b). At its core, this relationship is between the process of deliberating, what to deliberate upon, and the purpose. Therefore, the relationship is about an encounter between Capurrian informational ethical thinking, divided Germany and the philosophy of information oriented by and towards the philosophy of language. The place of this encounter would also reveal the *locus* of "happiness" in the "era of information."

According to Aristotle,

It is possible to say that each man in particular and everyone together have a purpose in mind, whether in the things they choose to do or the ones they avoid. This purpose is, altogether, happiness and its parts. [...] So, let it be happiness or living well in combination with virtue, or life's auto-sufficiency, or a more pleasant life with safety, with the importance of assets and of bodies besides the ability of keeping and making use of them; as everybody agrees that happiness is one or several of these things. (Aristotle, 2012, pp. 27-28)

In Capurro, the informational epistemology only exists when elaborated from its subdisciplinary character of rhetorical art. The Capurrian argumentation involves an ethics of information that is established with the language—a kind of eudemonism beginning from the language. More specifically, it is about ethics “set” in the “cradle” of a cultural construction: language and its action in the context of the ones that “rhetorically” exist-act. Rafael Capurro finds within a volatile 1980s Germany, Hermes’s struggle against Hestia, a linguistic turning point in philosophy, a philosophy of culture in the socio-historical dilemma and, finally, hermeneutics and its ethics of alterity.

The ethics of alterity, opposed to a transcendental ethics, or “ethics of the Lord’s eyes,” from the Lord’s point of view, or, still, the “ethics of the angels” (incapable of conceiving and knowing the presence and the power of the presence of a certain Wall), now becomes an “intercultural ethics of information,” capable not only of recognizing that the Wall is there, but of looking for ways of “knocking it down”—if not physically, in its symbolic structure, presenting new possibilities for multiple worlds that exist in each culture. In this context *poiesis* presents itself: the maker of discourses, the poet, “expelled” from the city in a platonic transcendental ethics, and brought back into the scene by rhetoric and by Aristotelian poetics. Homer, the city’s poet, is revealed then through the German library thinking the world through words.

In order to understand the role of rhetoric in the “states of moral crisis” of civilizations in Wim Wenders’ work, we need to see that the film’s character Homer is the double of the classical world’s Homer. It is a return to origins starting from language and the search for new solutions which also begin with language. Cassiel meets Homer at the library (Staatsbibliothek, Berlin’s public library) first observing war photographs, and afterwards among Earth globes, questioning himself about the dilemmas of a divided Germany. The angel, in the succeeding sequences, follows Homer through a Berlin in crisis, a walk that ends in a metaphor of the aporia of language and of the existence in the decade of the eighties, the Wall.

Just like Hermes, the messenger, Homer closely observes divided Germany in thousands of closed consciences and asks himself what the city’s destination is. In his search he tries to find the sort of language which sings the glory of peaceableness. “However, to this day, nobody succeeded in singing an epic poem on peace. What happens to peace if its inspiration does not last and it almost does not allow itself to be narrated? Should I give up... if humanity loses its storyteller...” (*Wings of Desire*, 1987, s.p.). The hymn desired by Homer is, fundamentally, a song of change, an opening—the search for a “demon” against the shadows of evil in the German past. Here is the meeting with Hermes and with future hermeneutics.

Hermes represents, in the human context of space-time, the passage, the changes of state, the contacts and the links among elements of otherness (Vernant, 1990, p. 153). Hermes is represented in Ancient Greece at every front door, at the entrance of cities, in borders and crossroads, as well as along pathways, marking the routes, and on tombs marking access through portals to the infernal world. Where there is discussion (as in the *agora* and in commerce) there you find Hermes. Hermes is the “witness of agreements, truces,

oaths between opposing parties” and “serves as herald, messenger, ambassador abroad” (Vernant, 1990, pp. 153-154).

Hermeneutics finds its primitive soil in the interpretation of Hermes. Just like Reboul reminds us (2004), rhetoric has three structural lines: the pedagogical line, the heuristic line and, finally, the hermeneutical line. The heuristic one relates to discourse as discovery of others. The pedagogical line is about the art of the invention of how to teach. Last of all, the hermeneutical line—recognized by Reboul (2004) as a fundamental law of rhetoric, emphasizes the certainty that the orator is never alone—he expresses himself in agreement or in opposition to other speakers, always in relation to other speeches.

The notion of hermeneutics—from the Greek term *hermeneutikós*, means objectively “to interpret.” In philosophical terms, it was originally applied in theological discourses, designating the kind of methodology appropriate to be used in the interpretation of the Bible. (Japiassu & Marcondes, 2001, p. 93). However, in Ferrater Mora’s (1978) view, the original philosophical meaning of hermeneutics concerns the expression of thinking, which places hermeneutics in definitive closeness with the elaboration of the rhetorical art. Later on, the term would encompass every effort of scientific interpretation of a difficult text requiring an explanation. Between the 19th and the 20th centuries, the term “hermeneutics” evolves in meaning to encompass also the interpretation of different forms of culture, in the course of history, not only as someone’s experience, but also as a philosophical reflection that interprets symbols and myths in general (Japiassu & Marcondes, 2001, p. 93).

In mythology, Hermes indicates the incarnation of messenger and operates in categories of instability and openness, of contact with otherness, of link and mediator. In philosophy, such dimensions appear in different hues, through philosophers who dedicate themselves to thinking in terms of hermeneutics. Hegel explained the objective relation between language, work and interaction. Under his influence, Dilthey conceived the notion of historical consciousness. In turn, Heidegger indicates the relationship between the *Dasein* and the philosophical expression being-there in language (with one another). Constructing a more solid formulation to hermeneutics, Gadamer focused on the relationship between being and representing oneself, which became a central basis for the construction of Rafael Capurro’s thinking, that is, his interpretation of the epistemology of IS through hermeneutics. Gadamer’s (1999) own reflection on these hermeneutic questions is guided by the idea that language presents itself as the center of where “I” and the “world” unite.

In the above sense, the task of hermeneutics is oriented through questioning based on a given discursive object. “The hermeneutic task transforms itself in questioning based on the thing, and already finds itself always determined by this questioning. [...] Whoever wants to understand a text, is determined, at first, to let it say something by itself.” A certain “consciousness formed hermeneutically has to show itself receptive, from the beginning, to the alterity of the text” (Gadamer, 1999, p. 405). Therefore, “the art of understanding is, first of all, the art of listening” (Gadamer, 2007a, p. 59).

The concept of language in Gadamer is, therefore, one that establishes the kind of hermeneutics. “Language is sharing, participation, a possibility of taking part ..., in which someone is not opposed to a world of objects (a world in which language would

remain tangled in pseudo-platonic *aporia* relative to *methexis*) [“participation” in Greek] (Gadamer, 2007b, p. 39). His Heideggerian resumption complements the relationship between language and world. “All of it is certainly worth the fulfillment of life practice. This does not have to happen in words. Besides, this sort of one-with-the-other that constitutes our ‘being-in-the world’ begins much earlier than our growth in the midst of our mother tongue [...]” (Gadamer, 2007b, p. 39).

Such a view of the relationship between language and world, brought to bare on the studies of information, allowed Rafael Capurro to establish the role of language in the historical constitution of IS. Having recognized the course of the relationship between philology, rhetoric and bibliology, united and systematized in Gabriel Peignot (1802) and Paul Otlet (1934), a reflection on the practices of knowledge organization gains historical and fertile soil for the solution of problems in the years 1980 and 1990. According to Capurro (2000), for Heidegger, modern technology has two faces: *techne* which is part of *poiesis*, that is, of a production project; and *Ge-Stell* which is part of the exposure that produces something related to the openness of the world, but at the same time crystallizes itself in an instrumental structure. This “instrumental” is “good,” in Heidegger’s view, as long as it does not become a unilateral view. In this sense, from a Capurrian point of view, the “process of technology of information at the end of the modern times culminates in the creation of a *Ge-Stell of information*” (Capurro, 2000, p.7).

“The” *Gestell* (in a “pure” Heideggerian sense) would be the “essence” of modern technique. In German, the term relates to a device like a pedestal or an easel, or simply a shelf. In other words, it is about a frame, or skeleton, or some sort of “structure.” *Ge* is related to “together” and the verb *stellen* indicates “put it up.” The union of the terms suggests the notion of “totality of technical placement.” Interpretations of this Heideggerian conceptualization may lead to a view of technique as power machines (human) or, a priori, the identification of technical rationality in the beings themselves (Abbagnano, 2007).

Such “*Ge-Stell of information*” may also be taken as an opportunity of modernity to meet with what Capurro (2000) considered “hidden dimensions of language.” Therefore, *Ge-Stell of information* may be transformed in a potential polyphonic voice of human language, “if and only if it is interrelated with the whole set of its hidden possibilities. If it is not this way, then we will only have a society of information (information society)” (Capurro, 2000, p. 8).

The problem of the clash between what is univocal and polyphony in language in the context of a *Ge-Stell of information* is envisaged by Capurro, in the “so-called” society of information, and in “science” itself asserted as “of information.” His education as a documentalist and researcher shows the difficulty of organization and focus in philosophical studies that would take into consideration technical and moral dilemmas of the so-called society “of information.” In 1980, Capurro entered the School of Library Science at Stuttgart (Fachhochschule für Bibliothekswesen—FHB), soon to become the School of Library Science and Information (Hochschule für Bibliotheks-und Informationswesen—HBI) and, afterwards, the University of Media (Hochschule der Medien—HdM). In the HdM,

according to Capurro (2000), the interest in documentation was at the lowest possible ebb, introduced only as a marginal area of reflection in the study of public libraries.

Between the search for a *Ge-Stell* for the “society of information” and a science for information, the “ethics of information” was in a state of argumentative emptiness. The long autobiographical citation which follows proves the emergence of the dilemmas of an “ethics” of information in the bulge of the epistemological crisis in the area of information studies itself.

The development of the science of information in Germany was not that successful. One reason was the federal structure of the German cultural policy which did not allow the systematic creation of university cathedras in this field despite political interest in documentation since 1974. Another reason was the lack of connection among Library Science, Science of Information and Computer Science different from “Library and Information Science” (LIS) in the United States. The few colleagues dedicated to the science of information came from diverse branches of knowledge like philosophy, sociology, journalism or linguistics, so the young discipline did not have a clearly defined profile ahead of information retrieval. (Capurro, 2010, p. 258)

In Germany, where Capurro first presents the concept of an “ethics of information,” the angels Damiel and Cassiel walk around the city “rendered impossible” by an essentialist philosophy—they find a pregnant woman in an ambulance going to the hospital, a painter in search of inspiration, a man suffering a breakup with his girlfriend. On the one hand, Cassiel tries to understand the difficulty of an unstable world. On the other, Damiel wants to throw himself into a world of perennial sensitivity and its material aspects: he falls in love with a trapeze artist, who, ironically, while looking for a way out of the “sadness” of a divided Berlin, dreams eternity as a synonym of happiness. It is in this context that I believe Capurro tries to compose his ethics of-and-for information between the possibilities and the risks of forming an informational *Ge-Stell*. Such an ethics happens in the clash with the social context of a world still “closed” between the “this or that” of the Berlin Wall. This ethical model also represents the difficulties of science which aims to outline the definition of information—a crisis in the face of its multiple disciplines, its multiple names, its multiple tendencies, and, finally, in its difficulties of formalization.

Capurrian ethics is established both in the sense of conceiving a place for the becoming of thinking in the contemporary world and the “place” of the *epistemological becoming* of a science for information. Society and epistemology are objectively joined here. Yet, Capurrian ethics is about an ethics of the South American Capurro in German society and the troubled development of documentation in that country. We are now approaching *angeletics*. We are close to the intercultural ethics of information.

3 The “Falling Angels of Rafael Capurro”: Angeletics and the Philosophy of Information as “Hagiography of What is Symbolic”

We return to the story of Daniel and Cassiel. There are only a few months remaining before the fall of Berlin’s Wall. While Daniel renders himself to *pathos* in a fragmented Germany, Capurro pursues, beginning with what he calls angeletics, a science of messages and messengers, which considers the phenomenon of building messages as well as the context of the action/sharing of messages (Smith, 2000). His interest, according to Smith (2000), would be in finding a unified means of understanding the role of information in the heart of human life and global society. It is about the trial of the search for a unified definition in order to clarify the basis of the concept of information itself.

Having had a philosophical education with phenomenological roots (with Husserl and Heidegger) and hermeneutic roots (starting from Gadamer), Capurro (2010) tried to break the dualism between his philosophical reflection and the technical and professional fields of information and computation, as well as the representational approach, bringing philosophy to bear on technology. This impetus would take him to the writing of his doctorate and post-doctorate theses beginning in 1986, when he started working at the School of Library Science at Stuttgart. Trying to overcome such a dualism also leads Capurro (1988, 2008) into proposing a theory of message. This theory relates a view that perceives a “society of information” as a “society of messages,” a society that evolves technically and culturally. “Information” is taken as a message that makes a difference, whether in its form, or as a kind of sense of something being offered. From Capurro’s point of view, this theory refers not only to the Greek-Latin notion of information but to the modern communicative perspective as well. Specifically, under Hermes’s metaphoric influence and that of the “fallen angels,” angeletics searches, using language, for the possibility of thinking about the “mediator among men,” the actor who proposes solutions to the dilemmas of the world, starting from reflection and informational praxis.

Capurro tries to demonstrate that we can think of “forms” as not only information but as messages also. Capurro’s work is an invitation to investigate and imagine models and rules of functioning of present and future societies, societies defined by information and knowledge, supported by message exchanges that are each day more complex—in particular, digital messages. In Smith’s view (2000), angeletics is the result of Capurro’s concern with the destination of the epistemology of IS. Issues of historical, linguistic and philosophical roots that provide crucial elements to the study of information become central units of analysis. Entering the arena of culture, Capurro would then hint at other problems, such as the relationship between message and messenger and the practices of creating, retrieving, assessing, and using messages.

With the crucial role of message transmission in human life and its preservation now recognized and exemplified by Capurro, angeletics opens itself to public and social perspectives. The result is a critical theory later unfolded into an intercultural ethics eager to know who the messengers are, how they are chosen, what roles they represent, what determines shape and content of messages, who receives the messages, who is left out. As

transversal-political knowledge, angeletics would prove to have an influence in different contexts, for instance, as noted by Smith (2000), an angeletics of American studies, of environmental studies, of medical, historical, or medieval studies, and so forth.

Therefore, angeletics, under the structures of hermeneutics and the philosophy of language, is a way of becoming in a world distinct from other worlds in the constitution of an ethics of-and-for information. Angeletics explores “I,” the “world,” and the “other” (including the emergent “digital world” and its subjects) in terms of cultural approaches that rebuild social life and the historical dilemmas of specific communities. In other words, angeletics is concerned with the intricacies of the evolution and interchange, of the exchanges of those who produce and use messages.

Hagiography, a branch of learning that describes the life of saints in Christian culture and other religious traditions, is an appropriate way to elaborate an ethical model. The Capurrian philosophy seems to suggest the practical description of the symbolic “spirit” of reality production under the influence of language. More than that, it necessarily prescribes a way for those who would define “ethics” from an “intercultural perspective,” allowing them not only the task of thinking about information, but also paving the way for information professionals, individuals who produce and become owners of information and, finally, philosophers of information, such as Capurro.

The life of such an individual is the life of one who faces the ethical-informational challenges of a dichotomous reality, divided, therefore, between First World and Third World, between East and West, and who proposes the search for a transversal-ethical construction between such poles. Capurro’s “falls” are still directly involved with the “spirit” of epistemology and of the documentalists’ practices, that is, dichotomies-aporias of the informational field itself—moving, like Hermes and the “fallen angels,” towards a hagiographic and anti-transcendental course. The metaphor of the “fallen angels” in Capurro suggests a “fall” from a representational point of view, either based on the mechanistic “Mathematical Theory of Communication,” or based on cognitive theory, in information studies, as suggested (and disclosed) through the philosophical confluence of a South American born philosopher finding his way in a European world.

4 About the “Ethics of Fallen Angels”: Rafael Capurro Abroad

What relates to thinking has its place in rhetoric, because this matter really belongs to the field of this discipline. (Aristotle, Poetics)

In the German world of the 1980s, Daniel, Wim Wenders’ fallen angel can bleed, see colors, feel different smells, get to know different tastes. The film allegory establishes a trial towards overcoming the dichotomies and the dilemmas of Germany in crisis, and it also suggests the fracture and the wounds of “resistance” of a representational philosophy in a world that is challenged by local-cultural dilemmas. What were the perceptions and biases, for instance, in the 1980s, around the manifestation of problems related to immigration

and the presence of people of different origins in a Germany still infused with traces of Nazi xenophobia and the physical-symbolic division of the Wall?

Born in Montevideo, from an Uruguayan family, a descendant of Italians, Basques, and Spaniards, Capurro studied philosophy in Argentina and Chile, before travelling to Germany. Capurro moved to Germany in the 1970s within the framework of a scientific exchange program between West Germany and Argentina. His early roles involved working in the Documentation Department of the *Comision Nacional de Estudios Geo-Heliofisicos* (CNEGH) in Buenos Aires and with the German Center for Documentation in Nuclear Energy (*Zentralstelle für Atomkernenergie-Dokumentation*, ZAED) as well as at the *Lehrinstitut für Dokumentation* (LID) which was the only institution teaching documentation techniques in West Germany at the time.

At the end of the 1970s, the Center for Nuclear Energy Documentation (ZAED) was transformed into a large organization for technical-scientific information called *Fachinformationszentrum* (FIZ) *Energie, Physik Mathematik*, which has been called since 1987 FIZ Karlsruhe. Capurro worked as personal assistant to the scientific director there from 1980 until 1985. FIZ Karlsruhe co-operated closely with the Chemical Abstracts Service (CAS) in the USA as well as with the Japan Science and Technology Corporation (JST). Capurro left FIZ Karlsruhe in 1995 and became professor of information science at the *Fachhochschule für Bibliothekswesen* (Technical School of Librarianship) in Stuttgart (since 2000 *Hochschule der Medien / Stuttgart Media University*). In 1995, as Capurro (2010) himself indicates, the “Internet bomb” exploded, and a philosophy based on, and dedicated to, the communicational aspects of human life became practically naturalizable.

“Intercultural information ethics” seeks a relationship with the impacts of the language technologies of the social world. The main topics of Capurro’s ethical model would manifest in terms of intellectual property, privacy, safety, information overload, digital exclusion, gender discrimination and censorship. Such topics should not be explored only in terms of the search for rights and universal principles. In Capurrian ethics, one has to observe cultural and historical differences; geographic peculiarities; theoretical fundamentals; and, finally, practical options (Capurro, 2009).

An example of the above may be recognized in the concept of privacy between Western thinking and the Buddhist perspective, where the philosopher demonstrates how an intercultural approach demands distinct ethics. As Capurro summons Soraj Hongladarom, he demonstrates how the idea of privacy in Buddhism is related to values not dependent on the individual, oriented instead towards the world of human group-oriented relationships; while in Western philosophy, values of privacy exist in terms of autonomy—where the point of view of the individual I, distinct from the group, takes priority (Capurro, 2009).

Therefore, a certain intercultural dialogue becomes necessary to build ethics in the 21st century, as well as a search for understanding and, especially, for promoting (and not effacing) cultural diversity. Such a search would allow for an understanding of digital cultures as a possible catalyst towards the expansion of human freedoms and creativity, and not, its reduction (Capurro, 2009). This ethical model does not conceive a point of view apart from socio-historical practices. Like Hermes and Wim Wenders’ “falling angels,”

and like the Heidegger-Gadamerian hermeneutic perspective, ethical problems can only be solved from an informational point of view.

The film *Wings of Desire* has become an extremely important document for its time to help understand the dilemmas of Germany and the historical developments of the Cold War and the post-Cold War era. The film records of the Berlin Wall show rare footage, a lot of which does not exist anymore, having disappeared after the fall. Symbolically, this fact underpins the need to look at language in unique ways and, in terms of its relationship to IS epistemology, it symbolizes a turning point in the mechanistic and cognitive perspectives of understanding information. The old civilizing project of “informational welfare,” present in Peignot (1802) and Otlet (1934), understood as the development of technical infrastructures of language and of a historical conscience of utopic characteristics about the relationship between knowledge, records of knowledge and processing tools of such records, attains greater dynamics and capillarity in the 1990s with the development of the internet in a *web*.

From an economic point of view, *capitalismo*, and more precisely, neo-liberalism, presents itself as “winner.” The fact introduces a challenge, a society called “of information.” We have here informational means of production concentrated in centralized dominions, hidden by the false harmony of potentially symbolic manoeuvres of communication in the network. Here, the ethical clash happens frontally in the area of language: on one hand, the inaugural possibility of expression is perceived—a cry—of local cultures with a universal diffusion channel; on the other hand, the use of horizontality when constructing vertical discourses, with rapid processes of acculturation, particularly those resulting from the supremacy of the “Anglophone digital democracy.”

The fall of Berlin’s Wall suggested the decadence of a kind of “dialectics of aporia,” the dichotomic construction of “this or that,” the flap between Modernity’s “Cartesian rationalism” and something that would follow “post” (afterwards), based, for example, in a criticism of arbitrary divisions of thinking and society done by Jürgen Habermas, another very important philosopher in language appropriation. Just like the Angels’ “fall” and Hermes’s inter-mundane action, both point to a contact with the sensory world (colors, smells, tastes), the fall of Berlin’s Wall opened the gap towards overcoming the one and only “cognitive rationality.”

5 Final Remarks: What Demons Move us in the World of Information?

The general purpose of Angeletics would be the whole scope of Applied Ethics which is in the general scope of the Ethics of Information, or, in other words, everything related to message transmission.
(Smith, 2000)

A central issue in this study, based on the dialogue between language and the foundation of informational studies, was to understand how Capurrian ethics was formed in the scope of the epistemological elaboration of the field. In IS epistemology, for Capurro (1992, 2003), the 1980s was a time of “disenchantment” with physicalism and with individualistic-cognitive approaches, as well as the elaboration of criticism to the info-imperative mode. A “hermeneutic” paradigm, or “social” or, still, “pragmatistic,” centered in language as usage, would set the stage. At the beginning of the succeeding decade following the fall of Berlin’s Wall, Capurro (1992) announces: IS is a subdiscipline of rhetoric.

Since the beginning of the 1970s Capurro has crossed Latin America and arrived in Germany. In his role as a documentalist working for FIZ Karlsruhe he established relations with scholars in the United States, Japan and China. In this sense, information science is a cutback, a transversal *episteme*, a diagonal between opposite worlds. Capurro’s life and thinking, united in the documentalist’s becoming, sets the tone for a “philosophy of information” influenced by intercultural ways of being.

Just like “post-war Greece” which saw the birth of sophistic argumentation as the art of judicial argumentation (besides its other attributions), the fall of Berlin’s Wall inspires a new look at the force of language: knowing how to carry on a conversation is necessary in order to avoid war. The “fall” of the Cold War demands a new sophistic approach, a certain “international sophistic approach.” In this context, a given “ethics of information” appears, established as an “intercultural ethics” in Rafael Capurro. This Capurrian ethics calls attention to the limits of a philosophy of information, (re-) formulating the classical philosophical issues, such as goodness, happiness, and knowledge, under the biased world taken by language and by language technologies.

Thinking about the questions of the ethical dilemma that intercultural ways present, we leave some questions open-ended: to whom will the right be reserved (and how reserved will such a right be) of not belonging in the bubble of a digital ontology? What are the risks of an “informational humanism” via the logic of utopian mechanicalness that are behind the project of digital networks? What “demons” move us? After all, what is happiness in a world said to be informational?

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IV

Historic and Semiotic Themes

General Intellect, Communication and Contemporary Media Theory

Bernd Frohmann

Abstract

The rich conceptual space opened by Rafael Capurro's research on the ethical dimensions of communication and message theory has inspired this investigation of Paolo Virno's concept of general intellect. Virno analyses how contemporary *topoi* function as conditions of the possibility of thought and language, whereas Aristotle analyses them as modes of argument. The contrasts between the two exposes problems with Virno's conceptions of political possibilities of abstract human capacities of language and thought. I torque Virno's use of *topoi* by imposing what I call "Virno-Aristotle variations" on the contemporary roles of two kinds of *topoi*, to suggest a political role for them quite different from Virno's scheme, and present a more plausible scenario of their actual political entanglements. His ideas are also tested by provocations from contemporary media theory: Friedrich Kittler's argument that the essence of the human has escaped into apparatuses, Claude Shannon's theory of communication, Noam Chomsky's conception of grammar, and Jacques Lacan's notion of the symbolic as the world of the machine. I conclude with a brief glance at John Durham Peters' insistence on the great variety of conceptions of communication, which I suggest generates a corresponding variety of connections between communication and politics, thereby destabilizing or at least complicating not just Virno's but any notion of privileged connections between a pure potential of human communication and an ethics and politics of freedom.

In *Speaking into the Air*, John Durham Peters writes that he uses "communication theory" to refer to "a vision of the human condition as in some fundamental way communicative, as anchored in the *logos*," and therefore "consubstantial with ethics, political philosophy, and social theory in its concern for relations between self and other, self and self, and closeness and distance in social organization" (Peters, 1999, p. 10). His statement could serve as a fitting description of the central concerns of Rafael Capurro's extensive body of work on the ethical and political dimensions of communication and message theory. This paper's concerns are located in a similar conceptual space, especially with respect to the

relationship between the human capacity of communicative rationality and both moral and political praxis. Even without the support of philosophical argumentation such as, for example, Jürgen Habermas's *Communication and the Evolution of Society* (1979), where he projects a direct, logical line from consensual norms of successful, rational communication to legal guarantees of universal, democratic principles of equality and equal access to a common public sphere, it is intuitively difficult to imagine an ethics of concern for and engagement with others, much less political action directed towards the development of a free, egalitarian and just society, that fails to invoke principles of rational communication.

This paper presents some skeptical responses to Paolo Virno's version of relationships between political possibilities and the abstract human capacity of communication, which he develops in *A Grammar of the Multitude* (2004). His work is useful for at least three reasons. First, his argument is an interesting exemplar of a type, one which purports to locate ethical and political potentials in fundamental structures of communicative rationality. Second, his view of general intellect as poised between two political possibilities addresses our contemporary situation: either capture by commodity capitalism, or escape from it to create democratic forms of social organization. Third, the failure of his conception of general intellect to acknowledge that every mode of communication, from the human vocal system to contemporary digital apparatuses, is mediated by a channel exposes his conception to media-theoretic provocations that threaten to uncouple special connections between the fortunes of democratic politics and the human capacity of speech, language, and intersubjective communication. The examples I've chosen from contemporary media theory could be expanded, as could what might be said about them; what I offer here is more like a preliminary sketch than a finished picture. I first present Virno's concept of general intellect through a contrast between his and Aristotle's conceptions of *topoi*; second, I ask how Virno conceives contemporary possibilities of political action; third, I torque Virno's use of *topoi* by imposing what I call "Virno-Aristotle variations" on contemporary roles of two kinds of *topoi*, to suggest a political role for them quite different from Virno's scene, and, I hope, to stage a more plausible scenario of their actual political entanglements. I conclude with a brief glance at John Durham Peters' insistence on the great variety of conceptions of communication, which I suggest generates a corresponding variety of connections between communication and politics.

Virno and Aristotle on *topoi*

Virno explains general intellect by reference to an Aristotelian distinction between special and common "places, or two types of *topoi* (sources or kinds of rhetorical arguments) that appear in the *Rhetoric* and *Topics* (2004, pp. 35–37). The contrast between Virno's and Aristotle's conceptions help us understand relationships between Virno's concepts of general intellect, communication and possibilities of political action.

Virno writes that Aristotle's "common places," or *topoi koinoi*, "are the most generally valid logical and linguistic forms of all our discourse ... they allow for the existence of

every individual expression we use and they give structure to these expressions" (p. 35). But Aristotle's *topoi koinoi* are narrower in scope. They are one of two main kinds of Enthymemes, or "what has the function of a proof or demonstration in the domain of public speech" (Rapp, 2012). Aristotle says they are "the regular or universal Lines of Argument ... that is to say those lines of argument that apply equally to questions of right conduct, natural science, politics, and many other things that have nothing to do with one another. ... On this line of argument it is equally easy to base a syllogism or Enthymeme about any of what are nevertheless essentially disconnected subjects—right conduct, natural science, or anything else whatever" (McKeon, 1941, pp. Rhetoric, Bk. I, Ch. 2, 1358a, 10–15). What Aristotle regards as a general pattern of argument, Virno regards as conditions of possibility of discourse itself. He sees "common places" as "categories" that, "like every true skeletal structure, never appear as such. They are the woof of the 'life of the mind,' but they are an *inconspicuous* woof" (p. 36). But for Aristotle, they are not only overt and explicit but must be so to be available to orators who use them in public speech to persuade audiences.

Of "special places," or *topoi idioi*, Virno remarks they "are ways of saying something—metaphors, witticisms, allocutions, etc.—which are appropriate in one or another sphere of associated life ... at a local political party headquarters, or in church, or in a university classroom, or among sports fans of a certain team" (p. 36). Here is what Aristotle writes of "special places": "But there are also those special Lines of Argument which are based on propositions as apply only to particular groups or classes of things. Thus there are propositions about natural science on which it is impossible to base any Enthymeme or syllogism about ethics, and other propositions about ethics on which nothing can be based about natural science" (McKeon, 1941, pp. Rhetoric, Bk. I, Ch. 2, 1358a, 15–20).

In our time, Virno claims, a transformation has taken place. He tells us very little about how it came about, beyond claiming that although highly specific and richly varied religious, ethnic, and local cultures of "special places" continue to exist, "none of them," he writes, "are sufficiently characterized ... as to be able to offer us ... a standard of orientation, a trustworthy compass, a unity of specific customs, of specific ways of saying [or] thinking things" (p. 36). As a consequence, universal categories of human thought and language—Virno's version of "common places"—replace these "special places," thereby providing us "a standard of orientation, and thus, some sort of refuge from the direction in which the world is going today" (p. 37), a direction he describes in terms of a feeling of being a stranger, or not-being-at-home. The heretofore inconspicuous "common places" have become public: "They appear on the surface, like a toolbox containing things which are immediately useful." Summarizing his argument, Virno writes: "Let me repeat, and I must insist upon this: the movement to the forefront on the part of the intellect as such, the fact that the most general and abstract linguistic structures are becoming instruments for orienting one's own conduct—this situation, in my opinion, is one of the conditions which define the contemporary multitude" (p. 37).

In his time, Aristotle observed that "[m]ost Enthymemes are in fact based upon ... particular or special Lines of Argument; comparatively few on the common or general kind" (McKeon, 1941, pp. Rhetoric, Bk. I, Ch. 2, 1358a, 25). He argues that "the better the

selection one makes of propositions suitable for special lines of argument, the nearer one comes to setting up a science that is distinct from dialectic and rhetoric ... [a] science to which the principles thus discovered belong" (McKeon, 1941, pp. Rhetoric, Bk. I, Ch. 2, 1358a, 20–25). Thus for him, the deployment of "special places" leads away from rhetoric to enduring science, a movement quite different from Virno's trajectory of the dissolution and perishing of those specific ways of speaking and thinking that belong to local political party headquarters, churches, university classrooms, and football clubs.

These contrasts between Virno's and Aristotle's conceptions of *topoi* bring Virno's idea of general intellect into sharper focus. He is interested in basic, skeletal structures of human thought and discourse, or as he puts it, in "generic logical-linguistic forms which establish the pattern for all human discourse" (p. 36). Aristotle wants to improve the art of rhetoric by grounding it in deductive patterns of argument. Virno's program is thoroughly modernist; he is interested in the conditions of the possibility of thought and language, whereas Aristotle seeks to bring syllogism into the art of persuasion.

General Intellect and Political Action

We can think of Virno's general intellect as standing in relation to Marx's concept of general intellect, as he presented it in his famous "fragment on machines," as Aristotle's common places stand to special places. Just as Aristotle's common places abstract from the specific content of special places, so does Virno's general intellect abstract from a specific expression of intellect—scientific knowledge—which Marx said was "cast in iron" in a system of machines. With regard to language, Virno's general intellect is "the pure faculty of language, the simple fact of having-a-language." With regard to thought, it "should not necessarily mean the aggregate of the knowledge acquired by the species, but the faculty of thinking." Most generally put, it is "potential as such, not its countless realizations." Lest we've missed the point, he gnominically explains: "The 'general intellect' is nothing but the intellect in general" (p. 66).

Communication links Virno's general intellect to political action. "The *general intellect*," he writes, "manifests itself today, above all, as the communication, abstraction, self-reflection of living subjects." It unfolds "in communicative interaction, under the guise of epistemic paradigms, dialogical *performances*, linguistic games. In other words, public intellect is one and the same as cooperation, the acting in concert of human labour, the communicative competence of individuals" (p. 65). The political manifestation of the pure potential of the faculties of thought, language and communication that together comprise general intellect takes the form of public cooperation and communal interaction. Virno's insistence that the possibilities of political action today arise from a situation in which universal categories of logic and language guide conduct sometimes reads as a triumph of enlightenment rationality, especially because its universal form implies a publicness shared by all people, a "commons" of humans *as such*, undifferentiated by conduct and discourse specific to "special places."

But the pure potential of general intellect, although a condition of the possibility of a communal politics, is not a sufficient condition for its realization. Virno observes that the “*general intellect* manifests itself, today, as a perpetuation of wage labour, as a hierarchical system, as a pillar of the production of surplus-value” (p. 66). “The inclusion of the very *anthropogenesis* in the existing mode of production,” he says, is an extreme event” (p. 63). When the “taste for action, the capacity to face the possible and the unforeseen, the capacity to communicate something new” are surrendered to production, the “typical publicness” of the general intellect is “inhibited and distorted” (p. 67). “Nobody,” he writes, “is as poor as those who see their own relation to the presence of others, that is to say, their own communicative faculty, their own possession of a language, reduced to wage labour” (p. 63). The virtuosity of general intellect, which is simply the exercise of communicative cooperation, has been directed to constructing the specific product of the culture industry, which Virno calls the “spectacle.” The “crucial question” of politics, Virno writes, “goes like this: is it possible to split that which today is united, that is, the Intellect (the *general intellect*) and (wage) Labour, to unite that which today is divided, that is, Intellect and Political Action?” (p. 68). “How,” he asks, “do we conceive, in principle, of political action based on the *general intellect*?” (p. 69). Readily admitting that at this time he can offer little more than mere “allusions to what the true *political*, and not *servile*, virtuosity of the multitude could be,” Virno gestures towards an undefined politics of civil disobedience, “exit,” and “defection” (pp. 69–71). Because the possibility of effective, transformative political action rests upon cooperation and communion grounded in the pure potential of a general and fundamental faculty of human communication—in the highly abstract and pure potential of general intellect—Virno is forced to admit that “[a]ll we can do is point to the *logical form* of something that is still lacking a solid empirical experience” (p. 69).

The Virno-Aristotle Variations

Let’s now depart from Virno, who as we saw argues that in our current situation “common places” have replaced “special places.” He locates the possibility of a transformative politics in the pure potential of contemporary “common places,” but its realization depends upon overcoming the capture of general intellect by wage labour and the production of surplus value. I want to ask how both kinds of *topoi*, “common” and “special,” can be steered to the production of surplus value, but by adopting the Aristotelian conception of *topoi* as rhetorical figures of the arts of persuasion rather than, as Virno would have it, the very general conditions of the possibility of thought, reason, and language provided by the only surviving *topoi*: *topoi koinoi*.

Beginning with the “special places” that Virno says have been replaced by “common places,” my question would then be, is skill in swift acquisition and deployment of rapidly-changing local, particular, and specific modes of persuasion—Aristotle’s *topoi idioi*—of any value to capital? We know, I think, that insofar as capital is fated to channel desire into impossible and futile gratification through commodity consumption, it is also fated

to constantly renew this process, which, it could be argued, requires just such skills. If so, might it not be argued that contemporary capital's capture of intellect takes the form of the constant creation, obliteration, and recreation of a multitude of very specific zones of consumption that rely upon a corresponding multiplicity of constantly changing "special places," in Aristotle's sense of highly specific patterns of persuasion? Should this line of argument be plausible, then does the contemporary application of Aristotle's conception of *topoi idioi*, or "special places," not illuminate some, at least, of capital's capture of the very *topoi* that Virno believes to have been replaced by *topoi koinoi*? Is our situation perhaps more like Aristotle's, insofar as deployments of "special places" far outnumber those of "common places"? And does an analogous line of reasoning also apply to the possibility of a multitude of highly fluid, changing, and very specific zones of political action, which also rely on their corresponding, constantly changing "special places," that is, patterns of argument, modes of reasoning, and instruments of persuasion? Here I suggest as an example the "régimes of living" presented by Collier and Lakoff in *Global Assemblages*; they write that to investigate régimes of living is to analyze how ethical problems arise in specific situations, how guides for action are created, how particular forms of reasoning about moral action and the good life operate, and how moral subjects are formed, all in *specific* "configurations of reason, technique, and institutions of collective life" (Collier & Lakoff, 2005, p. 29). And might it not be productive to think of the many examples of resistance, for example, those presented by Nick Dyer-Witheford in *Cyber-Marx* (1999), as successful deployments of patterns of argument and persuasion—the fluid "special places" of resistance?

Turning to *topoi koinoi*, but retaining Aristotle's idea of them as abstract and general instruments of persuasion, we can investigate how such contemporary instruments operate through their abstract and common features, rather than through specific, situated, and local modes of persuasion. Consider, for example, how the modes of persuasion employed by corporations, universities, political parties, and governments blend together, producing a hegemonic discursive template, the "single narrative" so beloved of public relations flacks. As tools of persuasion, such templates are not emanations of a pure potential of reasoning, thinking, and speaking; rather, they are historically situated and quite deliberate constructions, amenable to empirical investigation of their sources, effects, and applications.

The third and final variation consists in adopting Virno's conception of "common places" as the exercise of the pure potential of thought, reason, and language, thus dropping Aristotle's view of them as rhetorical tools. As we saw, Virno is very clear that the possibility of resistance to and escape from capital's capture of general intellect is situated in this pure potential, whose exercise he calls *virtuosity*. Departing radically from the common meaning of "virtuoso" to refer to someone with special knowledge or skill, or who excels in, for example, musicianship or other arts (the word can also be used to refer to a dilettante), Virno says: "Each one of us is, and always has been, a virtuoso, a performing artist, at times mediocre or awkward, but, in any event, a virtuoso" (p. 55). For him, virtuosity does not refer to exceptional qualities of performances of skill or talent, but merely to "*the activity of the speaker*" (emphasis in the original), which is to say, it consists

in the speaker's *competence*, or in the very conditions of the possibility of speaking as such. "Every utterance," Virno says, "is a virtuosic performance." Because it emanates from pure potential, it follows that in speaking we create no object: "Human verbal language ... has its fulfillment in itself and does not produce ... an 'object' independent of the very act of having been uttered. Language is 'without end product'" (p. 55). Its lack of an end product is the foundation of the possibility of escape from capital's capture.

I have suggested that thinking with Aristotelian conceptions of *topoi* leads us to reflect upon the deployment of both "common places" and "special places" in the service of capital. When these patterns of argument and persuasion become capital's assets, they acquire a measure of materiality: they become, to some degree, objects. To explain: in my work on documentation, I have tried to replace the question of what makes this or that thing a document with what I take to be the more fruitful question of how much of a document the thing might be (Paul Otlet started it all in the late 19th and early 20th centuries by recognizing physical things as documents, and in the 1950s Suzanne Briet weighed in by offering her now-famous antelope as a document). Following Bruno Latour's relative ontology, which flows from his idea of articulation as presented in chapter four of *Pandora's Hope* (1999), I coined the neologism "documentality" to designate the degree to which something might be a document (Frohmann, 2009, 2011). Materiality is an important element of this metric; not to be confused with physicality, it refers to the document's mass, inertia, force, and energy. That led to considering an oral performance as a document, which gets us back to oral performances that serve as capital's assets. A direct measure of the force, inertia and energy of a verbal performance as such an asset would be the surplus value it generates. In other words, any exercise of Virno's "virtuosity" may, depending on circumstance, context, and platform of enunciation, but especially in the service of capital, acquire energy, force, and mass; it thereby becomes an object. This is nothing new: the figures of rhetoric of ancient Greece, when performed in political persuasion on appropriate platforms of enunciation, lent mass and energy to those performances; they acquired an inertia that made them difficult to dismiss, negate or ignore, thereby making them more readily accessible to memory and repetition. Janet Yellen's whispering of her latest US Federal Reserve position to her husband George Akerlof via pillow talk does not carry the same weight as when performed at the morning's press conference. Given appropriate arrangements with other elements, as Latour has taught us, something weak can become something strong; it gains reality, it becomes a thing. Cornelia Vismann tells us that in the thirteenth-century chancery of Frederick II, "[d]ocuments issued by the chancery attained force of law only after having been read publicly" (2008, p. 85). One can think too of the work of Milman Parry and Alfred Lord (Lord, 1960) on the Yugoslavian singers of tales: they revealed the bards' techniques of deploying specific formulae to structure their oral performances of epic poetry. To the print-based, literal-minded who fetishize printed or written transcripts, no two of the bards' tales are identical, but because the bards and their audiences used different criteria of identity, they had no difficulty in determining whether one tale was the same as another without basing their judgement on visible differences between written or printed transcripts. The formulae and other structural elements lent a robust documentality

to these performances; they gained an inertia that supported taxonomies and easily fixed them in memory. The point is that utterance can become object, in more ways than one. By Virno's lights, the bards are virtuosos just because they speak, yet their language, like the deployments of "special places" in the service of capital, is not "without end product." Given supportive conditions of arrangements with other elements, "mere" speech becomes an end product. But if performances of Virno's virtuosity can produce end products, then virtuosity—the exercise of the faculty that harbours the pure potential of transformative politics—can produce commodities in the service of capital.

The Kittler Effect

Drawing attention to the materiality of utterance generated by rhetorical techniques, formulaic structures, and patterns of argument and persuasion specific to particular situations reveals speech as a mode of transmission and storage that, I suggest, should be considered in reflections on the political possibilities of general intellect, especially when communication is deemed critical to them. Yet Virno's general intellect does not include media of communication. Communicative, virtuosic performances flow directly from abstract and generic structures of language regardless of the media of communication. He presents a communicative scene where thought, language, and speech are transmitted without transformation or translation; in Latour's terms (see Latour, 2005, pp. 40, 105, 202), they move from sender to receiver via intermediaries, not mediators. But when media enter the picture, questions about their effects are not far behind.

Let's consider Virno's general intellect in the light of Kittler's media theory. A basic idea is that a fundamental shift occurred between the periods he calls "1800" and "1900," when the "alphabetical storage and transmission monopoly" (Winthrop-Young & Wütz, 1999, p. xxvii) was shattered by the separation of the flows of acoustic, optical, and alphabetical data into gramophone, film, and typewriter. In the earlier period, writing was the only medium available to record, transmit and process the serial data flows of sounds and sights. As Kittler put it, "writing functioned as a universal medium ... Whatever else was going on dropped through the filter of letters or ideograms" (Kittler, 1990, pp. 5–6). In reading literature or letters, readers hallucinated the sounds and sights invoked on the handwritten or printed page, including the writer's voices, whether real or fictional. As a "spiritualized oralization of language" and a "transcendental inner voice" (Winthrop-Young & Wütz, 1999, p. xxiv), writing, whether script or print (Kittler claims readers were trained to ignore the differences), was the technological *a priori* of the flowering of the idea of "so-called Man," as Kittler typically styles his reference to the human soul, subject or consciousness. The individual, conscious thinking subject that reproduces the world through mental activity was, for Kittler, the programmed output of the media monopoly enjoyed by the regime of writing.

In the late 19th century, the alphabetical monopoly of storage and transmission was dismantled. The gramophone recorded and transmitted acoustic data that writing could

not, film recorded movement by storing optical data in still-image sequences flowing at a speed the eye could not arrest, and the typewriter's reduction of the flow of language to the machinic production of twenty-six black marks on a blank page crashed the soul-production program of the régime of writing. "Once the technological differentiation of optics, acoustics, and writing exploded Gutenberg's writing monopoly around 1880," writes Kittler, "the fabrication of so-called Man became possible. His essence escapes into apparatuses" (Kittler, 1990, p. 16). This transformation should not be understood as a mere conceptual change. Just as the writing monopoly of 1800 was supported by schooling in silent reading, a postal system that transmitted the effusions of loving souls, a romantic cultural apparatus that bred a multitude of modes of expression of inner life, a cult of creativity centred on the soulful expressions of writers, musicians and many more, so too does the separation of data flows of 1900 produce new interpolations of humans that did not address them as centres of consciousness, soul, or spirit. From around 1890, the social, psychological and physiological sciences fragmented what it meant to be human:

Machines take over functions of the central nervous system, and no longer, as in times past, merely those of muscles. ... When it comes to inventing phonography and cinema, the age-old dreams of humankind are no longer sufficient. The physiology of eyes, ears, and brains have to become objects of scientific research. For mechanized writing to be optimized, one can no longer dream of writing as the expression of individuals or the trace of bodies. The very forms, differences, and frequencies of its letters have to be reduced to formulas. So-called Man is split up into physiology and information technology. (Kittler, 1990, p. 16)

Kittler's media philosophy forces the question of whether a generically human general intellect, such as that envisioned by Virno as the pure potential of thought, reason, and language, was already absent from the scene for over a century, if it ever existed at all. Once Turing machines enter the picture, Virno's most general and generic capacities of human communication—the basic structures of logic and language—are shifted into machines, whose logical manipulations assume the remaining human subject capacities. When Virno's general intellect is more rigorously instantiated in Turing machines than in the human, then the general intellect—that "fundamental core of the 'life of the mind,' the epicenter of that linguistic ... animal which is the human animal" (Virno, 2004, p. 37)—is obliterated. In short: in the era of 1900, general intellect has escaped into the media of gramophone, film, and typewriter; in the era of 2000, it has escaped into the medium of the computer.

Machines

When man's essence escapes into apparatuses, not only do humans become studied, known, and interpolated in terms of machines, but that very knowledge and interpolation become resources for building an environment of affordances for deepening and strengthening the intertwining of humans and machines. Shannon's theory of communication is a good place to begin exploring relationships between Virno's general intellect and manifestations of

the machinic in the human. Shannon proved that the statistical properties of any natural written language can be computed in terms of transition probabilities between its symbols, that is, the probability of any symbol following any other. (An interesting result for English, noted by Weaver in his popular introduction to Shannon's theory (Shannon, 1949, p. 6), is that "the probability is actually zero that an initial *j* be followed by the letters *b, c, d, f, g, j, k, l, q, r, t, v, w, x, or z*"). Transitions such as these are stochastic, Markov processes; they are random, and predictions of their transitions depend only on their current state, not their past history. Shannon's famous source-transmitter-receiver-destination model depicts the operation of a signal-processing machine whose minimal condition of transmission depends on channel capacity and reduction of noise; there is no communication without a channel. Lydia H. Liu argues that Shannon's major achievement, the invention of Printed English—"an ideographical alphabet with a definable statistical structure" (2010, pp. 52–53)—conceives the fundamental idea of the ground zero of communication as a process of machinic transformations of a message. Shannon's "postphonetic alphabet presupposes a symbolic correspondence between the twenty-seven letters [English's familiar 26, plus the space] and their numerical counterpart rather than mapping the letters onto ... phonemic units" (p. 53). Shannon's information-theoretic measure of entropy—"the average number of binary digits required per letter" (p. 59)—holds for any language properly translated into Printed English, thereby turning Printed English into a universal code (p. 60). The transition probabilities of the languages vary, but their fundamental mathematical structure does not.

Now consider English speakers writing down their thoughts (thinking by writing). Insofar as they produce strings of the ideographical symbols of Printed English that constitute words, their writing-down is machinic insofar as the transitions from letter to letter conform to the mathematical structure of a discrete Markov process. Whether using quill pen, typewriter, or computer keyboard, the writers function as machinic writing apparatuses, without any consciousness of the probability distributions governing their writing. Due to the machinic aspect of a writing that is configured by transition probabilities between symbol-strings that generate words of the language, thinking by writing can be the product of a "pure potential" only when that potential belongs to the mathematical structure of the machine generating the language.

John Johnston (2008) tells the story of how Noam Chomsky built upon Shannon's theory to model language as an information-theoretic machine. His problem was, "what sort of grammar is necessary to generate all the sequences of morphemes that constitute grammatical English sentences—and only these" (p. 89). Whereas Shannon's model addressed possible transitions between the letters of Printed English to generate words, Chomsky's model addressed possible transitions between words to generate grammatical sentences. "Each such machine," Chomsky wrote, "thus defines a language" (quoted in Johnston, p. 89). Upon realizing that because these finite-state machines generated finite-state grammars which were not adequate for natural languages such as English, Chomsky developed his more complex phrase-structure and transformational grammars. The important point, however, is that for all Chomsky grammars, from finite-state grammar to transformational grammar, every language is defined by a machine. To "adopt this conception of language,"

Johnston writes, “entails our viewing the speaker as a type of machine, at least as a subject with this type of machine in his or her head, and Chomsky indisputably does” (p. 89). Once again, Virno’s “pure potential” is compromised, from the simplest finite-state machines (or finite-state Markoff processes), to the phrase-structure grammars that include rules for embedding subordinate phrases, and then to transformational grammars that include “rewrite rules” for transforming phrase structures from one type to another. As language-machine production becomes more complex and automata of speaking become more sophisticated, the less pure becomes Virno’s potential of communicating by speaking. Can the speaker’s “virtuosity” be a product of a pure potential when it is the output of the operation of unconscious programs running on systems of information machines?

Information machines also appear in Jacques Lacan’s psychoanalysis. In his study of Seminar II (1954-1955), Johnston writes: “the cybernetic concept of the machine and the digital language of information theory led Lacan to believe that the world of the symbolic is the world of the machine” (2008, p. 67) (The symbolic is one of Lacan’s three psychic registers, the other being the real and the imaginary). Lacan asks a crucial question about this machinic world of the symbolic: what, in this world, constitutes the being of the subject? The subject is neither the source, the fount, the spring, or the origin of the symbolic, because, Lacan says, the “machine is the structure detached from the activity of the subject” (1988, p. 47). Symbolic processes are autonomous; subjectivity is, explains Johnston, a matter of position, of where the subject finds itself in a predetermined structure not of the subject’s making, a matter of position in a circuit radically other than the subject, thus a matter of inserting itself in the “discourse of the other.” This formulaic phrase is unpacked by Liu, who answers her question, “but what does he mean by ‘the Other’?” by observing that “Lacan makes it clear that the Other is the cybernetic machine rather than what we call language” (p. 161). The information machines of the then-new field of cybernetics provided the model of such predetermined, autonomous symbolic structures. In showing “how the symbolic order itself arises and functions as a machine,” Lacan realized that “it is the symbolic order’s encoding of the real in numbers ... which in turn gives rise to a syntax of different combinatorial possibilities. The resulting ‘machine’—it is actually a finite-state automaton—is not created by human beings,” nor does it “require the intervention of human consciousness to function” (Johnston, p. 79). Lacan identifies this symbolic order with the unconscious.

My simplified sketch is meant to show only the kind of challenge Lacan’s conceptions of the subject and the symbolic order present to Virno’s conception of the “pure potential” of the speaking subject. Although Lacan does not identify the symbolic order with natural language (Johnston argues (p. 88) that “Lacan presumably concluded that the workings of the symbolic order could be fully described by the grammar of a finite-state automaton”), his claim that this order, which nevertheless underlies language, is “detached from the activity of the subject” presents complications for Virno’s virtuosic speaking subject similar to those presented by Shannon and Chomsky. Lacan’s challenge goes even deeper insofar as it locates the machinic in the unconscious.

I now want to read Virno's comments on Marx's conception of general intellect as "a scientific objectified capacity, as a system of machines" (Virno, p. 65) in light of conceptions of the machinic in the human. Dyer-Witheford tells us what kinds of machines Marx had in mind: "[t]his objectification of social knowledge [is] crystallized in machinery—'fixed capital'—and in particular in two technologies: automated production and the networks of transport and communication integrating the world market" (2005, p. 141). Virno updates Marx as follows: "We should consider," he writes, "the dimension where the general intellect, instead of being incarnated (or rather, *cast in iron*) into the system of machines, exists as attribute of living labor" (p. 65). But today, when a crucial system of machines is not cast in iron but consists in the logic circuits of Turing machines, and when cybernetics shifts fundamental structures of speech, reason, and the unconscious into the calculating machinery of financial markets, automated warfare, and clever apps that let our devices think for us, what dimension of the human escapes incarnation in contemporary, much less future systems of information machines? For Kittler, the jig was up for humans as early as 1938, when Konrad Zuse invented the conditional jump, or the IF-THEN command: "Computers operating on IF-THEN commands are," Kittler observes, "machinic subjects" (1999, p. 259). If a condition of the possibility of Virno's political subject is freedom from incarnation in systems of machines, then in the contemporary scene of applications of the knowledge of the machinic in the human, what are the chances for the survival of his virtuosic, communicative subject?

Speaking into the Cloud

In his reading of the Hardt and Negri trilogy, *Empire*, *Multitude*, and *Commonwealth*, Dyer-Witheford traced the birth, death, and resurrection of what I'll call the "communication thesis," that is, the claim that communication is necessary for coherent and coordinated political action. In his criticism of *Empire*'s "incommunicado thesis," which addressed the authors' declaration that "communication between global struggle is both impossible and unnecessary," Dyer-Witheford writes: "It is in fact hard to envisage what form a twenty-first-century communism might take *other* than as a distributed but interconnected system of collective communication devoted to solving problems of a material and immaterial resource allocation" (2005, p. 158)—and surely he's right. But what constitutes collective communication, or simply communication *per se*? Dyer-Witheford is well aware of the problem, given his concerns about "differential access to media technologies and skills," and the risks of "elitist forms of 'Cyber-Leninism'" inherent in reliance on the internet and the divisive logic of capital's digital network architectures, which threaten the communion that is the purpose of the communication system of "a revolutionary 'social brain'" (2005, p. 158). Tiziana Terranova, writing from a similar political stance in her *Network Culture: Politics for the Information Age* (2004), warns of the dangers of a contemporary network culture best understood in terms of Shannon's communication theory, where all that matters when meaning and rationality are no longer relevant to forms of interpolation

or address is simply making contact by overcoming noise on the channel, a phenomenon dramatically brought to life in televised political debates when only the loudest candidate's message reaches the audience.

Peters' history of the idea of communication addresses the problem of what communication is from a philosophical and social-theoretical stance which reveals that communication is not a simple, univocal concept, there is a wide range of disparate versions, communication failures are many, deliberate non-communication is often a valid communicative stance, and communicative practices can be exercises of domination (even its very possibility has been questioned; see Chang, 1996). In this concluding section I briefly present just four examples from Peters' history to suggest that the multivocal nature of the concept of communication brings with it a correspondingly multivocal set of disparate connections between communication and politics, thereby destabilizing or at least complicating not just Virno's but any notion of privileged connections between a pure potential of human communication and an ethics and politics of freedom.

Peters' aim in his opening two chapters "is to contrast two *Grundbegriffe* in communication theory, dialogue and dissemination, as they have since taken historically effective shape in European thought" (p. 35). The first is the "tightly coupled dialogue" represented by Socrates, whose notion of interpersonal communication has the following features: (1) "not just the matching of souls, but the coupling of desires" (p. 35); (2) "souls intertwined in reciprocity" (p. 43); (3) "not only a happy mode of message exchange but, at its finest, the mutual salvation of souls in each other's love beneath the blessings of heaven" (p. 45); (4) when the "soul of the speaker and the hearer need to be closely knitted ... the specificity with which expression fits recipient is the criterion of goodness in communication ... It is foolish to indiscriminately scatter words on those who will not know what to do with them" (p. 46). Peters' observation that the Socratic conception of communication is a "glorious and severe ideal" (p. 45) applies not just to interpersonal communication (if we use it as a standard we're bound to be disappointed), but to political communication as well. Is the coupling of desires a realistic political objective? Both we and our political allies have many desires; some of ours they might not have anticipated, much less share or condone. Fitting message to recipient and expecting mutual reciprocity is probably a difficult if not futile project, and contemporary political strategies of transforming political candidates into objects of desire risibly fail. Political communication via social media may promise coupling of desires if not matching of souls, but are often vectors of domination and manipulation far beyond the control that characterized the relation between writers and readers in ancient Greece, when an almost always vocal reading was a matter of yielding "to a distant dominating body," and writing was an exercise of "remote control over a reader's body and voice" (p. 40). And in Socrates's ideal communication, a generalized, universalized, and philosophical kind of love in which "the mortal, singular other is ultimately an unworthy object" (p. 60)—an ideal that sounds the dangers of communicative political action that values universal abstractions over "the other as an irreplaceable creature" (p. 57)—do we not hear echos of Virno's insistence that "special places" have been replaced by "common

places,” thus suggesting a shift from the particular to the universal in the kind of communication he sees as the contemporary foundation of the possibility of politics?

Peters' second *Grundbegriff* is the “loosely coupled dissemination” represented by Jesus (p. 35). It is a “receiver-oriented model in which the sender has no control over the harvest,” and in which “the Word is scattered uniformly, addressed to no one in particular.” Jesus is a sower who scatters seeds knowing few will sprout; he leaves it to his audience to make what it will of the Word. In this communicative scenario there will be a variety of audience interpretations: “the sower celebrates broadcasting as an equitable mode of communication that leaves the harvest of meaning to the will and the capacity of the recipient” (p. 52). Peters suggests the gap between encoding and decoding may be the mark of all communication. He describes dissemination as radically public, thus suspending the reciprocity so central to Socrates, and he finds in it a truer and sounder model of our routine communication with each other than in Socrates's glorious and severe ideal. Jesus spoke in parables, which are good disseminators because they “are marked by uniformity in transmission and diversity in reception”; they work well “when the distance between speaker and listener is great,” “the audience bears the interpretive burden,” and the meaning of the parable “is quite literally the audience's problem.” Peters' quotation from Kierkegaard says that the “point of such ‘indirect communication ... lies in making the recipient self-reliant’” (p. 52). A mode of communication uncoupled from machinery of control of “the diversity of audience interpretations in settings that lack direct interaction” provides no guarantees of solidarity. Making recipients self-reliant might have political value, but those who have ears to hear often include quite self-reliant political opponents. But the lack of guarantees is not fatal; Peters notes that “there is nothing ethically deficient about broadcasting as a one-way flow,” nor “are the gaps between sender and receiver always chasms to be bridged; they are sometimes vistas to be appreciated or distances to be respected” (p. 59), and often the “dream of communication has too little respect for personal inaccessibility” (p. 59). At best, he says, “communication is a dance of differences, not a junction of spirits” (p. 65).

Much contemporary political communication takes the form of frustrated dissemination when the sender's efforts to control reception fail. In this case, communication approaches Kafka's conception of communication “as two monologues that may never connect” (Peters, p. 200). His anxieties about precarious connection extended to the recipient's reaction to the sender's double, whether sent by telephone or even by posted letter. “Anyone who has ever used a telephone to discuss a sensitive matter,” Peters reminds us, “knows how your double can arrive at the other end and work against you” (p. 202). An example from political communication is the French government's 2005 referendum on European Union membership, when voters ignored the referendum's question to express their anger at unemployment, ultra-liberalism, and the effects of globalization (Nougayrède, 2015, p. 18), a fine case of monologues failing to connect. “Today,” writes Peters, “most communications are voices crying in the wilderness” (p. 205); Kafka's world, where “the ultimate source of all messages is hidden” (p. 203), has become ours.

My final example from Peters' rich array of concepts of communication comes from his discussion of Hegel. Peters writes that “the aim of his entire system is communication: not

in the sense of shared information, but in the richer sense as the process whereby a free human world is built collectively” (p. 110). I chose this example because Hegel reverses Virno’s relationship between communication and the possibility of a politics of freedom. Rather than communication’s providing a foundation or condition of the possibility of such a politics, for Hegel politics come first; its successful outcome is communication. Peters puts it this way: communication is “a political and historical problem of establishing conditions under which the mutual self-conscious recognition of subjects is possible” (p. 112). “The problem of communication for Hegel ... is to establish a vibrant set of social relations in which common worlds can be made ... Hegel sees communication not as a kind of thought transport but as a dangerous, sometimes tragic effort to organize lived conditions so that mutual recognition can be accorded to all” (p. 118). Communication “is the founding of a world” (p. 112); the activity of such a founding is the politics of freedom.

The concept-cloud of communication generates a concept-cloud of associated political possibilities; there is much more to be said. I close by expressing my debt to Warren Steele, friend and colleague, for suggesting that thinking about communication might find value in the unreadable, inherently undecidable, inaudible, unheard of or non-said, especially in a communicative scene that harbors the reactionary dream of channels without ambiguity, interference, surprise, static, the unexpected, and noise. Their virtues and possibilities carve a space apart from the continual flow of authorized “communication,” and provokes my friend’s question: do we not also need to become thinkers of the unintelligible? I am grateful for the question, and hope the unsaid in this paper provokes others.

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“Data”: The data

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Abstract

While many scholars in information science have understandably focused on the concept of “information” as foundational, some authors have identified other concepts as having similarly foundational status. Two that are regularly suggested as candidates are “data” and “document.” Oddly, perhaps, for such a basic term, “data” has not been as frequently subject to probing analysis in the scholarly literature as “information”; and although “document” has long been a term of special interest to historians of the European documentation movement, some of whom continue to develop a document theory, there is little consensus on the precise nature of the conceptual relationship between “data” and “document.” In this paper, a review is conducted of historical interpretations of “data,” and relationships with contemporary conceptions of “document” are explored. The conclusion is reached that, current practice notwithstanding, it is not in fact the case that documents are made up of data, nor that the document is a species of dataset: rather it is the other way round, in both respects. A dataset is made up of documents; and the dataset is a species of document.

“For a science like information science (IS), it is of course important how fundamental terms are defined.”
(Capurro & Hjørland, 2003, p. 344)

Since the emergence of the field known as information science in the 1950s, scholars have understandably focused on the concept of “information” as foundational. With their *ARIST* chapter of 2003, for example, Rafael Capurro and Birger Hjørland’s goal was “to review the status of the concept of information in IS” (Capurro & Hjørland, 2003, p. 344). Notwithstanding this preoccupation with “information,” some authors have identified other concepts as having similarly foundational status. Two that are regularly suggested as candidates are “data” and “document.”

Oddly, perhaps, for such a basic term—and as commentators have repeatedly remarked (see, for example, Borgman, 2007)—“data” has not been as frequently subject to probing analysis in the scholarly literature as “information.”¹ Given that “data” is now, in 2015, somewhat of a “word of the moment,” used in such recently prevalent terms as big data, linked data, open data, data governance, data infrastructure, data mining, data protection, data quality, data science, data visualization, and data wrangling, a review of conceptions of “data” along the same lines as Capurro and Hjørland’s treatment of “information” seems long overdue. In the meantime, we can benefit from those comparative studies that situate “data” in relation to cognate terms like “information,” “knowledge,” and “wisdom” (see, for example, Zeleny, 1987; Ackoff, 1989; Thow-Yick, 1994; Rowley, 2007; Frické, 2009),² as well as from explorations of the cultural, disciplinary, and historical contexts for data production and consumption (see, for example, Gitelman, 2013; Markham, 2013), and expositions of the logic of data modelling practices (see, for example, Kent, 1978; Simsion, 2007).

“Document” has long been a term of special interest to historians of the European documentation movement, some of whom continue to develop a document theory based on the ideas of the Belgian lawyer Paul Otlet (1868–1944) and the French librarian Suzanne Briet (1894–1989), among others (see, for example, Buckland, 1997; Day, 2001; Frohmann, 2004; Lund, 2009). More recently, a renewed interest by philosophers, cultural historians, and anthropologists addresses the notions of document, documentality, and document act as foundational concepts (see, for example, Riles, 2006; Ferraris, 2013; Gitelman, 2014; Smith, 2014).

There is little consensus on the precise nature of the conceptual relationship between “data” and “document.” The default position appears to be the view that all documents are in some sense made up of data. Sometimes, it is allowed that there are several different types of data, and one of those in particular is the kind of data that makes up documents. A document is a special kind of aggregation of data: that is, it is a species of dataset. In this case, “data” is the primary concept: if data did not exist, documents could not; even though data do exist, documents need not.

The position I wish to develop in this paper, however, is that it is not in fact the case that documents are made up of data. On the contrary, it is the other way round: datasets are made up of documents. There are several different types of document, and one of those in particular is the kind of document that makes up datasets. And, given that aggregations of documents can themselves be considered as documents, a dataset is a species of document. In this case, “document” is the primary concept: if documents did not exist, data could not; even though documents do exist, data need not.

1 For the purposes of a previous paper (Furner, 2014), I found more than fifteen different scholarly publications sharing the title “What is information?” A similar search for works titled “What is [or are] data?” turned up two sources, neither of particular utility.

2 It is entirely possible that not all of these scholarly interventions were inspired by T. S. Eliot’s *The Rock*: “Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?” (Eliot, 1934, p. 7).

In this paper, I want to try to show why I believe that "document" is the primary concept, and why I believe that it is important to take that position over others. There are two main parts to the paper. In Section 2, I review some of the analyses that have been undertaken of the concept of "data," and give a historical account of the uses to which the word "data" has been put since its coinage in classical Latin. In Section 3, I briefly present the well-known way of thinking about the nature of documents previously articulated by Michael Buckland and others, and show how (what I take to be) the most useful interpretation of "data" may be incorporated into Buckland's framework, with a result that provides corroboration for my conclusion in Section 4.

1 The Nine Lives of "Data"

Analyses of the concept of "data" proceed in a variety of ways. We may distinguish among analyses that take an extensional approach (i.e., more or less exhaustively listing the things, or kinds of things, that fall under the generic heading of "data"); those that take an intensional approach (i.e., identifying the properties that something must have if it is to be treated as data); and those that take a classificatory approach (i.e., recognizing that an individual concept like "data" may have, have had, or could have multiple senses, and that these senses may be categorized in accordance with similarities in function, context, etc.).³ We may also highlight historical approaches, which instead of or in addition to conducting logical and/or computational analyses of the necessary properties of concepts, allow authors to consider the culturally specific development of the meanings of terms like data over time (see, for example, Rosenberg, 2013).

Floridi, for example, uses the third of these methods to identify four "principal interpretations" of the meaning of "data": epistemic, informational, computational, and diaphoric.⁴ The epistemic interpretation equates data with "the basic *assumptions* or empirical *evidence*" on which reasoning can be based; the informational interpretation equates data with information, "in the ordinary sense in which information is equivalent to some content ... about a referent" (2008, p. 234); the computational interpretation sees data as "collections ... of *binary elements*" (p. 235); while the diaphoric interpretation defines data as distinctions, differences, or "lacks [sic] of uniformity" (p. 235). Floridi submits that the diaphoric interpretation is "the most fundamental and satisfactory" (p. 234), and further suggests that it may be applied at three separate levels; he distinguishes among the kinds of difference that may be found at the level of the world (diaphora *de re*), among the physical states or signals of a system (diaphora *de signo*), and among the symbols of a code (dia-

3 Somewhat similarly, Christine Borgman (2014) distinguishes among "definitions by example," "operational definitions," and "categorical definitions."

4 Floridi notes that "the word 'data' comes from the Latin translation of a work by Euclid entitled *Dedomena*." This is not strictly true, of course: the word "data" was in general use in Latin prior to the translation of Euclid's work.

phora *de dicto*). Floridi states three “principle[s] of ... neutrality” that are satisfied by the diaphoric interpretation (p. 236): data are not substantive entities but rather *relata* (that is, external properties); data may be typed according to “the sort of analysis conducted and ... the level of abstraction adopted” (as, for example, primary data, secondary data, metadata, operational data, and/or derivative data; p. 236); and data can be meaningful “*independently of an informee*” (p. 236).

To Floridi’s taxonomy of four, we might add at least five other families of interpretation, for a total of nine, beginning with the classical interpretation that dates from antiquity.

1.1 The Classical Interpretation: Data as Gifts (ca. 100 BCE–)

In classical Latin (the form of the language used in the period roughly between 100 BCE and 200 CE), the present active infinitive of a first-conjugation verb has the suffix *-are*; examples are *amare* (“to love”), and *dare* (“to give”)—otherwise commonly denoted by the first person singular of the verb’s present active indicative, i.e., *amō* (“I love”), and *dō* (“I give”).⁵ The nominative masculine singular form of the perfect participle of *dō* is *datus* (“given”); *datum* is this participle’s nominative neuter singular form, while *data* is both the nominative neuter plural and the nominative feminine singular.

The perfect participle—which is always passive—functions in the same way in Latin as an adjective in English: e.g., *Pecunia data*, “The having-been-given money,” or “The money that has been given,” or simply “The money given.” Used as a substantive, *datum* can mean “gift” (in the literal sense of “that which is given”);⁶ the plural *data*, then, may be translated as “things given” or “gifts.”⁷

During the Roman Empire’s period of decline, written Latin also suffered widespread debasement. The medieval Latin (ca. 600–1500 CE) that ultimately supplanted the Late Latin dialect (ca. 200–600 CE) was more hospitable to the introduction of words, meanings, and grammatical structures from various vernaculars, and the Latin dictionaries produced by scholars across Europe during this time reflected such change. The *Summa Grammaticalis*

5 *Dō* itself has been hypothesized to descend ultimately from the reconstructed Proto-Indo-European root **deh₃-*. The origins of the English words *give* and *gift*, on the other hand, have been tentatively traced to the reconstructed Proto-Indo-European root **g^hh₁b^h-*, from which source also come not only the German *geben* (“to give”) but also, perhaps somewhat counter-intuitively, the Latin *habēō* (“I have, hold”).

6 A Latin synonym of *datum* is the second-declension neuter noun *dōnum* (plural *dōna*), from which is derived the first-conjugation verb *dōnō* (“I give”), with its present active infinitive *dōnāre* (“to give”) and perfect passive participle *dōnātus* (“given”), and the third-declension feminine noun *dōnātiō* (plural *dōnātiōnēs*). The links to the English verb “donate” and noun “donation” are clear.

7 The *Oxford Latin Dictionary* (2nd ed.; OLD2; Glare 2012) cites usages of the plural *data* in this way in the comedy *Asinaria* by Titus Maccius Plautus (ca. 254–184 BCE), the poetry of Gaius Valerius Catullus (ca. 84–54 BCE), the elegies of Sextus Propertius (ca. 50–15 BCE), and the dialogues of the Stoic philosopher Lucius Annaeus Seneca (ca. 4 BCE – 65 CE).

Quae Vocatur Catholicon ("The Grammatical Summary That is Called *Catholicon*"),⁸ compiled in the late thirteenth century by the Dominican scholar Giovanni Balbi (d. 1298)⁹ of the republic of Genoa on the northwestern Italian coast, was one of the most widely used Latin dictionaries in medieval Europe, and in fact was one of the first books to be printed (at Mainz in 1460, possibly by Gutenberg; see Balbus, 1971). It contains an entry for *dō*, of course, with several of its conjugated forms listed including *datus*, *datum*, and *data*, but none of these appears as a separately defined headword.

The first clear English-language definition of either *datum* or *data* to appear in a Latin–English dictionary seems to be the one given more than a century later in Thomas Thomas's *Dictionarium Linguae Latinae et Anglicanae* of 1587 (Thomas, 1972). Here, the Latin headword *dātūm* is defined as "A thing given, a gift delivered or sent."

1.2 The Documentary Interpretation: Data as Metadata (ca. 100 BCE–)

The medieval practice of glossing—readers' handwritten annotation of manuscripts, often including Middle English translations of the Latin words and phrases found there—generated a new genre in the fifteenth century: the compilation by scholars of glosses from various sources, to form lists of Latin words with accompanying Middle English equivalents.¹⁰ The provenance of the various surviving manuscripts of these bilingual glossaries is difficult to untangle, but two works that have circulated under different titles display great similarities, and it has been demonstrated that the authors of both are likely to have relied on the *Catholicon* and other readily accessible Latin dictionaries for their Latin vocabularies. *Medulla Grammaticae* ("The core of grammar") is one of the first such glossaries to have been completed, perhaps as early as 1425;¹¹ *Hortus* [or *Ortus*] *Vocabulorum* ("The garden of words") dates from roughly the same period.

Surviving versions of *Medulla Grammaticae* list *dō* with the Middle English equivalents of *to gyve*, *to zeyvn*, and *to geve*—this was an era both of unstandardized spelling and a general transition from the use of the letter yogh (ȝ) to (depending on the context) *g*, *gh*, *w*, or *y*—and some list *dōnō* with the same meaning.¹² *Dōnum* is usually listed with the meaning *a gyft*, and *datius* (or *datiuus*), *-a*, *-um* with the meaning *gevyng*, but not *datus*, *-a*, *-um* as such. The first printed version of *Hortus*, on the other hand, supplies possibly the earliest appearance of *data* as a separate headword in a Latin–English glossary—albeit with an entry itself written entirely in Medieval Latin, which may be translated roughly

8 *Catholicon* derives from the Greek *Καθολικόν*, "Universal."

9 Giovanni Balbi was also known as Johannes Balbus, Johannes de Janua, and Johannes Januensis, among other variants.

10 Middle English is a name for the family of dialects spoken (and written) in England between ca. 1100 and 1500 CE. It was preceded by Old English (a.k.a. Anglo-Saxon; ca. 500–1100 CE), and succeeded by Early Modern English (ca. 1500–1650 CE).

11 Sometimes *grammaticae* has been written as *grammaticae* or *grammatices*.

12 See, for example, Van Zandt-McCleary (1958), Tremblay (1968), and Huntsman (1973).

as follows: “*Data* or *datum* is a mark written at the end of ordinances or letters, by which means it can be determined on what month or day each letter was published.”¹³ There is some evidence to suggest that the form of *data* being referenced here is actually the feminine singular, rather than the neuter plural: the *Oxford English Dictionary* (3rd ed.; OED3; Simpson, 2000), for example, notes in its entry for the English noun “date” that the feminine singular *data* was used as a substantive in both classical and post-classical Latin to mean “date,” in the specific sense of a statement at the beginning or end of a letter—a statement not only of the time at which, but usually also of the place from which, the letter was sent.¹⁴ From this, we may infer that, rather remarkably, one of the earliest uses of *data* by English writers was to refer to what we would now likely recognize as a piece of *metadata*.

1.3 The Ecclesiastical Interpretation: Data as Gifts of God (ca. 1614–)

Perhaps unsurprisingly, given the primary concerns of the age, the first use of *data* as a word in an otherwise English-language text appears to have been in the clergyman Thomas Tuke’s *Nevv Essayes* of 1614. Tuke (ca. 1580–1657) writes: “Every Sacrament is a Mysterie, but every Mysterie is not a Sacrament. Sacraments, are not *Nata*, but *Data*: Not Naturall, but by Divine appointment ...” (Tuke, 1614, pp. 70–71). Searches of EEBO-TCP¹⁵ reveal the use of *data* as an element in several Latin phrases that occasionally appear in religious texts of early seventeenth-century England—for example, *gratia gratis data* (“grace freely given”), and *data desuper* (“given from above”). More often than not, of course, the writer assumes that the reader will understand that the unnamed giver in these scenarios is God.

By the middle of the seventeenth century, it appears, the sense of *data* as (specifically) “that which is given by God” is well established. The poet John Donne (1572–1631) uses *data* in this way in his sermon of November 19, 1627, transcribed for publication in 1649

13 See *Hortus Vocabulorum*, 1500 (1968): “Data vel datum est caracterizatio in fine constitutionum [i.e., constitutiarum?] vel litterarum inscripta. ex qua cognosci potest quo mense vel die instrumentū[m] vel quelibet littera emanauit. f.p.”

14 This sense of “date” in modern English is defined by the OED3 as “A statement in a document, letter, book, or inscription, of the time (and often place) of enactment, writing, publication, manufacture, etc.” The OED3 gives several examples of the Latin use of the feminine singular *data* in the *Epistulae ad Atticum* of Marcus Tullius Cicero (106–43 BCE); others may be found by searching *Classical Latin Texts* at <http://latin.packhum.org/>. The *Dictionary of Medieval Latin From British Sources*, Vol. 1: A–L, Fasc. 3 (Latham, 1986) gives “date or dating clause” as sense 13b of *dare*, citing a number of sources from the period 1095–1404. The general use of *dare* to mean “to issue a formal letter or other document” (13a) is recorded in works from the period 601–1398, including the *Historia Ecclesiastica Gentis Anglorum* by the Northumbrian monk Bede.

15 The Text Creation Partnership [TCP] “creates standardized, accurate XML/SGML encoded electronic text editions of early print books ... transcrib[ing] and mark[ing] up the text from the millions of page images in ProQuest’s *Early English Books Online* [EEBO] ...”; see <http://www.textcreationpartnership.org/home/>.

as one of his *Fifty Sermons* (Donne, 1649, p. 132), as does the clergyman Edward Boughen (1587–1660) in his *Master Gerees Case of Conscience Sifted* (Boughen, 1650, p. 11).

1.4 The Geometric Interpretation: Data as Geometric Premises (ca. 1645–)

"Euclid" is the anglicized form of the ancient Greek name Εὐκλείδης (Eukleidēs) used by the celebrated mathematician who flourished in Alexandria, Egypt, around 300 BCE. Euclid's sequence of books known as *Στοιχεῖα* (*Stoicheia*; "Elements") is an unrivalled candidate for the title of the most influential mathematical work of all time; it established the principal axioms and theorems of the mathematical system that came to be called Euclidean geometry. The *Elements* was first translated from the original Greek into Arabic in the eighth century, and then from Arabic into Latin in the twelfth;¹⁶ the first printed edition (of a Latin translation) appeared in 1482, and a first English version, translated by Henry Billingsley, was printed in 1570.

Other works by Euclid that have survived include *Δεδομένα*, *Dedoména*—so-called because it opens with the neuter plural form of the passive perfect participle of *δίδωμι* (*dídōmi*, "I give")—which deals with the nature of that-which-is-given in geometrical problems, and ways of deducing what additional facts are also "given" (i.e., determinable) once the known facts, the premises, are taken into account. When, in the twelfth century, *Dedoména* was translated into Latin directly from the Greek, it was given the title *Data*. The first English translation of *Data*, by two "students of mathematics" (John Leeke and George Serle), was included with an edition of *Elements* in 1661 (Euclid, 1661); the work would have been known to some English writers before then, of course, through the various printed editions that existed of its Latin translation, but the relatively late appearance of its English translation indicates that Euclid's *Data* was not widely disseminated in England before the second half of the seventeenth century.

The earliest use of "data" in an English-language work on geometry appears to be in *The Trissotetras, or, A Most Exquisite Table for Resolving All Manner of Triangles* of 1645. Here, the Scottish maverick Thomas Urquhart (1611–60) includes the following definition of "data" in a "Lexicidion" (Urquhart, 1645, p. 94): "[T]he parts of a Triangle, which are given us, whether they be Sides or Angles, or both." The English hydrographer Joseph Moxon (1627–1691) was the first to use "data" as a headword in a specialized English-language dictionary (his *Mathematicks made easie* of 1679), with this definition: "A Term in Geometry for something proposed or known, in order to the finding out of other things unknown. As two Sides and an Angle given in a Triangle, to find the third Side; Here two Sides and an Angle are the Data. See *Euclid's Data*." (Moxon, 1679, p. 40).

16 Latin translations may well have been available in both classical and post-classical periods, but no copies of these have been preserved.

1.5 The Mathematical Interpretation: Data as Mathematical Premises (ca. 1704–)

By the start of the eighteenth century, the geometric interpretation of “data” had broadened to include any given mathematical knowns, regardless of the area of application. In John Harris’s *Lexicon technicum: or, An universal English dictionary of arts and sciences* of 1704, “data” is defined as “the Term in Mathematicks for such things or quantities as are supposed to be given or known: in order to find out thereby other things or quantities which are unknown or sought for, and *Euclide* uses the Word *Data*, (of which he hath a particular Tract) for such Spaces, Lines, and Angles, as are given in Magnitude, or to which we can assign others equal. See *Given*.” (Harris, 1704). Harris’s definition is echoed in Nathan Bailey’s *An universal etymological English dictionary* of 1721 (“Such Things or Quantities as are supposed to be given or known, in order thereby to find out Things or Quantities which are unknown, and sought for”; Bailey, 1721); Benjamin Martin’s *Lingua Britannica reformata* of 1749 (“a term in mathematics for such things or quantities as are known or given, in order to find out other things thereby, which are unknown”; Martin, 1749); and the first edition of the *Encyclopædia Britannica* of 1771 (“among mathematicians, a term for such things or quantities as are given or known, in order to find other things thereby that are unknown. Euclid uses the word data [of which he hath a particular tract] for such spaces, lines, and angles as are given in magnitude, or to which we can assign others equal”; *Encyclopædia Britannica*, 1771).

1.6 The Epistemic Interpretation: Data as Evidence (ca. 1648–)

From the newly expanded sense of “data” as “any mathematical premises,” the step to “any premises” *tout court* was short, and seems to have been decisively taken in the early eighteenth century (although Rosenberg [2013, pp. 20, 38] cites a 1648 work, *A brief vindication of three passages in the Practical catechisme* [Hammond, 1648], by the clergyman Henry Hammond [ca. 1605–60] as an even earlier source of “data” used in this sense¹⁷). In 1728, Ephraim Chambers included a generalized definition in his *Cyclopædia: or, An universal dictionary of arts and sciences* (Chambers, 1728):

Things given, a Term used in Mathematicks, Philosophy, &c. implying certain Things, or Quantities supposed to be given, or known, in Order, from them, to find out other Things or Quantities, which are unknown, or sought for. A Problem or Question generally consists of two Parts; *Data* and *Quæsitæ*. See PROBLEM, &c. *Euclid* has an express Treatise of *Data*;

17 “... [W]here, I say, all this granted to you, yet sure from all this heape of *data* (if they were *concessa* too) it would not follow that it was necessary, or so much as tolerably well done, to abolish all set Formes in the publique service of God, which was the prime thing by that *View* insisted on.” The original source of this quotation is actually a letter of November 4, 1646, from Hammond to Francis Cheynell (1608–65), published in 1647 in *A copy of some papers past at Oxford, betwixt the author of the Practicall catechisme, and Mr. Ch.* (Hammond, 1647, pp. 83–84).

Wherein he uses the Word for such Spaces, Lines and Angeles as are given in Magnitude; or to which we can assign others equal. See GIVEN. From the primary Use of the Word *Data* in Mathematicks, it has been transplanted into other Arts; as Philosophy, Medicine, &c. where it expresses any Quantity, which, for the Sake of a present Calculation, is taken for granted to be such, without requiring an immediate Proof for its Certainty; called also the *given* Quantity, Number, or Power: and such Things as are known; from whence either in Natural Philosophy, the animal Mechanism, or the Operation of Medicines, we come to the Knowledge of Things before unknown, are now frequently in Physical Writers call'd *Data*.

While there is no entry for "data" in Samuel Johnson's *A dictionary of the English language* (Johnson, 1755), Noah Webster's *An American dictionary of the English language* (Webster, 1828) paraphrases Chambers: "Things given, or admitted; quantities, principles or facts given, known, or admitted, by which to find things or results unknown." Joseph Worcester follows suit in his *Dictionary of the English language* (Worcester, 1860)—"Truths or premises given or admitted, from which to deduce conclusions; the facts from which an inference is drawn"—as does Charles Annandale in his revised edition of John Ogilvie's *The imperial dictionary of the English language* (Ogilvie, 1882)—"Something given or admitted; any condition, quantity, or other mathematical premiss, which is given in a particular problem." For two centuries, and at least until the late 1800s, the epistemic interpretation of "data" was the primary one in English.

1.7 The Informational Interpretation: Data as Attribute-Values (ca. 1630–)

A major shift in the dominant interpretation of the concept of *data* began to take place in the second half of the nineteenth century. Accompanying the rapid development of the statistical and social sciences came the proliferation of systematically organized tables of numerical values, recording and reporting the frequencies and quantities resulting from observations and measurements conducted in accordance with the principles and standards of scientific method. The contents of these tables—the "givens" that, once collected and organized, became the raw materials for new, sophisticated forms of quantitative analysis—began to be known as data. In this way, the notion of data as "content ... about a referent" pre-dates by some distance the use in computer science, from the 1960s onwards, of the term "database" to talk about structured collections of recorded instances of (typically, but not always, numeric) attribute-values.¹⁸

18 Even less widely appreciated is the fact that examples of such tables with captions including the word "data" may be found in publications dating from the 1600s onwards. The *OED3* (Simpson 2000–) lists the source of the first appearance of "data" playing this role as p. 3 of a pamphlet of 1630, *A most plaine and easie way for the finding of the sunnes amplitude and azimuth, and thereby the variation of the compasse, by logarithme* (Batten, 1630), written by Sir William Batten (ca. 1600–1667), English naval officer and Member of Parliament. The *OED3* gives the following definition for this usage of "datum": "Chiefly in *pl.* An item of (chiefly numerical) information,

A further extension to the “data” concept derives from the recognition that not all attribute-values are expressible in numeric form. Contemporary developments in semantic web technologies have demonstrated the utility in treating declarative statements as object–attribute–value (or subject–predicate–object) triples, whose values may take the form of character strings (or entity-names) of any kind; but the semantic web is just one recent manifestation of a broader understanding of “data” that became widespread early in the twentieth century. In the literature of the social sciences, the insight that data may be typed is sometimes attributed to the American psychologist Stanley Stevens (1906–73), citing his 1946 paper (or its 1941 presentation) as a source for a taxonomy of scales of measurement that distinguishes among nominal, ordinal, interval, and ratio scales (see *Figure 1*; Stevens, 1946; see also Newman, 1974). In developing (what Joel Michell calls) a representationalist theory of measurement (see, for example, Michell, 1986), Stevens was indebted to earlier writers such as the German physicist Hermann von Helmholtz (1821–94) and the British philosopher Bertrand Russell (1872–1970; see, for example, Helmholtz, 1977 and Russell, 1903). In fact, the distinction between ordinal and cardinal numbers can be traced back to the sixteenth century, that between qualitative and quantitative analysis to the early nineteenth, and that among kinds of variable observed or measured to the late nineteenth. A qualitative variable is one whose possible values are not numeric, but still answer the question, “What kind of thing is this?” A nominal or categorical variable is one whose values are names of classes or categories.¹⁹ An ordinal variable is one whose values may be ranked, but do not express the size of the differences among them. The values of cardinal variables indicate how many (predefined) units of measurement are counted.²⁰

esp. one obtained by scientific work, a number of which are typically collected together for reference, analysis, or calculation.”

19 For those who would characterize numerals, also, as names of classes, we might wish to add to our definition of a nominal variable the constraint that its values are not arrangeable in any meaningful, quantitative order. That nominal variables may always be *coded* numerically (e.g., blue = 0, red = 1) is neither here nor there.

20 The fine distinction that Stevens drew between interval and ratio scales is no longer widely applied.

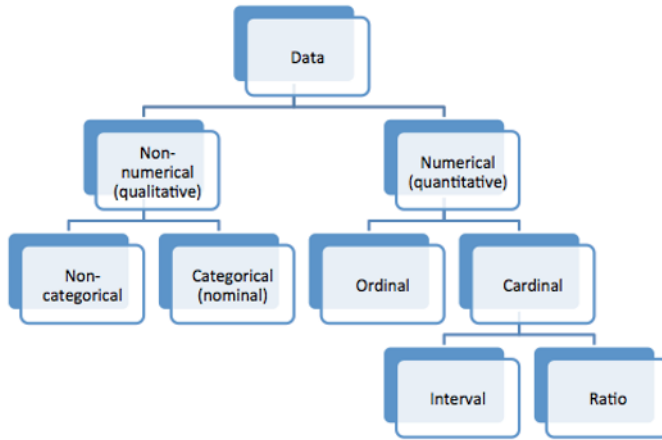


Fig. 1 A selection of data types

The essence of the representationalist view, according to Michell (1986, p. 398), is that “numbers are used in measurement to represent empirical relations between objects”; i.e., the numbers represent “an empirical relational system, which is thought of as an objective structure existing quite independent of our operations” (p. 404). The underlying idea that there exists an objective reality from which data may be “read off” is a cornerstone of the realist tradition in metaphysics. Positivist approaches to inquiry assume just such a realist ontology; conversely, constructivist approaches invoke a relativist ontology in which substantial components of the external world are understood to be constructed by, and dependent on the actions and subjective thoughts of, human agents.

Johanna Drucker (2011) argues that the very concept of “data” is meaningful only in the context of naïve realist approaches to inquiry. The realist’s ontological assumption that phenomena exist independently of any observers—i.e., the assumption that any question of whether or not phenomenon X exists is a matter of objective fact—is typically accompanied by a set of premises as follows: that any question of whether or not phenomenon X has property Y is also a matter of objective fact; that, for any representation, description, or statement of the properties of phenomenon X to be considered true (correct, valid, etc.), that representation needs to correspond accurately to the facts; and that it is generally possible, under normal conditions and with appropriate measures taken to correct for known biases, to acquire knowledge of the facts through observation. In this context, the true statement, the act of unbiased observation, the facts, and the phenomenon itself are supposedly in such perfect alignment that they are treated almost as if they are all the same thing—with the effect of “collaps[ing] the critical distance between the phenomenal world and its interpretation, [and] undoing the basis of interpretation on which humanistic knowledge production is based.” Specifically, data are conceived as no more than “mere descriptions” of *a priori* conditions.

Drucker notes that humanistic and interpretative inquiry acknowledges the “situated, partial, and constitutive” character of knowledge production that is ignored in the positivist’s scientific paradigm. The constructivist recognizes that “knowledge is ... taken, not simply given as a natural representation of pre-existing fact.” Drucker imagines the reconception of “data” as “capta” (the nominative neuter plural of the perfect passive participle of the third-conjugation Latin verb *capere*, “to take”): “while data are given, capta are taken.”²¹ For Drucker, this reconception is a necessary precondition of the “re-examin[ation of] the intellectual foundations of digital humanities” for which she calls.

Michell contrasts representationalism in measurement theory both with the operationalist view that measurement is simply “an operation that produces numbers” in some precisely specified way (p. 403)—from which we may infer that “the data on which measurement is based are *inherently* numerical” (p. 404, emphasis added)—and with the classical view, dating as far back as Aristotle and Euclid, that measurement is simply the assessment of quantity, i.e., the determination of “how much of a given attribute some object possesses” (p. 405).

1.8 The Computational Interpretation: Data as Bits (ca. 1980–)

The most recent stage in the evolution of standard senses of the “data” concept can be dated not to the 1950s or 1960s as one might expect, but to the last decades of the twentieth century. The earliest dictionaries of computing terminology did not mention “data” at all, and it was only with the production of the IBM 701 Electronic Data Processing Machine, launched in 1953, that the term began to be more widely used in a computing context. Initially, the sense was of data as attribute-values—the readings, measurements, and results of scientific inquiry, typically numeric in form, to be manipulated as “givens” for statistical and mathematical analysis—and this usage has of course persisted in the database community. In time, however, “data” has come to be regarded in some contexts as virtually synonymous with “bits” (i.e., binary digits—the 0s and 1s that computers handle or “process” at the most fundamental level), or “the digital,” or even “the digitizable.” A source of misunderstanding in contemporary discussions of data science and big data is a tendency to conflate three related but distinct interpretations: data as evidence; data as (typically numeric) attribute-values; and data as bits.

1.9 The Diaphoric Interpretation: Data as Differences (ca. 2000–)

A distinction similar to the one that Floridi draws among three types of diaphora (*de re*, *de signo*, and *de dicto*) may equally usefully be applied to an informational interpretation of “data.” Just as classificatory analyses of “information” have pointed to the possibilities

21 Peter Checkland, developer of Soft Systems Methodology (SSM), seems to have been the first to suggest the term “capta,” in the early 1980s (see, for example, Checkland, 1999, pp. 53–54); he uses it to denote “those items of data which we focus on, have a concern about, define, and select.”

of finding informative entities in the worlds of physical reality, thought, and expression (see, for example, Furner, 2004), we might consider that data, too, may be found at the dedomenal (or noumenal), haireomenal (or phenomenal), and graphomenal levels:²²

- data as objective reality, which we might determine (*contra* Kant, but in line with realist or representationalist accounts of measurement) is accessible to, and knowable and describable by, human agents;
- data as subjective appearances, observations, ideas, meanings, or propositional content; and
- data as linguistic expressions of individual observations.

For example, instead of (or in addition to) merely claiming that the sentence "Lubetzky is wise" is data, we might prefer to treat the mental image that we have of Lubetzky's wisdom as data, or even to treat the fact or state of Lubetzky's being wise as data. These distinctions replicate some that are frequently noted in discussions of the concept of information.

2 "Data" vs. "Document"

The most widely cited analysis of the concept of "document" is Michael Buckland's. Buckland first elucidates the notion of "information as evidence, as things from which one becomes informed," identifying three "sorts of things this might include": data; "text and documents"; and objects (Buckland, 1991, p. 353). He then suggests expanding the category of "document," along the lines taken by Otlet and Briet, to include not only texts but also all other physical things that are informative. For Buckland, the terms "document," "information as evidence," "information-as-thing," and "information resource" are equivalent; he argues that handwritten manuscripts, printed books, museum objects, tables of numerical data, and catalog records comprise separate "subsets" of the universal set of documents.²³ Using the terminology that Floridi applies to conceptions of "data," we may characterize Buckland's analysis as an instance of an informational interpretation of "document": for Buckland, the most salient feature of a document is not that it is a set of known facts from

22 In ancient Greek, the word *vooúμενον* (*nooúmenon*) is the neuter nominative singular of the passive present participle of the verb *voέω* (*noέō*, "I know"); *αίρεόμενον* (*haireómenon*) is the corresponding form of the verb *αίρέω* (*hairéō*, "I take"); *φαινόμενον* (*phainómenon*) is derived from *φαίνω* (*phaínō*, "I appear"); and *γραφόμενα* (*graphómena*) is derived from *γράφω* (*gráphō*, "I write"). In the philosophy of Immanuel Kant (1724–1804), a noumenon is a "thing-in-itself" (*Ding an sich*)—an object or event as it exists, independent of any sentient being—while a phenomenon is a thing as it is knowable by the senses.

23 The conception of information as evidence that Buckland presents here is different from that developed in the Schellenbergian tradition of archival science, where archival records serve as evidence of the contexts in which they were produced and used.

which as yet unknown facts may be deduced, nor that it is an aggregation of binary digits, but that it has propositional content.

One aspect of Buckland's original presentation of the documentalists' traditional understanding of "document" that is not quite clear is the precise nature of the relationship purported to exist between "information" and "data." Buckland notes that "data" is "an apt term for the sort of information-as-thing that has been processed in some way for use" (1991, p. 353), that it is also "commonly" used to denote "whatever records are stored in a computer" (1991, p. 353), and that there is "a tendency" to use it to denote "numerical information" (1991, p. 354). He concludes, however, that "it is wise not to assume any firm distinction between data, document, and text" (1991, p. 354).

The issue here is that it seems logically possible, at least for any alphanumeric text, to make conceptual distinctions among the following entities:²⁴

1. any one of a number of material instances of the carrier of the text (each instance comprising an aggregation of, e.g., leaves of paper bound as a book);
2. the abstract form of the carrier of the text;
3. any one of a number of material instances of the symbolic encoding of the text (each instance comprising an aggregation of, e.g., characters, numerals, words, and/or values);
4. the abstract form of the encoding of the text;
5. any one of a number of material instances of the content of the text (each instance comprising an aggregation of, e.g., propositions); or
6. the abstract form of the content of the text.

Which (or which combination) of these entities, if any, is correctly labelled "document"—and, therefore, "information"—according to Buckland's model? The option that seems to fit the bill most closely is #5, interpreted as a physical thing that is informative. But then where, if anywhere, is "data" to be found among these entities?

The situation is complicated slightly by the difference in grammatical status of "document," "information," and "data."²⁵ Partly as a result, ordinary contemporary practice is to treat documents as discrete aggregations of quantities or amounts (rather than pieces or items) of information. Nevertheless, in general, the documentalist's understanding of the relationship among these entity-types may be modeled as follows (model A), combining an informational interpretation of "document" (as an aggregation of triples) with an

24 Cf. the items, manifestations, expressions, and works defined in the *Final report* of the IFLA Study Group on the Functional Requirements for Bibliographic Records (IFLA 1998): entities #1, #3, and #5 may be equated with items, entity #2 with a manifestation, #4 an expression, and #6 a work.

25 The first is a count noun; the second is a mass noun; and the third is sometimes used as a count noun, sometimes as a mass noun. It makes sense to talk of "ten documents," just as it does to talk of "ten dollars"; but we would not usually choose to talk of "ten informations," just as we would not normally say "ten monies." "Data," of course, is an odd case: its origin in Latin as a plural form leads many writers to insist on its taking a plural verb (e.g., "The data are ..."), but presumably even those scholars would balk at using formulations like "ten data."

informational interpretation of "data" (as numeric attribute-values), with the upshot that "dataset" is treated as a species of "document":²⁶

Documents consist of **Information**.

.. **Texts** (i.e., Textual documents) consist of **Text** (i.e., Textual information).

.. **Datasets** (i.e., Numerical documents) consist of **Data** (i.e., Numerical information).

If the inclusion of information as a separate entity in this model, with each of text and data considered as its species, seems to flout Occam's razor (see, for example, Furner, 2004), we might consider reformulating it as follows (B):

Document-sets consist of **Documents**.

.. **Texts** (i.e., Textual document-sets) consist of **Textual documents**.

.. **Datasets** (i.e., Numerical document-sets) consist of **Numerical documents**.

Each of these models stands in contrast to an understanding that is sometimes articulated in the computer science community, which combines a computational interpretation of "data" (as bits) with a computational interpretation of "document" (as bit-string) to arrive at a model (C) in which a document is treated as a species of dataset:

Datasets consist of **Data**.

.. **Documents** (i.e., Textual datasets) consist of **Textual data**.

.. **Numerical datasets** consist of **Numerical data**.

A variant (D) of this latter position rests on an intuition that, conceptually, there is no distinction to be made between "data" and "dataset"—that any given dataset is itself a set of datasets, and that any given datum is just as much an aggregation of data as any given dataset (and has just the same kinds of qualities):

Datasets consist of **Datasets**.

.. **Documents** (i.e., Textual datasets) consist of **Documents** (i.e., Textual datasets).

.. **Numerical datasets** consist of **Numerical datasets**.

Applying the same kind of thinking to the documentalist's position—recognizing that there is no distinction to be made between "document" and "document-set"—gives the following result (E):

26 In the presentation of this and succeeding models, the double-dot notation indicates a genus-species relationship. In model A, for example, each of the two entity-types **Texts** and **Datasets** is a species of **Documents**: in other words, all texts are documents, and all datasets are documents, but not all documents are texts, neither are all documents datasets.

Documents consist of **Documents**.

.. **Texts** (i.e., Textual documents) consist of **Texts** (i.e., Textual documents).

.. **Datasets** (i.e., Numerical documents) consist of **Datasets** (i.e., Numerical documents).

One of Allen Renear's long-term projects has been to refine a theory of documents that satisfactorily accounts for problems with characterizations of documents as aggregations, strings, graphs, relations, ordered hierarchies, tuples, sentences, or (in general) sets (see, for example, Coombs, Renear, & DeRose, 1987; DeRose, Durand, Mylonas, & Renear, 1990; Renear, Mylonas, & Durand, 1996; Renear, 2004; Renear & Wickett, 2010). With Simone Sacchi, Karen Wickett, and David Dubin, Renear has also developed a conceptual model in which the term "datasets" is used for "symbol structures that express data content together with, in many cases, auxiliary information" (Renear, Sacchi, & Wickett, 2010; Sacchi, Wickett, Renear, & Dubin, 2011; Wickett, Sacchi, Dubin, & Renear, 2012).

Renear and his colleagues distinguish carefully between, on the one hand, the data and metadata that are aggregated to form the "symbol structures" known as datasets, and on the other, the "content" or information that is expressed by those data and metadata, so that if we were to represent Renear's model in the form used in the previous section, part of it would look like this (F):

Datasets consist of **Data** and **Metadata**.

.. **Data** express **Data content**.

.. **Metadata** express **Contextual information about data**.

One supposed benefit of this approach is that we can represent, in the model itself, the classic semiotic distinction between signifier and signified, sentence and proposition, term and concept, expression and thought, signal and message, and (perhaps) data and information, where the information "contained in" or communicated by a dataset is equivalent to an aggregation of the meanings attributed to that dataset by the consumer. Simplifying our presentation of Renear's model in one respect (flattening the distinction between data and metadata) and augmenting it in another (reintroducing the distinction between the textual and the numerical), we might arrive somewhere like this (G):²⁷

Documents consist of **Data**, which express **Information**.

.. **Texts** (i.e., Textual documents) consist of **Text** (i.e., Textual data).

.. **Datasets** (i.e., Numerical documents) consist of **Numerical data**.

²⁷ One feature of Renear's model is its generality, such that the category of **Datasets** is conceived as inclusive not only of textual and numerical artefacts, but also of pictorial, audiovisual, and multimedia forms (among potentially many others). So to reintroduce the textual-numerical distinction at this point might be construed, not so much as a desirably particularizing move, as an undesirably limiting one. But the identification of these two species is intended to be representative rather than exhaustive of all possibilities. I am grateful to Johanna Drucker for pointing out the need for clarification here.

In a final iteration, we can take on board the documentalist's idea of "document," rather than "data," as the broadest category of triple-aggregations (as applied in model A), and the notion that there is no useful conceptual distinction to be made between "document" and "document-set" (as applied in model E), with the following result (H):

Documents consist of **Documents**, which express **Information**.

.. **Texts** (i.e., Textual documents) consist of **Texts** (i.e., Textual documents).

.. **Datasets** (i.e., Numerical documents) consist of **Datasets** (i.e., Numerical documents).

This, then, is the result of combining an informational interpretation of "data," an informational interpretation of "document," and a subjectivist interpretation of "information" (as meaning). It is formally very similar to the original documentalist's position presented above, and draws a real and useful distinction between "document" (interpreted as denoting entities of type #3 in the list above) and "information" (reserved in this context for entities of type #5).

3 Conclusion

The downsides to the computational interpretation of "data" and "document" (see Section 2.8) are several.

- It is incorrect. It is not the case that all the entities that play the roles to which we assign the names "data" and "document" are digital or even digitizable.
- It is incoherent. The binary digits that are said to comprise documents are of a kind that is indistinguishable from the kind of binary digits that are said to comprise data. So how can the distinction between documentary data and non-documentary data be made?
- It is useless.²⁸ There is nothing conceptually to be gained by reducing the entire universe of cultural, scientific, creative, and intellectual works to a sequence of 0s and 1s.

The informational interpretation, on the other hand (see Section 2.7), comes warmly recommended. It allows us to give distinctive names to a number of simple concepts to which we need to refer frequently and extensively in both day-to-day and specialized activities, and it has had reputable adherents for centuries. It is not in fact the case that documents are made up of data, nor that the document is a species of dataset: rather it is the other way round, in both respects. A dataset is made up of documents; and the dataset is a species of document.

²⁸ This is the most significant downside. If the computational interpretation were useful, it wouldn't matter so much that it's incorrect.

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<http://eebo.chadwyck.com/home/> or <http://quod.lib.umich.edu/e/eebogroup/>.

‡*Eighteenth Century Collections Online*.

<http://find.galegroup.com/ecco/> or <http://quod.lib.umich.edu/e/ecco/>.

†*HathiTrust Digital Library*.

<http://www.hathitrust.org/>.

‡*The Making of the Modern World*.

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On the Pre-History of Library Ethics: Documents and Legitimacy

Joacim Hansson

Abstract

This chapter pursues an argument that librarianship has a long tradition of consistent ethical statements regarding the profession that, in more or less formal ways, have been prescriptive in character. The main focus is the relation between these statements and the kinds of documents in which they are formulated. It is argued that at various times in the history of librarianship certain types of documents have rendered ethical aspects of the library profession legitimacy and thus have taken on a prescriptive role. Empirically, three such documents are analysed; an ethical code from the early 20th century, a 17th century handbook in librarianship and a Papal Bulla from the late 15th century. As the main focus of the article lies on the long period before the emergence of formal ethical codes, emphasis lies on the two latter documents. Although different in character and scope these documents construct a continuous ethical foundation for librarianship in at least three aspects: (1) definitions of professional identity, (2) statements of core values, and (3) reiterations of multiple obligations. Seen in relation to historical periods and types of libraries—Bibliotheca Apostolica in Rome, a baroque library in Paris, and American public libraries—these documents create legitimacy for the profession through their respective contemporary relevance. This, in turn, raises the question of which kinds of documents are to formulate legitimate ethical guidelines for librarianship in a future where relative authority and legitimacy of different types of documents are becoming increasingly difficult to discern.

A profession is like a sonnet. It confines the effort to a prescribed channel, but stimulates a higher standard of excellence within the self imposed bounds.
(Charles Knowles Bolton, 1922)

It is possible to argue that librarianship is one of the founding professions of civilisation. Together with physicians, lawyers and various kinds of religious leaders, every society

has had librarians in one form or another. Librarianship has, however, traditionally only been seen in the shadow of the other “original professions,” defined historically first and foremost by the requirement of academic education and formal professional associations. In addition to this, one characteristic of both original and emerging new professions is the existence of ethical codes prescribing standards of professional conduct and priorities in situations of conflicts. Within librarianship the issue of ethical codes in a more formalistic sense was debated during the first decades of the 20th century, although it was not until 1938 that the American Library Association (ALA) presented the world’s first formal code of ethics for librarians.

In this essay, I will pursue an argument that librarianship has a long tradition of consistent ethical statements regarding the profession that, in more or less formal ways, have been prescriptive in character. The concept of ethics is closely related to that of legitimacy—what is “ethical behaviour” in a specific organisational context?—as is the often overlooked question of what kinds of documents have formulated professional ethics in the library field. The relation between ethically significant statements and the type of document in which they are pronounced will be given special attention based on the concept of “ontological documentality.” This approach sees the document *in itself* as pivotal for the kind of formulation that a particular ethical code takes and the legitimacy it yields. This perspective deserves analysis not least today when library ethics (Hauptman, 2002; Preer, 2001; Besnoy 2009; Vaagan 2002), and the wider, but closely related question of information ethics (Capurro, Eldred & Nagel, 2013; Floridi, 2013) are increasingly discussed both in professional and social contexts and the variety of document forms competing for authority is more vast and complex than ever before.

Professional Ethics

Professional ethics are sometimes seen as immanent in the profession. Such immanence sees them, consequently, as closely tied to personal virtue and can be seen to relate, primarily, to the relation between the professional and his or her clients, patients or customers. As a result, professional ethics leads to a specific kind of behaviour, regarded as characteristic for a specific profession. Although hard to define, certain ways of conduct are often seen among, for instance, physicians and lawyers, giving them a certain kind of authority in the relation with their patients or clients. This conduct may be described as simultaneously emphatic and distanced, and has developed over generations of practitioners. As the range of formalised professions expanded during the late 18th and early 19th century, ethical codes were seen as part of the fabric that defined these practices from non-professional ones. In the wake of the 1800’s Thomas Percival introduced the formal professional code as a way of delivering to professions a means to rely on a virtue based “ethics of honour” at the height of the industrial revolution. During the decades that followed, and into the early 20th century, articulated codes were introduced as new professions emerged, mainly on the basis of successively expanded academic educational programmes. These codes

were often based on a rather vague definition of “ethics” as simply “good practice” or “best practice” in individual professional conduct (Egidius, 2011, p. 162). Codified ethics do in a sense contradict the idea of immanent ethics within a given profession. This may though be a somewhat illusory contradiction, as codes of ethics in most cases are formulations of already accepted attitudes and conduct. For example, ethical norms that appeal to individual character are, according to Redner, related to the “capacity for seriousness” (Redner, 2001, p. 300) which, when codified, works to become a means for defining professionalism in both relational and task-oriented terms. This “seriousness” is part of the backbone that helps to uphold the authority and legitimacy of the profession-based organisation.

Library Ethics

With the establishment of librarianship as a modern profession during the second half of the 19th century, we can locate a point of departure in the development of ideas around how important individual character and “capacity for seriousness” are regarded. The increasing codification of library ethics starts to correspond with the ethical codification occurring within other fields and professions, and should be seen in relation to the establishment of a generalised rationality connected to the ideals of industrialism, with its sharp division between the personal and the professional. As part of the establishing of professional status, there was also the founding of professional associations that became responsible for the formulation of a code of ethics for librarianship¹. The formulation of library ethics also corresponds with the gradual establishment of public libraries, and this is interesting because as they emerge, they represent a completely new form of library institution, with a role in society that is more distinctly socially integrated than are academic libraries (Hansson, 2010; Minter, 2013). Those appointed librarians in public libraries in the USA during late 19th century were, to a large extent, appointed because of their perceived virtues and high moral standards (Garrison, 1979). Comparing the first two American codes of ethics for librarianship, by Mary Plummer in 1903 and Charles Knowles Bolton in 1922, we see in the former a clear connection to an individual virtue based view of ethics, while the latter represents a distinct move towards a perspective that puts the librarian at the heart not only of a profession, but of an organisation as well. Plummer’s code, which was first delivered as a talk at Illinois Library Association in April 1903 and published in *Public Libraries* a month later, may be regarded as perhaps the last outing of the virtue based definition of professional ethics that had dominated American librarianship—and especially public librarianship—during most of the 19th century. It stresses dignity, humility, gentlemanly behaviour and sees library ethics, although not yet codified, as a “debt of honour” for the librarian in relation to both patrons and the profession itself (cf. Knowles Bolton, 1922, p. 138).

1 The American Library Association (ALA) was the first such organisation, founded in 1876.

Presenting the final version of his code in the *Annals of the American Academy of Political and Social Science* in 1922, Knowles Bolton acknowledges the virtue based tradition, but also emphasises the importance of taking it forward so as to repay a debt to the first pioneering generation of American librarians. He outlines how “these canons of ethics stand in the position of counsellor to the younger men and women of the profession, combining worldly wisdom with unworldly ideals” (p. 139). Reading it today, we see far more of the former than of the latter, as the code’s thirty “canons,” or paragraphs, are far more administrative in character than visionary.

Where Plummer puts almost exclusive focus on the librarian as an individual, bringing to the profession a gentleman’s *esprit de vivre*, Knowles Bolton has the organisation, and the profession—in a more general sense—in mind. The canons are divided into four sections focussing on, in order, the librarians relation to (1) the trustees, (2) the library staff, (3) other librarians and, lastly, (4) the public. In distancing the individual from the “higher calling” of the profession, Knowles Bolton also manages to connect librarianship to contemporary social, administrative and organisational trends and developments, stressing rationality and effectivity in the pursuit of professional conduct. This gave the ALA something to build upon in their subsequent discussion of ethical matters, leading up to their first code of ethics for librarians in 1938 and the formulation of a Library Bill of Rights in the same year—in short, Knowles Bolton provided the template for modern librarianship ethics (Preer 2008, 10-14).

In her commendable work *Library Ethics* (2008), Jean Preer discusses the various traits of library ethics during the 20th century and, as a point of departure, she states that all codes of ethics, whether intended for special, academic or public libraries, can be read as a combination of (1) definitions of professional identity, (2) statements of core values, and (3) reiterations of multiple obligations. From there she goes on to advance the view that

While sharing the core values of the profession, their varying interpretations of service, access, conflicts of interest, and confidentiality demonstrate the diverse settings in which librarians work, the variety of materials they preserve and make available, and the different clienteles they serve. (Preer, 2008, 20)

In the following analysis we will use this as a point of departure. Preer provides us with a rudimentary analytical tool that can guide us to historically significant documents on the role of the librarian and the character of librarianship, long before its definition as a profession in a 20th century sense. With no ambition other than putting our argument to test, we will revisit two such documents in two places and eras which in different ways brought significant advances to librarianship as a practice and a profession; Rome and *Ad Decorem Militantis Ecclesiae* (1475), a papal bull from Pope Sixtus IV considered to be the founding charter for the Bibliotheca Apostolica Vaticana, and from Paris where we encounter Gabriel Naudé’s handbook in librarianship *Advis Pour Dresser une Bibliothèque* (1627). Before we look more closely at these documents I would however like to, if ever so briefly, reflect on the character of different document types and their influence on social acts, norms and processes, as described by the concept of “ontological documentality.” It

may help us understand how and when for instance ethical guidelines may be seen for what they are and not as something else.

Documentality and its Relation to Legitimacy

During the last couple of years, or perhaps the last decade, there has been an increasing awareness in LIS research of the significance of not only the structure and organisation of knowledge and information itself, but of the types of documents that confine, both in a physical and formal sense, information. The field of “document studies,” part of which is sometimes referred to as the “neo-documentalist movement” tracing its roots back to the European documentalist movement of the first half of the 20th century, is slowly, but steadily gaining empirical and theoretical ground within the discipline. With it comes a different approach to the traditional user or knowledge organisational problems of LIS (Buckland, 1997; Frohmann, 2004; Lund & Skare, 2010). One of the most interesting theoretical contributions to this research comes, however, not from LIS, but instead from philosophy. The Italian scholar Maurizio Ferraris (2013) has presented us with the concept of “ontological documentality” in an attempt to define the role of the document in relation to certain socially accepted objects and processes.

Fundamentally, ontological documentality suggests that documents are ontologically constituting social acts and social objects, and “ethics” might just qualify as such. Two examples are used by Ferraris to explain how this works. Firstly, *a marriage*, which by way of example cannot be said to exist without a socially and legally accepted certificate. A ring or a verbal agreement simply does not (in most countries or societies) suffice for a marriage to be accepted as complete and legally binding. Secondly, *the nation state*, which in many cases is not socially or ethnically consistent, can only be said to exist when delimited in documents such as a constitution (confirming and affirming that a nation exists in legal terms). Also, with maps, we find that a nation exists in a specific area which also borders areas of other nations. That singular documents (e.g. the marriage certificate) or a combination of various documents (nation state) provide them a constituting or, in the words of Ferraris, “ontological” status, makes it possible to talk of ontological documentality.

For this argument to hold, ontological documentality needs to be closely associated with legitimacy in order to determine which documents are able to attain ontological status (Hansson, 2015). There is hardly ever only one possible document that may formulate a social act or object—an example might be the certificates handed out in so-called “Vegas weddings,” which in a different social order just might be as legally binding as any other certificate. What differs is the level of legitimacy. Combining documentality and legitimacy becomes interesting in relation to library ethics when we find ourselves in a situation where one of the oldest professions in the world suddenly at a certain point in time—1903, 1922 or 1938—starts defining itself in relation to a specific code that prescribes ethical behaviour and conduct within the realm of its professional execution.

As it is reasonable to assume that library ethics has a significantly longer history and is something that has evolved over a considerable period of time, several kinds of documents should have been used to uphold the necessary legitimacy that allows such prescription to take place, and recommend how to behave and prioritise as a librarian. But, what kinds of documents are we then talking about? There are of course many, but some may be said to be of specific interest for us here in characterising a “pre-history” of library ethics: (1) *founding charters* for libraries and instructions to librarians, (2) *peer handbooks* in librarianship, written primarily by prominent librarians, defining the profession from a practical point of view, and (3) *educational texts* developed in direct relation to the emergence of new and increasingly academic levels of education for librarians. These categories are not the only ones, nor are they mutually exclusive; instead we see many that are intended to work in several ways, one of the earliest being Cassiodorus’s *Institutiones* in the sixth century A.D., which is simultaneously a founding charter and a peer handbook in the preservation of manuscripts and the curation of a library (Lerner, 2009, p. 25). In the following section we will, with focus on the formulation of library ethics as defined above by Preer, concentrate the analysis on two examples, representing two types of documents; the founding charter of a library, and the peer handbook.

Library Ethics Before “Library Ethics”

Example 1: Papal Bull *Ad Decorem Militantis Ecclesiae*, 1475²

Looking through the history of librarianship, it is always difficult to establish a “starting point” for specific forms of analysis—we ask the question “when is a librarian sufficiently close to our own understanding of the profession for it to be reasonable to make any proper comparisons.” Several scholars argue that the founding of the Bibliotheca Apostolica Vaticana by Pope Sixtus IV on the 15 of June 1475 might be considered as suitable for such an endeavour. There has been some debate among library historians on whether Pope Nicholas V (1447-1455) or Sixtus IV (1471-1484) should be given credit for the new library and its growth following centuries of diminished existence. Both Nicholas V and Sixtus IV were strongly influenced by the Italian renaissance and its growing humanist movement, favouring a given place for a new library in Rome. However, as Mycude (1981) points out in his analysis of their respective roles in the foundation of the library, Nicholas may be credited with the idea of a new kind of papal library belonging to the Holy See itself and not the individual pope, while Sixtus was the Pope that actually got the library up and running. The principles for the new library and the role of the librarian were written down in *Ad Decorem*, which also marked the appointment of Bartholomaeus Platina as head librarian.

2 The Latin transcript of the bull is taken from *Bibliotekarien: Om Yrkets Tidiga Innehåll och Utveckling* by Bertil Jansson.

The papal bull itself is divided into four parts; (1) an introduction, (2) a practical account for the physical spaces of the library, (3) directions for the head librarian and staff, and (4) a description of the purpose of the library in relation to its users. The introduction situates the foundation of the library firmly within the humanist spirit of the papacy of Sixtus IV. Sixtus describes himself as a patron of humanistic scholarship and, already in the opening words, emphasises that the library not only would have the expected functions for the papal offices and the clergy, but also “...eruditorum quoque ac literarum studiis insistentium uirorum commodum...” the “convenience and honour of scholars and students of letters.” Carmela Viricillo Franklin writes that the bull “points out the Library’s dual mission is to preserve the Scholarly achievements of the past and make them available to new scholars, whose duty then becomes to propagate their benefits among others” (Franklin, 2002, p. 373).

Physically, the library is described as having three rooms in the papal palace; two public and one secret. Of the two public rooms, one holds Latin books and manuscripts and the other Greek, a division common already in the libraries of Roman Antiquity (Casson, 2001). The division into a Bibliotheca Publica and a Bibliotheca Secreta, where stock is open and circulated in the former, while the latter stores the most valuable items safely and out of the reach of the common user, is basically the division that would later mark the difference between the Vatican library and its famous “secret archives.”

The bull then goes on to make its perhaps most radical proposition—the appointment of a position as librarian with a regular income. Thus, “Bartholomeum Platinam scriptorem et familiarem nostrum” was hired as, perhaps, first professional librarian in a modern sense. It was a good choice. He was not only a well-known scholar and humanist in his time (he is known still for his work on papal history), he introduced to librarianship a sense of entrepreneurialism and took an active part in every aspect of running the library and developing its collections. This met the expectations from the pope on the librarian to be both “custos” and “gubernator.”

Lastly, the bull gives directions for which users to serve, and how. The library should serve the public use of *all* scholars, placing it among the first modern public research libraries. Having studied the registers of the library, Franklin notes that users are not only local scholars, but temporary visitors and foreigners as well—the use of the library increases dramatically under the curation of Platina, leading to several modern problems such as trouble getting the books back in time—this however was already predicted in the bull promulgating “sub excommunicationis pena,” if the books were not returned whole and on time.

Is it then possible to read *Ad Decorem* also as a document charting certain professional ethics? It is a historically unique document and, short as it is, it has become a point to which it is possible to return in search of the essence—if indeed there is any such thing—of modern librarianship. So, let us have a brief look at it through the eyes of Jean Preer who suggests that documents formulating library ethics prescribe professional identity, core values and multiple obligations on behalf of the librarian (Preer, 2001, p. 20).

First of all, it is important to remember that this document is not written by a librarian—it does not evolve (as far as we know) from discussions involving librarians and it is not

intended to be prescriptive in relation to any library other than the Bibliotheca Apostolica Vaticana—still, it has been referred to by librarians as a “general” prescription over the centuries that followed. Professional identity is clearly defined in that Platina is appointed both “custos” and “gubernator” of the library. This indicates the papal intention was to give the librarian full responsibility for, not only the curation and preservation of manuscripts and books, which earlier had been the prime task of anyone working in a library, but also for the running and development of the library in a more administrative sense. That the bull complements the traditional “custos” with the more progressive “gubernator” renders the librarian in a unique position in relation to the Holy See and the Pope himself, he is as a highly trusted professional, best suited to decide what is best for the library.

Furthermore, *Ad Decorem* formulates a core value of the library—and thus librarianship—as being in the service of scholarship. In formulating this, Sixtus IV bridges the divide between divine truth and human pursuit of knowledge in a previously unseen manner. The importance of this must not be underestimated as this alone presents the appointed librarian with a vision of the library as an institution representing a clear core value to humanity. The practical obligation which follows from this is the demand for specialised services to scholars, even those that can be described as “tourists in Rome” (Mycue, 1981, p. 126). This requires what we today would describe as “open access” to collections through professional conduct, resulting in, for example, tools such as relevant catalogues, classification schemes and user registration practices that match the core values and required mission of the library. This said, it is now time to move on to our second example—one which has influenced librarianship up until today.

Example 2: *Advis pour dresser une bibliothèque* (1627, revised 1644)

Our second example of a document of major influence and professional legitimacy is *Advis Pour Dresser une Bibliothèque*, by French librarian and scholar Gabriel Naudé (1600–1653). It can almost be described as the opposite to *Ad Decorem*; where *Ad Decorem* is a formal document, *Advis* is a highly subjective account; where *Ad Decorem* is building a bridge between the religious and the secular, *Advis* rejects the former and advocates secular knowledge, science, as the foundation for the modern library, and where *Ad Decorem* takes general principles and adjusts them to one library, *Advis* takes departure from one library and expands its curation to general principles for professional librarianship itself. However, there are also things that bring them together; foremost among these is that they are both, in relation to their own times, ideologically progressive. The view that Sixtus IV had of his coming library was influenced by the Renaissance and its devotion to the classical—something that is reflected in the imitation of the libraries of Roman antiquity. *Advis* also represents a turn in the history of ideas, as Naudé quite eloquently describes in his analysis of the library of the new modern, scientific era of the early 17th century. In that sense his little handbook breaks with Baroque ideas on libraries and librarianship in favour of a more pragmatic view inspired by, among others, Seneca and Francis Bacon. Furthermore, both documents represent progressive views on the library users of their time.

Advis Pour Dresser une Bibliothèque was not the only peer handbook of its time. On the contrary, several were published during this époque—most notably perhaps Conrad Gesner's *Bibliotheca Universalis*, first published in 1545, and Claude Clement's *Musei Sive Bibliothecae tam Privatae Quam Publicae...* from 1628. The latter of these has been described and compared to *Advis* in an erudite essay by Mathilde V. Rovelstad (2000) in which the progressive nature of Naudé's writings becomes very clear. She describes what may be seen as the key also to our analysis, and perhaps the most important difference between the two as how the attempt

[t]o establish principles to facilitate the beneficial use of a collection was, therefore (for Naudé), an essential step to transform the ornate Baroque library, the Schaubibliothek and representative monument of the court culture of the Baroque, to a library for active users, the Gebrauchsbibliothek. (Rovelstad, 2000, p. 549)

Dedicated to his employer, Henri de Mesme, counsellor of state, at whose private library Naudé was appointed, *Advis Pour Dresser une Bibliothèque* is a practical guide on how to run a library. As such it is fairly uncomplicated with chapters on what books to buy, how to make acquisitions, how to organise the library, how to decorate and furnish it, and how to increase its use. The search for professional ethics in the text must by necessity take us looking for formulations through the whole book. Searching for a specific professional identity, it is clear that Naudé's librarian is a rare combination of erudite scholar and hard working administrator. Librarianship is described as a practical profession which includes ominous travels for acquisition and the development of a catalogue—two in fact; one with subject entries and one with author entries. The librarian takes full responsibility for the development of the library, and leaves to the owner, first and foremost, the issue of funding. As the librarian is critical of the contemporary trend of funding sumptuous libraries with expensive books that may or may not actually be read, he assures his employer of the value for money of his more Spartan ideals, even though he raises a finger of awareness

Combien que ce ne soit pas aussi mon intention de vous persuader que ce grand amas se puisse faire sans frais ni bourse deslier, sachant bien que le dire de Plaute est aussi véritable en cette occasion qu'en beaucoup d'autres, Necesse est facere sumptum qui quaerit lucrum. (Naudé, 1644/1994, p. 18)³

This is actually one of the most important points of the whole treatise—that funding is provided by the owner of the library, but decisions on practicalities and the organisational running of the library is left entirely to the librarian. Through this, the professional librarian is defined in two directions—towards the collection and its organisation, and towards the users of the library.

The main part of *Advis* is dedicated to discussions on the content of the library, both in terms of what to buy and how to organise the collections. In doing this Naudé is, step by

3 Quotes are taken from the facsimile of the 1644 edition of *Advis* published by Klincksieck in Paris in 1994. Pagination is therefore based on the original.

step, formulating one of the core ethical values that have prevailed in the profession ever since—the importance of acquiring materials that go beyond the mainstream opinions or scientific agreements. The argument is simple enough; there is seldom complete consensus and looking through history, several of the ideas that have brought us truly new knowledge have, at some point, been dismissed or even persecuted. Uncomfortable books and books that advocate “unuseful knowledge” have their place in the library simply because different users have different tastes. Contrarian books are needed to make up the whole within which all new knowledge must be seen:

...deussent-ils estre parmy les autres livres d’une bibliotheque, comme les serpens & viperes entre les autres animaux, comme l’ivroye dans le bon bled, comme les espines entre les roses; & ce à l’exemple du monde où ces choses inutiles & dangereuses accomplissent le chef-d’œuvre & la fabrique de sa composition. (Naudé, 1644/1994, p. 52)

This should not just be read as practical advice on diversity, but as a strong statement against censorship. Naudé’s position among the French intellectuals of his time was central and even though he is perhaps not the first name that comes to mind when speaking of the *République des Lettres*, he was right there in the midst of it and a fierce defender of the idea of—in relative terms—the free thought that characterised it.

What might be described as the second core value of librarianship that comes through in *Advis* is one of service and in the mind of Naudé this is combined with the very reason for establishing a library at all. Although there of course were numerous very large libraries in the 17th century, there were extremely few that were open to any kind of defined “public.” Among these, the most famous are perhaps the Biblioteca Ambrosiana in Milan which opened its gates to the public in 1604, the Bodleian Library in Oxford (in 1602), and the Bibliotheca Angelica in Rome [in 1609] (Rovelstad, 2000, 546). These were however designated to very specific user groups, but the kind of public that Naudé wanted in his library was of a more unrestricted kind. On the very last pages of the treatise, he discusses users and to high degree both society and the library owner will benefit from openness, even to those not previously known to the owner, people of the public “totalement incognus” (p. 160). In this sense Naudé may be seen as one of the first to advocate a public library in a more modern understanding.

Conclusion

The primary task in this essay has been to discern whether it is possible to speak of a consistent form of professional ethics in librarianship before the 20th century emergence of formal ethical codes, here exemplified by one of the first—and definitively the most influential—by Charles Knowles Bolton. By two examples from the 15th and 17th century, we have seen that it is probably possible to see a consistent string of professional ethics, but that we cannot argue that they are in any way “immanent” in the profession. Rather

they show that they are dependent on intellectual and cultural movements, or specific points in time, where the need to define the practice of librarianship and the character of libraries themselves have emerged. Furthermore we took a point of departure in the recent document-oriented discussion in LIS, referring to the idea that social entities and acts are constituted by certain kinds of documents, if not ontologically so in terms of how they attribute legitimacy.

The documents that have been discussed here all have a kind of constituting character and most definitively a legitimising one. It is hard to conceive of a more authoritative document than a papal bull in the latter half of the 15th century. It is therefore interesting to see how well *Ad Decorem* formulates the library against its contemporary and previous conventions, addressing a much more active and reflexive professional role for the librarian who is assumed to, within the given confines of the Holy See, be the one who is best suited for developing the library, both in terms of administrative organisation and collections. The idea of the quiet, curating “book worm” librarian is refuted and in front of us stands an active, even “entrepreneurial” professional who is set to develop a collection of books and manuscripts into an institution in the service of religious and profane scholarship.

The character of this task is given not through contemporary conventions of the profession, but through the document *Ad Decorem* which through its indisputable authority brings legitimacy to an ethical formulation of librarianship as a profession. We do not have many other documents in library history with a more clearly defined authority than *Ad Decorem*, and that may be one of the reasons why it is still remembered in the 17th century, not least by Gabriel Naudé, as a source of inspiration for renewing the idea of librarianship. In that completely different environment, with printed books having become the dominating document form, influence and authority depended much upon the ability to distribute the document in the right circles. *Advis pour dresser une bibliothèque* was widely read and recognised for its progressive potential already during Naudé’s own lifetime. The ethical legitimacy comes not only from the content, but from the fact that peer handbooks, often dedicated to employers, created a way for librarians to motivate their employment—much as court composers legitimised their presence in a court through their music. This genre took a new turn with Naudé’s document in that it treated his own appointment as a general example for librarianship as a profession. The composition of *Advis* is far less respectful and more demanding for the employer than the average handbook of its time. By showing professional integrity in the midst of the *République des Lettres*, Naudé paved the way for renewal and progression.

So, finally, can we through these two very different example say something about the consistency of professional ethics for librarianship? In answering that we may note two issues that stands out more than the others; (1) openness to a variety of content and (2) the relation to users.

The fact that *Ad Decorem* advocates room for secular knowledge means that librarianship, for perhaps the first time, is defined as a profession that not only represents but actively works to establish and build intellectual pluralism in order to make the library as usable as possible for a variety of users. The fact that the librarian is put in charge of

judging quality and benefits of various forms of documentary expressions is pivotal in the early formulation of professional ethics. A similar position is formulated in *Advis*, as Naudé not only advocates pluralism, but actively argues for the necessity of acquiring literature and documents opposing the positions of not only mainstream aesthetics, politics and religious beliefs, but of taste and reason as well—all this in a time that was the first to acknowledge reason above all else. Thus, both documents claim and provide legitimacy to what would become the cornerstone of library and information ethics; free speech and freedom to information. In some sense, both *Ad Decorem* and *Advis* are more clear on this point than, for instance, Knowles Bolton who described the issue of choice as problematic.

The second ethical issue that we see in these documents is the demand for service towards the user. Both *Ad Decorem* and *Advis* are fiercely rejecting librarianship as simple curation of secluded collections, favouring a profession in direct and active relation to users, defining them in much more general and “public” terms than customary in their respective times. We have, as Mycue (1981) has shown, proof that even temporary visitors and “tourists” had access to the Bibliotheca Apostolica Vaticana under Platina. Naudé too advocates a library that is open to “complete strangers,” and formulates the duties of librarianship from thereon. One consequence is that the arrangements of the collections must be constructed so that they can meet any demands from the users. No part of the collection should, without reason, be secluded. In the Vatican Library this was solved through the division of a public and a secret part, which were clearly separated.

We could go on finding more issues of professional ethics in these documents, and we could extend the analysis to include more examples of documents through history, but for now we will rest the analysis here. We should take into consideration how formal codes of professional ethics are only one type of document that carries prescriptive authority, and looking at the situation today, we must allow ourselves to go beyond these and ask what other kinds of documents can claim legitimacy for ethical pronouncement in librarianship. In the increasingly complex development of digital documentality, what will this do to professional ethics? Will the relation between professional practice and formal codification change? If there indeed is such a thing as “ontological documentality” in relation to library ethics—how will this be possible to define in the future?

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Ethico-Philosophical Reflection on Overly Self-Confident or Even Arrogant Humanism Applied to a Possible History-oriented Rationality of the Library and Librarianship

Vesa Suominen

Abstract

René Descartes, the early French father of modern philosophy, looks like the “postmodernist’s bogeyman” (Guss, 1991, p. 1156) within library, information, and documentation (in continuation, LID) studies. Now and then, we can see somehow routine-like, “by the way” style remarks on Descartes as the source behind fallacies of what is called modern. The understanding of Descartes’s own thought seems often not so thorough, but the verdict can be severe and straightforward. Being a “Cartesian” seems to mean that one is hopelessly wrong. My thematic in this chapter is a somewhat provocative claim of an analogy between particular themes with Descartes and the German hermeneutician, Hans-Georg Gadamer. There is some irony here, since typically these two philosophers appear to represent quite opposite positions. Then again, the basis of my claim of analogy consists of one particular, though not so insignificant remark on both sides. In general terms, we can find with both Descartes and Gadamer a claim that we can never exhaustively conceive of the foundation of our capacity to know and understand anything. Consequences of this in this essay are ethical by nature: if we cannot conceive of the foundation of our knowledge and understanding, an overly self-confident attitude could approach arrogance. I shall elaborate it with a reference to a possible formulation of the particular rationality of the practice of the library and librarianship. Within this conception of the rationality of the library and librarianship, there might be some Cartesianism. In spite of this, however, the conception could find a foundation of legitimacy if we considered the analogy that I am going to claim between Gadamer and Descartes.

The Rationality of the Library and Librarianship: About *Scriptum Est* with a Foundation in Gadamerian Hermeneutics

In this section, I give outlines of a notion and rationality of the library and librarianship, which will be the basis of my argumentation here. Before going ahead, however, I must emphasise that I am here talking particularly about the rationality of the library and

librarianship in the sense that I aim to answer a question that we could have while maintaining a library, instead of the possible historical or sociological questions of why there are libraries, why they have evolved as they have.

I will start by specifying what the library contains via the notion of literature used in a specific way. Literature can be conceived of as a process or a social system producing literary products; products that I shall denote here by the concept of *scriptum est*. I have taken the term *scriptum est* from the Bible, where we frequently see things happening as “it has been written” (*sicut scriptum est*) where what has been written is used as a kind of explanation for something that happens (*enim scriptum est*, for instance). I find this metaphoric use of this biblical expression plausible, since the use of the expression in the Bible seems to imply that what has been written actually matters. This, in turn, is one of the corner-stones of the conception of the rationality of the library and librarianship that I am suggesting. *Scriptum est*, in turn, would be a part of documentation, the latter meaning here the products that documentation as a process in the sense of the so-called neo-documentation movement (see Lund, 1999) has produced. The specific feature of literature and *scriptum est* as a part of documentation would be that documentations and works combine there. This way to specify the notion of literature results in quite a broad conception of it. *Scriptum est* produced by the process of literature can be in a literary sense literary, but it can be also music, films, or images, for instance. Further, the modes of documentation can be various. Documentation can be in analogical or digital, hand-writing or printing, etc. It can be hand-writing or printing on surfaces like papyrus, parchment, or paper, but digital forms as well would be documentation. For music or pictures, either still or living, there can, of course, be similar alternatives on the material and technical levels.

The work is the particularly open and even problematic constituent of my notions of literature and *scriptum est*. It is easy to claim that the 5th *Symphony* of Ludwig van Beethoven, even a performance of it by Berliner Philharmoniker conducted by Herbert von Karajan, and *War and Peace* by Leo Tolstoy are works. Further, it could be easy to say that a railway ticket, a text message sent by a mobile phone, or a tweet on Twitter is not a work, not at least in the same sense as the clear instances I mentioned, but they also could be documents. Then again, there certainly can be other instances where we indeed have to ponder whether we can or cannot talk about *a work*. Such could be postings in different forms of so-called social media or an ad hoc poem, hand-written on paper to be performed just once in some banquet and then thrown into the wastebasket. We perhaps should accept that a piece of *scriptum est* can be, more or less, “workish,” but I also see as beneficial the very fuzziness of the notion since it gives us space for practical considerations while maintaining some particular library. In particular instances, we may quite well consider what could be the appropriate scope of the notion of work there. We could have a special library of Facebook postings, for instance, even if such postings might not qualify as works while thinking about more typical instances of the library and librarianship.

My ultimate aim while suggesting the above notions of literature and *scriptum est* as the foundation for conceiving of the library, in any case, is to limit somehow the scope and even the responsibilities of the library and librarianship to a somewhat more reasonable

and realistic, but still culturally and socially significant, scale. I find it delusional to assume that the library could take some responsibility for all documents in the widest sense of the notion, or of all the possible messages that there are. Such an audacious project could even be counterproductive if we were to recognise and have responsibility for some parts of documentation that actually matter on the cultural and social levels. In view of the problems of defining the scope of literature and particularly the notion of work, it could be helpful to think in plural terms about literatures: scientific literature (or even more specifically for example literature of physics); fiction; non-fiction that gives general education or practical advice; and literature which comprises administrative publications, for instance.

The particular responsibility of the library would be that it is about literature and *scriptum est* in the sense of preserving *scriptum est* and maintaining and cultivating in our social and cultural life awareness of its reality. In this sense, and a little roughly since with the variety of *scriptum est* that there can be in a library it is always the product of the past, the task and responsibility of the library would be to “tell the truth” about a particular part of history (conceived of as a reality that there has been in the past). Maintaining and cultivating of awareness would particularly be the task of what I would call bibliographic librarianship, using the notion of bibliography in a wide sense of knowledge about what literature has produced. In this sense, I can characterise my notion of the library and librarianship as literary and bibliographic. The core of my notion of the library about *scriptum est* is that the content and even substance of the library is what the literature has produced, and the responsibility and maxim of the practice of the library and librarianship is to tell the truth about *scriptum est*, which it can do in many ways, through its collections and content as well as through its bibliographic work.

Thinking about the rationality of the library and librarianship as suggested above could find a part of its justification from Gadamerian hermeneutic, particularly from the thematic of “rehabilitation of authority and tradition” there (see Gadamer, 1960/1972, p. 245 ff.). Gadamer’s fundamental claim there is that in our being and in all of our understanding and knowledge, we are in a most profound manner tied to traditions and history. Our being as humans and our understanding and knowledge are all in an essential sense participation in traditions. Gadamer (p. 245) writes somewhat dramatically, “In fact, history does not belong to us, but we belong to it.” Our belonging to history and even our being made by that history, however, is not being there in a passive manner only, and the active role of humans as the makers of history is present in Gadamer’s notion of “effective history” [*Wirkungsgeschichte*] (see Gadamer, 1960/1972, p. 267 ff., p. 284 ff.). The idea of effective history, in simple terms, is that we are—in quite a fundamental sense—made by the history, but thereafter, however, we are making the history as well.

In view of our thematic here, in any case, the noteworthy consequence of Gadamerian thought is that one has good reason to heed history and tradition in terms of “what the history has handed down to us” [*Überlieferung*] (Gadamer, 1960/1972, p. 264). *Scriptum est*, as it can be in, and taken care of by the library and bibliography, obviously, does not actually equate with the Gadamerian notions of history and tradition. The latter is a living process, while the former is only a “dead” product. Then again, we certainly should assume

that *scriptum est* has to do with, and perhaps could be seen as a constituent to, history and tradition in the Gadamerian sense as well. The specifics as well as problems of, and within this, will be discussed below.

A consequence of the above is that the library becomes justified in its focusing on *scriptum est* as founded in Gadamerian thought in the sense that in *scriptum est* we have reason to heed history and tradition as handed down to us. The specifics of such will be outlined below. This foundation, furthermore, would be quite fundamental, since we may say that what Gadamer here is depicting is an existential condition. Our being, in quite a fundamental sense, would be *being since the past*, and *we all start in our turn something that already is there* (cf. Suominen, 2007). In addition to this, our belonging to history and the hermeneutics of listening to the traditions, as we perhaps could summarise Gadamer's thought is the foundation of both common rationality and any communication among people. While using morals as an example, Gadamer emphasises that tradition contains the basis of its validity, and what is a basis of validity is obviously the basis of common rationality, rational dialogues, etc. Here we can see how a library about *scriptum est* could intelligibly also be a library on behalf of *scriptum est*. What history has handed down to us really matters; we have a good reason to listen to it, and the library has a good reason to remind us of it.

Here, however, we also approach the point where a tension appears between my notion of the library and librarianship about *scriptum est* and Gadamerian thought. With Gadamer, the idea is not that we should know about history or traditions. Rather, we could and should know and understand whatever we wish to know and understand through a dialogue with what history has handed down to us, with traditions as well as language, the latter of which is, in a sense, the most universal level of humanity, the "Being that can be understood is language" (Gadamer, 1960/1986, p. 432). This also is the reason for my hesitations above when defining the relationship of literature and *scriptum est* to history and tradition. Gadamer quite categorically rejects what he calls "historical objectivism" or (romantic) historicism (*Historismus*), denoting with these concepts exactly the view that our task is to know about history. Historicity (*Geschicklichkeit*) in turn, for Gadamer, refers to one's living, participating relationship to history. Gadamer claims that one should recognise the historicity of one's own being, instead of focusing on the past in the vein of historicism or historical objectivism. (See for instance, Gadamer 1960/1988, pp. 266-267, and Gadamer 1960/1972, p. 283). In this respect, Ivar A. Hoel (1992, p. 70) indeed has a Gadamerian foundation for answering negatively his question of whether "library and information science (LIS) is by nature historical," since "information passed on by a library or information system is inevitably a record of knowledge that is from the past." By this answer, however, he rejects exactly the conception of the library that I am suggesting here.

We can further see how Gadamer's criticism of historical objectivism or historicism has a dual meaning. Hans-Helmuth Gander concisely formulates that "reconstructing the intentions of the author out of a text, as something transcending the text, is for Gadamer neither reasonable nor possible" (Gander, 2004, p. 133). The claim of impossibility of such a pursuit, however, could turn into a methodological reservation that possibly leaves us with

some options to reconstruct even authorial meanings on some level of accuracy, after all, if only we had some reason for such an effort. In my view, the salient part of Gadamerian logic would then be questioning and even denying the very sense of the pursuit that Gadamer characterises as historicism. In this respect, I could say that Gadamer's position is quite correct as far as we hold to Gadamer's strict notion of hermeneutics and its rationality. The case could be different, however, if we took into account wider spheres of rationalities, which we can find within the spheres of political life or morality and justice, for instance.

Preliminary Answers to Cartesianism—Critical Remarks

As a rather typical as well as explicit example of criticism on Cartesianism within LID-studies, John Mingers outlines a whole sequence of general theoretical positions within the field of research. According to him, such positions are gradually overcoming the Cartesian "mind/body dichotomy," the "Cartesian representationalism based on a split between mind and body, and a model of cognition as the processing of representational information" (Mingers, 2001, p. 104).

Mingers's argument can be linked with his interest in a relatively technical thematic of information systems. Yet, there have been similar critical references to Cartesianism within LID-studies in the context of even more substantial questions as well as of the variety of intelligible ways of conceiving of the constitution of knowledge. We can find reference to "Cartesian dualism" in the arguments made by Kimmo Tuominen as well. The argument begins from opposition to what he calls "dialogism" and "monologism." He first writes, in a Cartesianism-critical tone, "In monologism, the individual is held to be a Cartesian cognising subject, a self-disciplined monad or atom," thereafter continuing:

Therefore, the monologic self is viewed as an independent and unique source of the meanings it has created. ... The individual is the knower, the learner. Knowing is something internal, it is a subjective process. Knowledge, on the contrary, consists of objective universal facts. However, monologism is historically and culturally specific theory of a human subject, not a self-evident universal fact....As opposed to monologism, dialogism stresses the intersubjective nature of language as a social system. According to dialogism, we produce and organise social reality by talking and writing. Dialogism assumes that knowledge is something people do together rather than an individual possession. (Tuominen, 2000, p. 3)

The so-called "Cartesian split" of mind and body—or of *res cogitans* and *res extensa*—is the place where objectivism-critical argumentation tends to culminate, and in many cases, it also stops there. This "split," or the dualism of mind and body with Descartes, however, is not as rigid a division of everything in two absolutely separate spheres as it might appear in critics' texts. Descartes especially—albeit shortly and as if in passing—writes that the mind is not in the body like the captain in a ship ("...il ne suffit pas, quelle soit logée dans le cors humain ainsi qu'un pilote en son navire"). Rather, the mind and body are "more closely united" [*jointe & unie plus estroitement*] (Descartes, 1637/1658, p. 59). Descartes certainly

has some reason to make such a remark, which could tell us something about what he intends and what he does not intend to say by his distinction of *res cogitans* and *res extensa*.

Within Descartes's thought, in any case, there certainly is a fundamental dualist structure, and one should not ignore it. Rather, it would be important to notice that the dualism in his thinking is a much more fundamental matter and is present in several instances and on various levels. In addition to the distinction of subject and object, mind and body, or *res cogitans* and *res extensa*, the dualism actually goes inside the subject, inside the *res cogitans* itself, as the dualism of ideas of understanding (*entendement, intellectus*) and judgments of the will [*volonté, voluntas*] (Descartes, 1647/1978, p. 32). Here we should note how critics of Cartesianism within LID-studies, for example Olof Sundin and Jenny Johannisson (2004, p. 26), specifically refer to Cartesian dualism particularly on this level. In any case, the distribution of dualisms on these various levels actually changes the whole scenario if compared to the most typical view of the "Cartesian split." Even the "I" in the sense of *res cogitans* divides in two and this time, all is within the mental, thus actually leaving aside the whole dualism of mind and body.

Further, the ultimate foundation of our capacity to know with Descartes is the "third substance," God, or—to use an expression of Lucien Laberthonnière, a representative of the Catholic philosophy in France in late 19th and early 20th centuries—the "object up there" (*l'objet en haut*). In this sense, dualism widens into "triadism" or "separatism," once this "third substance" the "object up there," has complemented the dualism of the subject or *res cogitans* and the *res extensa*, the latter being in Laberthonnière's terms the "object down there" (*l'objet en basse*)¹.

With Descartes then, the third substance—God or *l'objet en haute*—is also the foundation of our capacity to know whatever we may know about *l'objet en base* as well. It is also the basis for the possibility of community and communication, and in this respect, there indeed is exactly what Gadamer—for a good reason, I think—is criticising. The foundation of the possibility to communicate with each other indeed would be "connaturality," quite explicitly with Descartes (cf. Gadamer 1960/1972, p. 277). Knowledge according to Descartes, in any case, consists of will's judgements on the ideas of understanding (see, for instance, Descartes, 1637/1658, p. 39). In judging, the will works upon the ideas of understanding and has to lean on another kind of the ideas of understanding, the so-called *communes notiones* and the natural light of reason (*lumière naturelle, lumen naturalis*). We can know by means of the natural light of reason, as we can trust our capacity to know, "once situated in us" by God [*lumine quidam in nos insito*] (Descartes, 1701/1965, p. 383).

We can find, in quite concise form, the foundation of Descartes's methodical and epistemological thought in the sixth rule of *Regulae*. Even if within the canonised divide between rationalists and empiricists in early modern philosophy, one counts Descartes as a "rationalist," there is an odd kind of "inner empiricism" present in his thought. According to Descartes (1701/1965, p. 382), the "secret of the whole art" ("*totius artis secretum*") is that we pursue what he characterises as absolute ("*vt in omnibus ... maximè absolutum*

1 See Laberthonnière (1935, pp. 5-9).

diligenter advertamus"). *Absolutum*, in turn, means instances where we can see the truth or "*naturas puras & simplices*" that "*licet intueri*" (Descartes, 1701/1965, p. 383). With Descartes, intuition is the capacity of recognising what we cannot doubt, and in this sense, it is the foundation of all rational reasoning and deduction, the capacity of taking the "self-evident steps," the "uninterrupted sequence" of which constitutes deduction (see Beck, 1952, p. 48). Instead of a romantic holistic vision going beyond what orderly reasoning can achieve, the Cartesian notion of intuition refers to the smallest "steps" of which any orderly and logical reasoning consists.

This is quite a crucial aspect. Among other things, it has to do with a certain psychologism within the Cartesian view of logic and his method of evidence, an aspect also strongly criticised by his successors, including Leibniz. In a sense, however, this psychologism has quite an indisputable foundation: only a mind that has the capacity to recognise the truth can recognise it, and even then, one should prepare one's mind for this. This, however, reduces logic to evidence in view of a properly prepared mind and thus ultimately psychologises it. Then again, as Leslie John Beck (1952, p. 63) summarises, "...ultimately the mind, face to face with the fact, can only recognise the fact to be so; truth in the last analysis is its own evidence."

In the discussion above we saw how Tuominen argues in terms of the opposition of "dialogism" and "monologism," the latter manifesting the Cartesian style of thought. At this point, however, we can see how suspicious it is to characterise Descartes's view of knowledge as "monologism," since what actually is characteristic of it—in terms of the several dualisms that there are one inside another—is the dialogue between understanding and will, and between ideas and judgment. We can find further confirmation for understanding the Cartesian view of knowledge as particularly dialogical from a distinction that Descartes makes between two methods that he calls analytical and synthetic, with his preference of the former, the latter meaning the *modo axiomatico* or *modo geometrico* which otherwise was so characteristic of rationalist thought of 17th century. Formally, we can express the opposition of these methods as opposite orders of the same elements in two sequences. "The *analytic* process proceeds then in successive movements of *enumeration*, *deduction*, and *intellectual intuition*; the *synthetic* process proceeds in successive movements of *intellectual intuition*, *deduction*, and *enumeration* (Beck, 1952, p. 175). With Descartes, the analytic method is "essentially a means of discovery of truths," while "method of synthesis is chiefly a means of explication of and demonstration of whatever is already known" (Beck, 1952, p. 176), perhaps for an opponent that is too stubborn to understand and agree without such compelling demonstration.

I must admit that Tuominen's criticism of monologism as well has a justification, as does Capurro's (1992, p. 87) characterisation of the "modern presupposition of subjectivity" as a "psyche-capsule" (as far as we can take it as a Cartesianism-critical notion). We may say that the dialogue where the will judges, either accepting or rejecting ideas of understanding, is still a dialogue within a single subject aiming at knowledge. The dialogue of will and understanding certainly is very much an inner dialogue. The distinction of methods made by Descartes and his preference within this distinction already partly—though

only partly—crosses the boundaries of an individual thinking subject, since there the issue already is how we should present our thought to another and how we can appeal to something that we can assume to be common to both parts of the dialogue. On the other hand, the foundation of this option to appeal certainly and quite literally is what Gadamer (1960/1972, p. 277) critically characterises as “connaturality.”

Among the critics of Cartesianism within the various branches of cultural and social studies it is worth noting the exceptional care with which Richard Bernstein reconstructs Descartes’s thought. And yet his deployment of the concept of “Cartesian anxiety” is a somewhat shallow characterisation of Descartes’s search for a secure foundation of knowledge, the “Archimedean Point”:

With a chilling clarity Descartes leads us with an apparent and ineluctable necessity of a grand and seductive Either/Or. Either there is some support for our behind, a fixed foundation for our knowledge, or we cannot escape the forces of darkness that envelop us with madness, with intellectual and moral chaos...this underlying Cartesian Anxiety still haunts us and hovers in the background of the controversies waged by objectivists and relativists. (Bernstein, 1988, p. 18)

The “Archimedean point” with Descartes, according to Bernstein, could be either *cogito* or even God.

We know that Descartes claimed to have discovered something that could serve as a foundation upon which we could construct a “firm and permanent structure in the sciences.” It is less clear what is the Archimedean point in Descartes’s philosophy—whether it is the *cogito* or God himself. (Bernstein, 1988, p. 16)

It is probably worth outlining here reservations as regards Bernstein’s characterisation of a philosophy seeking an “Archimedean Point”—even if Descartes himself actually uses the metaphor (*Meditations on First Philosophy*). A consequence of questioning this is that we also can ask whether Bernstein’s characterisation of an “Either/Or-anxiety” would be so accurate.

Even if Descartes talks about the indubitable truth that we can recognise in and with the help of “*naturas puras & simplices*,” there remains the option of errors as well, due to the finitude of human understanding. Our errors as well have their origin in the distinction of will and understanding. We can err, as our will can be too hasty to judge in cases where our understanding is not sufficient. No one probably wants to err, but our will actually makes us err (“*encore que nous vueillions jamais faillir, c’est neantmoins par nostre volonté que nous faillons*,” Descartes 1637/1658, p. 42). That we can judge even while not understanding properly and thereby err is the result of our liberty or *liber arbitrium*: we can judge even without having sufficient understanding. The will can be free only in this way, since it is the essence of freedom that it has no limits, according to Descartes. On the other hand, however, will is not absolutely apart from understanding. Descartes writes how clear understanding can create an inclination in will to judge accordingly and thus avoid error (“*Ex magna luce in intellectu sequitur Magna propensio in voluntate*,” [Descartes,

1644, p.116]). Yet, the option of error remains with a human whose understanding, after all, always remains finite.

Neither Conceiving of God Through Thought, Nor Expecting History to be Transparent

Ultimately, with Descartes, God would be the basis of knowledge, and knowledge, in turn, would require the possibility to make judgments. Descartes, however, quite explicitly remarks that our knowledge about God differs from the rest of our possible knowledge. We can know but not conceive of God, because conceiving of is to embrace by thought while for knowing a thing is “touch it by thought” is enough [“... *car comprendre, c’est embrasser de la pensee; mais pour scavoir vne chose, il suffit de la toucher de la pensee*”] (Descartes, 1630/1969, p. 152).

Continuing still with Gadamer, I would pay particular attention here to one particular remark by him, namely his commentary on the Hegelian idea of history becoming transparent. I take here no responsibility for Gadamer’s understanding of Hegel. Gadamer’s commentary, in any case, may be truly illustrative of his views.

That we should become completely aware of effective-history is just as hybrid a statement as when Hegel speaks of absolute knowledge, in which history would become completely transparent to itself and hence to be raised to the level of a concept. Rather, effective historical consciousness is an element in the act of understanding itself and [...] is already operative in the choice of the right question to ask. (Gadamer 1960/1972, p. 268)

What Gadamer is here trying to deny is the illusion that a human could conceive of him/herself comprehensively, which obviously excludes also comprehensive conception of the rationality of history that has made and is inside him or her. There can be an awareness of the effective historical situation, but never a complete understanding of what the actual content of it is. “To exist historically means that knowledge of oneself can never be complete” (Gadamer, 1960/1972, p. 269). This is exactly the claim, an analogy to which I shall refer to below with reference to Descartes, where it plays out in terms of our incapacity for completely conceiving of God, rather than of history.

Along the same lines is directed Gadamer’s claim of “the place between strangeness and familiarity” as the “true home of hermeneutics” as well as his notion of “hermeneutical experience.” While introducing the latter notion particularly, Gadamer once again explicitly aims at distancing himself from Hegel (see Gadamer 1960/1972, pp. 262-263).

We could think that Descartes’s way of excluding conceiving of God is substantially analogous to Gadamer’s claim that history can never become completely transparent. It is worth noting though that only some of the threads of thought of Descartes and Gadamer intertwine with the analogy that I propose and there certainly is plenty of difference (and even controversy) between the two strains of Gadamerian and Cartesian thought. While

characterising Gadamer as a Cartesian is problematic, we can best approach (illustratively) the analogy that I have made through thinking about the instances of arrogance against which the restrictions on humanism—which both of these philosopher's approaches might be characterised as advocating—could protect us. In the case of Descartes, the situation perhaps is intuitively clearer and more convincing.

In the case of Descartes, if we think what the notion of God could mean, it also is rather easy to think that a human should not pretend to have very complete understanding of what the will of God is, what the divine plans actually might be, etc. Compared to claims of conceiving matters such as the divine will and plan, it might not seem similarly arrogant to assume that one could know, understand, or completely conceive of the sense of history, so to speak. Between humanism and religious or theological thought, of course, there is some tension, to say the least, and consequently, it is not so easy to see how religious or theological notions could confine humanism in a way that a humanist could recognise. Gadamer, however, is a humanist, “dyed-in-the-wool,” we perhaps could say. Then again, if we were only able to consider an inner logic within the thought of Descartes and read it as a suggestion of what our ultimate existential condition could be, we can see there in a most convincing form the same idea that we find with Gadamer, this time formulated on a purely secular level. The notion of an existential condition could constitute commonness between otherwise quite different modes of reasoning. In this sense, the structural and logical analogy that there is between Gadamer's rejection of the option that history could become completely transparent, on the one hand, and of Descartes's claim that we cannot embrace or conceive of God, on the other, is most interesting, and there could also be some substantiality as well in the analogy.

Returning to the dialogical conception of knowledge with Descartes, we can further elaborate the analogy, particularly since dialogue certainly is quite a crucial part of Gadamerian thought as well. We could say that with both of them, our knowledge and understanding would be the result of twofold dialogues, as judgments within a dialogue between two “givens,” namely (i) we in particular instances are judging and (ii) the foundations of our judgments. With Descartes, the latter would be that which God whom we cannot embrace or conceive of has given to us. With Gadamer, it would come from the history, which never can become completely transparent to us.

The foundations of our judgments as well would be a “given” in the sense that we cannot conceive of exhaustively the foundation of our capacity to know. By the notion of “given” I mean here that the arguments and premises on which we found our arguments are, for us, the ultimate foundation of which we cannot reach, but they remain important for us to build upon enabling us to proceed with our reasoning, since we have to make judgements. We could see, even behind the Cartesian thought, a practical maxim: *iudicare necesse est*.

On the Cartesian side of the analogy that I have proposed here, a remark of Maurice Blondel—another representative of the Catholic philosophy in France around the turn of the 19th and 20th centuries—illustrates the position of the human between the two givens, so to speak. There is the sum of all things and then there is understanding, the foundation of both is the divine will that we cannot conceive of exhaustively.

Actually, because as the basis of all things (and of our finite understanding itself) is the decree of the divine will, without doubt, not arbitrary in itself, but inscrutable for us, the middle term that makes them analytical and intelligible inevitably fails, ... [with the consequence] that all our conceptions, intuitions, deductions, always between two terms, are equally synthetic. (Blondel, 1896, p. 558. Translation, by Suominen²)

Here we should notice that synthetic is not the synthetic or *modo axiomatico* or *geometrico* opposed to analytic in the distinction of methodical approaches with Descartes. With Blondel, synthetic rather refers to the combination of ideas, on one hand, and facts or historical data, on the other, thus containing as its part factual knowledge as well (cf. Morado, 2000, p. 237).

Blondel then continues by a claim that “the secret of method” is that one sees well what there is to be seen, all the time more and more synthetically [*voir bien ce qu’il y a a voir... avec une agilité plus en plus synthétique*] (Blondel, 1896, pp. 558-559). With Gadamer, obviously, it would be hard to find a direct counterpart to Blondel’s claims. Then again, if we were to take seriously Gadamer’s criticism of the assumed Hegelian conception of history becoming completely transparent, there would be a logical place for such a counterpart with Gadamer as well—or, *mutatis mutandis*, we could apply to Gadamer as well what Blondel writes about Descartes.

The foundation of our understanding and knowledge could be the Great Truths of History or God, but our understandings and knowledge are merely the results of judgments upon what is given, rather than the Truths of History or God as such. Intuitively, it is plausible to think that if our understanding of the foundation of our capacity to understand and know remains incomplete, then also all that we may know and the totalities of all these pieces of knowledge remain incomplete. I especially would think that because of this, our knowledge of particular matters remains in a sense incomplete as regards its form, and this incomplete form would be a form that so-called positivism takes universally as the form of knowledge. In this sense, on the side of Cartesian thought, still another remark by Blondel (1896, p. 557) could be illustrative:

The center of gravity of Cartesianism ... is on the axis of symmetry that permits Descartes’s Christianity to balance and even elicit, as if it were its counterpart, the development of his scientific positivism. (Blondel, 1896, p. 557 [Translation by Vesa Suominen. Original text: “*Le centre de gravité du cartesianisme ... se trouve sur l’axe de symétrie qui permet au christianisme de Descartes de compenser et même de provoquer, comme pour en être le contrepois, le développement de son positivisme scientifique*”])

We indeed can say that there is a particular kind of agnosticism with Descartes, though he neither could nor probably would express any doubts as regards God’s existence. His quite strong emphasis of the fundamental inconceivability of God for us, however, gives

2 The original text: En effet, puisque dans le fond des choses tout est soumis (et notre enendement fini lui-même) au décret non pas sans doute arbitraire en soi, mais insondable pour nous du vouloir divin, il appert que, dans nos intuitions les plus claires, le moyen terme qui les rendroit analytiques et intelligibles fait inévitablement défaut, ... que toutes nos conceptions, intuitions, deductions, toujours à deux termes, sont toutes également synthétiques.

his thought an agnostic tone. With Gadamer, then, we perhaps could talk, in the same sense, about historical agnosticism.

In my view, Blondel's notions of symmetry and agnosticism constitute quite an intelligible and plausible argumentative whole. Were the agnosticism historical (or oriented towards God), the symmetry around the agnostic axis quite plausibly could warrant a view that the knowledge about particular matters, such as history—in the sense of what there actually has been—could and would have a form that we may characterise as incomplete, due to our incapacity to conceive of the ultimate foundations of such knowledge. I would prefer to reserve the notion of knowledge to a form of intelligence that basically has the form—or contains an element having the form—of a proposition claiming something about some “outside” reality, all the time recalling, however, that such proposition can neither be free of conceptual moments not reducible to such “outside” realities. Pursuing knowledge in this sense could well be the actual content of positivism that the agnosticism immanent in Cartesian method of evidence paves the way for and even demands, according to Blondel. In the case of Gadamer, however, his criticism of historical objectivism would exclude exactly this kind of knowledge about history in the sense of what there actually has been in the past. Such knowledge, at least in a hermeneutical perspective, would neither be possible nor have any sense. Then again, a remark by Paul Ricœur, the French exegete and hermeneutician, on the relationship between history and what he calls “philosophical hermeneutics,” with an obvious reference to philosophers like Heidegger and Gadamer, could be in place here. According to Ricœur, “philosophical hermeneutics,” while eagerly proceeding “along the ascending pathway toward ontology,” neglects the “descending pathway which leads back toward historical inquiry.” (Ricœur, 1981, p. 89)

Dialectics of Knowing About the Past and a Dialogue With What History Has Handed Down to Us

We now should return to my notion of the library and librarianship and its rationality and proceed therefrom. Some preliminary remarks are in place here. I summarised above Gadamer's view in terms of a dialogue with what history has handed down to us, and how it is opposed to actual knowledge about history in the sense of what there actually has been. For Gadamer, the former would be an instance of historicity of our being, while the latter is suspect and risks to become historical objectivism or historicism. My suggestion for the rationality of the library and librarianship about *scriptum est*, however, would include both dialogue with and knowledge about history and tradition:

- There would be a dialogue with what history has handed down to us in the Gadamerian sense as the general foundation of significance of such a conception for the library and for librarianship.
- There would be knowledge about history of *scriptum est* in the sense of what there actually has been. This would be the formal function of the library about *scriptum est*.

Consequently, we should ask how these two aspects of history could perhaps relate to each other, or whether they were mutually exclusive.

Second, we should notice that my notion of the library and librarianship about *scriptum est* is, in an essential sense, a history-oriented conception of the rationality of the library. The library and librarianship would be knowledge about history of *scriptum est* in the sense of what there actually has been. With Descartes, however, dialogue with *lumière naturelle* consisting of *communes notions* etc. is a component or even the foundation of *any knowledge and understanding*. With Gadamer, similarly, dialogue with what the history has handed down to us is a component or even the foundation of *any knowledge and understanding*. Then again, knowledge about history obviously is one part of any knowledge, but also for Gadamer it is somehow closely related to the dialogue with what history has handed down to us as the foundation of any knowledge. (If we were to indicate the logical counterpart with Descartes, it perhaps leads us to consider exegetic and theological themes related to general and special revelation in Christian theology, but I should not elaborate further this thematic here.)

Then, we still should notice that there is a kind of difference of “charges” between the agnosticism which I claimed an analogy:

- The agnosticism as regards God with Descartes is “positively charged,” so to speak, in the sense that Descartes probably—or, at least, possibly—tended to assume that God exists. Blondel (1896, p. 560) characterises Descartes’s view as Christian agnosticism (“*agnosticisme chrétien*”).
- Gadamer probably intends to exclude any kind of independently existing or transcendent Great Spirit of the World and History that he seems to assume to be there with Hegel. In this sense, Gadamer’s agnosticism would have a negative charge.
- Then again, we perhaps even could condense plenty of Gadamer’s thought with the view that there is a “here-and-now-immanent” reason and rationality of history. It would be a kind of consensus resulting from our dialogue with, around, and in terms of what the history has handed down to us. This could actually be the position of Hegel as well.

In addition to the difference between the putative agnosticism of Descartes and Gadamer, there is a difference between the scientific “positivisms” that we could and should consider here. The Blondelian symmetry around the axis of agnosticism, if taken strictly and formally, only allows scientific positivism, without actually requiring it:

- In the case of Descartes, probably the most important part of the scientific positivism allowed by his agnosticism in a historical sense has its foundation of rationality outside of the sphere of his *prima philosophia*. The significance and legitimatisation of natural sciences or other fields of, in a technical sense, applicable scholarship comes from the possible beneficial effects of such applications. Such knowledge is valuable and con-

sequently, *iudicare necesse est*, because it is necessary to have enough food and other resources for sustaining human life.

- Within the rationality of the library and librarianship about *scriptum est*, however, the issue is knowledge about history in the sense of what there actually has been in the past. Technical applicability would not be the most plausible or primary foundation of rationality in the case of such knowledge. A question still remains still open. Why should we mind about the history of *scriptum est* in the sense of what there actually has been?

As far as we take this as the general question of rationality of any investigation of history, there certainly are plenty of ways to answer it, and those answers can be more or less convincing depending on our positions as regards questions of rationality in general. While restricting it to a question of the history of literature and *scriptum est*, we could even have answers that would not apply to history in general. Here, however, I see as appropriate to suggest only some possible answers that connect closely to my argument above and to the thematic of avoiding humanism becoming overly self-confident or even arrogant.

The leitmotiv of this essay has been the analogy that I claimed to be identifiable between Gadamer's claim that history can never become completely transparent and Descartes's claim that we can only know or touch by thought, but never conceive of or "embrace" God. We could make the analogy even more concrete and illustrative by taking it to the level of possible legitimatisations of political power and by thinking about governments that pretend to have a complete knowledge about either the will and plans of God or the direction and *telos* of history and of the advancement of humanity. Both assumptions could warrant a more or less dictatorial and overly authoritarian government. We could read Descartes's claim as a warning against theocratic legitimatisation of power, at least in the roughest forms that such legitimatisation could have and actually in many instances had in 17th century Europe as well. If we wished to find a somewhat surprising and even provocative secular counterpart against which Gadamer's claim that history never becomes completely transparent could warn, we could recall the Soviet regime's active efforts to make history do what it "should" do according to the doctrine that appeared as a theory of a historically necessary advancement of humanity. Recalling Gadamer's attempt to distance himself from Hegel, we probably should think about all kinds of modern forms of totalitarian or authoritarian rule.

In view of overly self-confident or even arrogant humanism, history could also be a domain within the humanities characterised by an ethos that we could characterise as relatively modest-minded. Within historical investigation itself, of course, one can be more or less theoretical and philosophical. An overly theoretical attitude could lead to ignoring facts and historical events that would not fit to or be so important in view of the theory to which one has committed oneself. Such an overly theoretical attitude would go directly against the idea of the "idiographic" nature of phenomena studied in cultural sciences and history, as opposed to "nomothetic" natural sciences (see Rickert, 1910, pp. 54-55).

We can find an appropriately moderate midway position with a Finnish historian, Jorma Kalela, for instance. He writes, "... all the consequences of the linguistic turn notwith-

standing ... there is no reason to give up the objective of reconstruction" (Kalela, 2010, p. 35). He then proceeds to list the damages that otherwise could follow, among other things mentioning the dangers of propaganda (Kalela, 2010, pp. 42-47). This, of course, connects in a fairly direct manner to the already mentioned dangers of arrogance of a government legitimating itself in theocratic terms or in terms of what inevitably is the direction and telos of history and progress. Legitimation based on God's will or the telos of history in this sense would come close to "naturalisation" of some states of affairs that we perhaps should look at with a more critical mind. At the other end of the spectrum, then, one could be cherishing one kind or another of atheoretical ideals of history, such as the classical Rankean which sees historians as capable of an allegedly neutral attitude in front of the sources (see, for instance, Kalela, 2010, p. 151). Such alleged neutrality, obviously, would be most problematic because it ignores the necessarily present dependence of historical knowledge on used concepts.

The result, then, could be that there perhaps should be a dialectics developed between knowledge about actual facts in the past and our dialogue with what history has handed down to us. We actually could see some reference to this direction with Gadamer (1960/1972, p. 238) himself as well when he suggests that "a hermeneutically trained mind must be, from the start, sensitive to text's quality of newness," even if he thereafter continues that "this kind of sensitivity involves neither 'neutrality' in the matter of the object nor the extinction of one's self, but the conscious assimilation of one's own fore-meanings and prejudices." This "quality of newness" of a text in any case implies that the text is given a status of its own as well.

Concluding Remarks on Talking About Rationality

Returning to the rationality of the library and librarianship regarding *scriptum est*, one can see the above argued proposition representing the other side of dialectics, the side of a particular set of actual facts in the past. The dialectics that we are discussing here could be a Ricœoeurean kind of dialectics never overcoming the tension from which it originates. Goncalo Marcelo tells us about the notion of dialectics with reference to Ricœur. "Indeed, this dialectic does not produce a synthesis, but endless passages from one pole to another" (Marcelo, 2010, p. 354.). Such dialectics could be the kind of dialectics that results from subjectivity encountering its objective conditions, which it never can exhaustively conceive of. In this sense, a certain restrictedness would be characteristic of our subjectivity.

The core notion behind such dialectics here is the being of a subject within his or her own subjectivity. As far as we wish to explain how knowledge emerges—or perhaps evolves as and into a resource, in the spirit of information and knowledge management—we can be as objectivism-critical and even Cartesianism-critical as seems appropriate for conceiving of and investigating such phenomena. Neither the perspective of understanding and/or explaining the phenomena of knowledge, however, would be outside the possible restrictions that our subjectivity contains and consists of. Within such a perspective, explaining and

understanding are moments of knowledge, but an *omnipotent* would have no reason to know; neither would an *omniscient* have any reason to doubt and elaborate methodological perspectives that may help him or her to overcome the doubt and reach knowledge. Knowledge and the need to know, then, would not be the perfection of humanity. Rather, it would be a symptom of our imperfection—or, of “man’s finite, historical mode of being,” to use a phrase of Gadamer’s (1960/1972, p. 245) [even if Gadamer might have some critical comments on my conclusions].

To conclude, still another remark by Ricœur himself on philosophical hermeneutics is in place, this time directly addressed to Heidegger and consequently applicable to some features of Gadamerian thought as well. According to Ricœur, we can ask if a human could ever achieve the “ontology of being” in the Heideggerian sense. Ricœur writes: “In this way, ontology is indeed the promised land for a philosophy that begins with language and with reflection; but, like Moses, the speaking and reflecting subject can only glimpse this land before dying” (Ricœur, 1969, p. 24). In an eloquent even if also most metaphoric manner, Ricœur here indicates that our existential condition is such that we cannot overcome the gap between our subjectivity and its conditions, of epistemology and ontology or being, or—we perhaps could say—the “Cartesian split(s).” Overly eager criticism of Cartesianism, in any case, could blind us from the existential conditions that we perhaps cannot escape, and it could prevent us from considering particular rationalities that could matter, after all, and that perhaps are the rationalities that we actually can reach.

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V

Resisting Informational Hegemony

Culture Clash or Transformation? Some Thoughts Concerning the Onslaught of Market Economy on the Internet and its Retaliation

Thomas Hausmanninger

Abstract

In the 1980's, the liberal/neoliberal market economy seized the global sphere and with the end of socialism/communism seems to have won its place as the only viable concept of economy. In the 1990's and 2000's, market economy took on the internet and in doing so, once again seems to have gained the upper hand, especially as regarding social networking, one of the main characteristics of the current web, which seems to fall prey to economic strategies. The below paper scrutinizes the problematic relation between the net and market economy on a deeper level and gives some prospects towards understanding how net-culture effects market economy itself. To that end the paper commences with a review of Rafael Capurro's theory of messages. It then explores and queries the overall structure and dominant ends and means of the internet as envisaged by early internet theorists and empirical studies of internet usage. Visions and forms of usage are being constructed and reconstructed and it is shown that these forms of usage and their visions still dominate the net. Looking at Bernard Mandeville and Adam Smith, the structure of liberal market economy is exemplified. Loosely tying in with Jürgen Habermas' theory of rationalities and Capurro's message-theory, the rationalities, cultures and messages of dominant forms of usage of net and of market economy are reconstructed. The claim is then posited that market economy functions in accordance with strategic rationality, thereby creating a culture of competition defined by the message of the competitive strive towards monopoly. In contrast, the net embodies communicative, aesthetic-expressive and cooperative rationalities and creates cultures of cooperation and individualization with messages of respect and care, revealing itself as creating beauty and incentive towards cooperation. These latter rationalities, cultures and messages greatly differ from the rationality, culture and message of classical market economy. In conclusion, the below paper demonstrates that strategic rationality is incompatible with communicative, expressive and cooperative rationality, as are cultures and messages, rationalities that are endangered through the subjugation of strategic rationality, revealing their recursive effects on market economy itself. New forms of productivity emerge on the net and in the digital world. Thus the

culture clash between market economy and the net may be the beginning of a transformation of market economy itself.

Rafael Capurro and the Message Society

Rafael Capurro recommends viewing the modern or postmodern world as permeated by messages. Postmodern society in that perspective would then be a “a message society” (Capurro 2003, p. 105). Modern mass media and the internet seem to indicate that this perspective allows more relevant insight concerning the modern/postmodern condition than do many other all-encompassing diagnoses—like “Post-industrial Society” (Daniel Bell), “Risk Society” (Ulrich Beck), “Experience Society” (Gerhard Schulze), “Information Society” or “Knowledge Society.” The extra insight offered by Capurro’s message society can be attributed to the fact that most of these other diagnoses simply concentrate on modern western societies and their developments whereas Capurro focuses on the global sphere. In his view, all societies—at least those that participate in media and internet communication—evolve more or less into message societies (Capurro, 2003, p. 122).

In that respect it may be a bit strange not to use the common term “Information Society” or “Knowledge Society.” There is a reason for this choice however, Capurro’s philosophy is rooted in hermeneutics and thus critically scrutinizes words and terms and reflects their deep structure, their etymology and semantic fields. “Information” indeed shows semantic connections with Greek *idea*, *eidos*, *morphe* and *typos*—terms that are the heavily semantically charged up by Greek philosophy (Capurro, 2003, p. 108). If one analyzes the semantic structure of the Latin word *informare* we see that it is composed of the morphemes *in* and *form* with the verbal ending *re*. The meaning of *informare* is derived from giving something that is pure plastic matter (*materia*) form, or, to form something deeply, to give it structure. Message on the other hand is a semantic entity, something that is put forward by someone with the intent of evoking a (compliant) reaction by someone else (Capurro 2010, p. 108). But messages are semantically open to interpretation; they have to be decoded and the process of decoding is done by the recipient of the message, who—in the hermeneutic perspective—tries to connect the perceived semantic content of the message with his own knowledge, his “Vorverständnis” (see Gadamer, 1990, pp. 272-274, 298-300). Consequently, the message only becomes meaningful and relevant for the recipient, when he/she incorporates the semantic structure in his/her own setting of knowledge—or deeper even: if he/she forms neuronal connections in his/her brain and connects these with his existing neuronal connections. The recipient therefore actively creates forma, makes a typos and produces meaningful *eidos* in his own knowledge-setting or brain-structure (stating an active, creative structure of that process certainly stems not from ancient Greek but modern perspective, which presupposes the idea of autonomy, created by the Enlightenment; see also Capurro, 2003, p. 119ff). Capurro is correct to state that the active, autonomous appropriation of the (re-constructed) semantic content of a message produces information—“we receive a message but we search/strive for information” (Capurro, 2003, p. 108ff; translation by me).

Looking around we may indeed perceive ourselves to be totally surrounded by messages. When film-director Steven Spielberg in his movie *Minority Report* (2002) showed a world in which the leading character walks down a city street and is constantly approached by holographic virtual persons who address him with personalized advertising, that was meant as a science fiction extrapolation of the near future. Even then, in 2002, some of it already was a reality in our modern cities; today—though not yet holographic and personalized—screens with moving pictures, targeting us with ads and news have become common in bigger cities; in Germany universities try funding by renting out their public spaces to advertising companies and selling the rights to name their lecture rooms after companies. Today's younger generation communicates everywhere via smartphone and constantly sends and receives personal and commercial messages. Watching TV—itself a process of receiving messages—more and more is accompanied by using the “second screen” of tablets and smartphones for exchanging messages commenting on the program. So we indeed seem to have reached—at least in modern/postmodern societies—the level of a truly message society.

Messaging in that respect seems to be primarily a process of communication rather than merely of information transmission. While the internet has made it possible for nearly everyone to participate in the digital world (Capurro, 2003, p. 121), we should remain aware that the message need not only be the obvious thing produced by people in form of words and pictures. Capurro (2003, p. 110) works with McLuhans notion that the medium itself is a message (McLuhan, 1994; Capurro, 2003, p. 110). McLuhan's much cited dictum infers that the medium as a whole, also, is sort of a message because it appeals to certain sensory faculties and capacities of human beings—for example the radio appeals to hearing, not viewing, and opens different channels, thus postulating a heavy relevance of the oral word, of the evocation of emotions by intonation and by nonverbal sound like music and so on. Furthermore, nonverbal pragmatic structures also may contain—or perpetrate—a sort of a message, thus money as medium transports the message that everything can be evaluated in terms of figures and consequently priced and exchanged.

In that respect it can be queried if the internet as a medium embodies a specific message. And with regard to the massive onslaught of the market economy on the internet since the 1990s it also can be asked, what message the market economy embodies in its relationship to the internet. I shall do that in the following passages, so that it will be possible to scrutinize the compatibility or noncompatibility of the economy and the internet. To reach that goal, I shall use the theory of rationality developed by Jürgen Habermas and extrapolate from this how specific cultures are produced by the internet and market economy. On that basis I will attempt to reconstruct the messages that are posed by the internet and market economy via their rationalities and cultures. Last but not least I shall ask about signs of change that are instigated by sort of a retaliation of the net affecting market economy.

What the Internet Was and Became

Looking back is an effective method to truly grasp the present state of something, even if the present state in question concerns such a fast changing and evolving medium as the internet. There has been much talk of how the net has passed from an initial state and structure into a completely new quality where the different states are labeled in terms of versions—from 1.0 to 2.0. Whereas in the original net there had been only a few productive forces relative to more or less receptive users, now the separation between producers and users blurs and production is nearly everywhere; the net has become an overall integrative platform—as Scott Dietzen put it—for that overwhelming, allelomorphic production (Web 2.0, in: <http://de.wikipedia.org/wiki/Web%20.0?oldid=139445422>). Quite often that new quality is exemplified by the emergence of social networks where a platform is provided and production (of content and networked structures) is left to users. But looking closer one may find that this evolution always has been inherent in the structures of the internet and in the ideas guiding its development. To make that visible, I shall start with a look back on the origin and some early visions and empirical studies of the net.

From the beginning, the evolving internet has been a decentralized means of (data) exchange and communication. Various iterations include ARPANET (the well known early project of connecting computers); the development of FTP, TCP and IP; the connection of Unix-computers the development of Usenet; the implementation of DNS and the development of the first backbone NSFNet for enabling different networks to communicate. All these efforts and inventions were meant to enable data exchange, communication and collaborative use of information technology. Very early e-mail represents one of the highly used services of electronic networking and exemplifies communication not only being focused technically and not only concentrating on electronic data processing, but also enabling personal communication. With Usenet and the WELL bulletin board systems and other means of computer mediated communication (CMC) started to gain access to everyday life. Howard Rheingold's (1993) well-known account of his own experiences with CMC in the 1980s is a case in point. When Sir Tim Berners-Lee and Robert Cailliau published their concept for a worldwide hypertext project and, soon after, the World Wide Web was established and opened worldwide networking, the internet began to grow exponentially and to permeate our societies. Even though backbones and nodes are some focus points of the structure of the net and thus can be seen as technical points of centralization, these are, nevertheless, still parts of an overall decentralized structure. While it is well known that Arpanet was created as means for the decentralized preservation of vital data in case of an atomic war, decentralization is still an essential feature of the internet that provides it with its astounding resilience and stability. This decentralization is also a very deeply rooted element in the resistance of internet communities against any attempt of centralized control.

It need not be a surprise that computer mediated communication (CMC) and the internet moved beyond being simply a cutting edge technology but became a base and a means for an emerging culture of free and autonomous communication and expression for both individuals and for groups. Most acutely John Perry Barlow expresses some of

these notions in his *Declaration of Independence of Cyberspace* (1996). Alarmed by the U.S. Telecommunications Reform Act and its concept of decency, Barlow insists on cyberspace being a totally new realm beyond the territory of nation states. Cyberspace appears to be a realm beyond matter and bodies, to which the laws of states and its subjects do not apply (Barlow, 1996). His ideas certainly have implications of “cybergnosis”—to use a term of Capurro, where the “meat existence” seems to be overcome and a purely noetic state of being is achieved. But Barlow nevertheless focuses in a most exemplary fashion the hopes and ideas that have been connected with the net: cyberspace is seen as a space of communicative freedom, where a) there is complete freedom of expression, and at the same time b) the actions of the participants themselves will produce sort of a global civil society of minds (instead of bodies) where cultural and ethical structures will emerge and a new social contract will come into existence (Barlow, 1996). Barlow’s idea of cyberspace is neither one of anarchy nor of anomie. Instead, he refers to the Golden Rule and thus the principle of universalisation as moral point of view (Barlow, 1996). Guided by that principle, cyberspace will be structured by the actions and communications of the netizens themselves. Barlow also envisages a new form of productivity connected with the digital sphere that surpasses industrial production: whatever can be digitally conceived can also be easily digitally reproduced in a seemingly cost-neutral way. The latter certainly is not completely true—computers, servers, fibreglass cables, backbones, the whole physical arrangement for the internet and the energy consumed by it must exist for cyberproduction to be possible and that certainly affects costs. But Barlow rightly grasps the nature of digital products; these are more easily reproduced and exchanged than physical goods and resemble more the nature of public or common goods and abundance than commodities and scarcity.

At about the same time as Barlow’s *Declaration*, Rheingold (1993) and Turkle (1999) empirically explored the uses of the net (Rheingold, 1993; Turkle, 1999). In a certain way, these studies can be seen as the empirical groundwork for and substantiation of Barlow’s ideas. In terms of political theory, Barlow’s thoughts are more oriented toward liberalism and civil society, whereas Rheingold’s ideas converge to a certain extent with the communitarian paradigm. Nevertheless, their visions of the net tie in with each other. With regard to the WELL (Whole Earth ‘Lectronic Link), Rheingold (1993) shows that an autonomous creation of a communal cultural sphere beyond the laws, institutions and authorities of nation states is indeed possible (Rheingold, 1993, introduction). Within such frameworks the establishment of moral frameworks by users are worked out and normative codes are created, questioned, changed and re-created in an evolving social process (Rheingold, 1993, introduction). For Rheingold, the motivation of people around the globe seems to be a yearning for coming together and forming community-structures in a world where equivalents of the Greek *agora*—realms of public gathering—seem to have gone by the wayside (Rheingold, 1993, introduction); here the communitarian inclinations guide his reflections. Nevertheless he also opts strongly against any kind of censorship and substantiates this by explaining that central control is obsolete anyway on the net, because—citing John Gilmore—the internet sees censorship as a defect and evades it (Rheingold, 1993, introduction). A certain danger on the other hand stems from the economic and the political

sphere trying to seize the net: If the netizens do not establish their own clear idea of what they want the net to be, they run the risk of becoming objects of political and economic engineering (Rheingold, 1993, introduction). Thus Rheingold very early makes visible a certain incompatibility of the net with the economic and political edifice: the structure and the early usage of the net as one-to-many, many-to-many and many-to-one communication is autonomous, diversified and beyond hierarchy or profit-gaining. It also surpasses mass media with their gatekeepers and offers allelomorphic structures of collective governance. But its meso-communication and autonomy may be endangered by the economic sphere turning the net and the communicative input of the netizens into another commodity and by politicians and nation states using the net as some sort of Foucauldian panopticon (Rheingold, 1993, introduction).

Turkle, scrutinizing dominantly Multi User Domains and Multi User Dungeons (MUDs) and virtual identity-making, adopts the internet as a postmodern sphere. The structure of the net and the MUDs seems as much marked by decentricity, fluidity, plurality and opacity as postmodernity itself (Turkle, 1999, p. 22). Postmodern thought seems to have found its materialisation in computers, CMC and the internet (Turkle, 1999, p. 22). Where modernity was guided by the regulative idea of unity and thus based identity on subjectivity as a centric concept, postmodernity develops plurality, diversity and decentricity as regulative ideas. Wolfgang Welsch—with Gilles Deleuze and Felix Guattari—sees modernity embodied in the metaphor of the tree whereas postmodernity prefers the metaphor of the rhizome (Welsch, 1991, p. 142). Turkle emphasizes postmodern identity as also being rhizomatic, that is to say: decentred, diverse, internally plural. These new traits seem to be intensely connected with the possibilities of creating virtual selves via CMC (Turkle, 1999, p. 17; p. 28, et passim). She also loosely ties in with Jean Baudrillard's notions of simulacra and simulation—that is to say, that the postmodern condition consists in constructivism without transcendental horizons; everything in our understood world(s) is our own semantic creation and there is no objective meaning beyond our signs and sign-making (Baudrillard, 1978). In the same manner virtual identity is mostly simulation or simulacrum, a creation of the communicative individual that invents him/herself in signs and descriptions that vary from context to context (Turkle, 1999, p. 26ff). That constructive character not only applies to virtual reality, but also permeates Real Life (RL)—as other postmodern theorists state—but in virtual reality the possibilities of creating and recreating a self or a set of selves seem to be overwhelming. They offer something like the possibility of identity from scratch, because bodily features one is born with, sex and gender, the social milieu one is raised in and personal history seem to be suspended. Turkle thus shows that the netizens she interviewed often experience virtual identity as freedom and as chances of becoming a more true self than the possibilities of RL offer (Turkle, 1999, p. 285-339). So the main focus of Turkle's studies emphasizes the possibilities of self-expression and self-creation on the net. Her studies also tentatively bring into view that virtuality and off-line existence tend to intersect—the online activities do have impact on offline life (Turkle, 1999, p. 16f; p. 415-439).

In the 1990s, Pierre Levy conceptualized the internet and CMC as a new realm of comprehensive information and knowledge production (Levy, 1999). Levy designates four spaces of evolutionary succession. The space of earth permeated by nomadic practice is the first evolutionary realm, marking the place where humankind first invents its existence through inhabiting and segregating earth, recreating their environment and signifying it through myth and ritual (Levy, 1999, p. 131). Secondly, becoming sedentary, humans take possession of the land—a practice, that marks the beginning of human dominance of the earth, which is no longer roamed but cultivated, exploited, metered and measured, becoming property, introducing division of labour and stratification into the social realm (Levy, 1999, p. 133-135). The third evolutionary space is represented realm of economy, designated by a de-territorializing impetus within its flows of money and in the transformation of everything into commodities where the world is seen as an exploitable space of raw materials (Levy, 1999, p. 136f). The fourth evolutionary space, the space of information and knowledge, coexists with the other three spaces, and though while dominated by economic space and territorial space and subjugated by their functional laws (Levy, 1999, p. 138), its tendency is towards autonomy, becoming rhizomatic and diversified, ever growing and changing as the emerging cyberspace permeates the globe (Levy, 1999, p. 141). The production of information and knowledge in cyberspace is not the output of an anonymous, systemic machine (Levy, 1999, p. 16f), but constituted by the co-operative, communicative work of numerous individuals; it becomes possible with the electronic networking of the internet, but it does not eradicate the individual (Levy, 1999, p. 15). On the contrary, Levy argues for the emergence of cultural and normative structures on the net (Levy, 1999, p. 16), where every individual is acknowledged as an intelligent being (Levy, 1999, p. 15) and where it is individual creativity that produces intelligent output (Levy, 1999, p. 17), leading to knowledge bases that surpass ideas of classic static encyclopaedia, being collaborative knowledge bases that are constantly revised, supplemented, evaluated and discussed (Levy, 1999, p. 216f). The process as a whole seems to be marked by co-operation instead of separation (Levy, 1999, p. 217) and in RL will produce not disorder and anarchy, but community, a structure more apt to solving the complex problems of contemporary global society than are nation states and their politics (Levy, 1999, p. 17f).

All the cited authors (in their time) did read the internet as a whole and tried to get its message(s) so that they could extrapolate their vision of the net and its future. I think they read it right. Today, we may even notice that not a few of these visionary traits have come true and stated forms of usage have been continued and have evolved. First of all the net still consists of a decentralized, diversified and rhizomatic structure. The rhizome even spreads and surpasses the once existing boundaries of cyberspace, physically consisting of computers as terminals through which the net can be reached and can be materialized for the human individual. Nowadays, smartphones, tablets and television sets are connected with the net. Common telephones work via Voice over IP, and wherever computers are used for data processing or controlling and steering technical infrastructures, the net is used for overall connections. The remote control of household applications via net-communi-

cation and smartphones is not yet in widespread usage, but is possible, too. So the net has become the all-encompassing platform Dietzen diagnosed (and the rhizome still spreads).

The internet also provides platforms for individual actions. These can be sorted out in three dimensions. First of all, personal and social communication is indeed still one of the dominant features of the net and it has multiplied enormously. Social networks, instant messaging, classic forums (the successors of the bulletin board systems), and personal websites are the most common examples; but also gaming sites and virtual surroundings (like Second Life) are used for personal and social communication. What Rheingold and Turkle showed in their studies is still true but there have been some modifications, too. The possibilities of virtual identity are still in use but it seems that through the amalgamation with RL an intensified intersection between personal face-to-face relationships and virtual connections has taken place. I take this as a sign that the internet has been seamlessly incorporated into the everyday lifeworld (to use the term of Edmund Husserl and phenomenological sociology).

The net is no longer a disconnected realm of extra-normal validity, but rather embodies and represents the continuation of everyday life that offers alternative means of being. Teenagers, for example use the net to expand their connections with real life friends online and talk via Skype, while gaming on the same site; adults do that, too, and use mating and dating sites as starting points to pass from virtual to real life relationships. There may be culturally specific differences in these intersections—so in Japan social software and networks are mainly used to stay in contact with real life friends, whereas virtual relationships are less frequent (Adams, Murata, Orito & Parslow, 2011, p. 22). Social communication also includes non-professional journalism (Bruns, 2007) and non-professional evaluation and criticism such as, for example, the review of products on Amazon, Youtube and other sites.

Individual social media expression, secondly, has surpassed the use of the traditional personal websites, though personal websites still exist, but largely exist in the form of blogs and blogging software whereby social media expression is combined with the personal website. Such personal expression can also be found on platforms like Youtube, Flickr or ccMixer, too, whereas these platforms are also used for creative actions (Bruns, 2007). Certainly transitions between social communication and personal expression or creative action do exist—blogs may not only express one's identity and take on the traits of virtual diaries, but often are used for non-professional journalism or critique of current political events, popular media culture and so on; also videos on YouTube may be at the same time creative objects and comments on contemporary politics or reviews of games and so on.

Thirdly, the production and sharing of information and knowledge on the net, as discussion and argumentative discourse, have evolved in many ways. Differing from Levy's terms, I'd like to speak of collaborative reasoning and knowledge production. The most obvious example is of the collaborative construction of a knowledge base is Wikipedia. It certainly encompasses traits Levy envisaged as surpassing classic encyclopedia, since Wikipedia is constantly supplemented, rewritten, expanded and remains a work in progress; it is open to everyone and accompanied by discussion that lays open the constructiveness of the articles and adds transparency to the text. Less obviously, collaborative reasoning and knowledge

production shows itself in forums, on platforms like YouTube and in Wikis, where average people contribute and share their insights, skills and skill-knowledge to various topics—for example concerning diverse issues like gardening, household, health, restoring books and comics, repairing cars and motorbikes, constructing maps, textures or characters in games and so on. It is here that Levy's vision of recombining the production of knowledge with the practices knowledge stems from, and is meant for, realizes itself (Levy, 1999, p. 217). These activities again intersect with social communication.

Market Economy

The idea of market economy plays out differently. Market economy harkens back to a time of direct exchange of things, but its existence can more aptly be situated within the creation of money and trade. The latter becomes the necessary means as soon as there is some division of labour and regionally specific production. Now, goods have to be acquired from those who specialized in producing them and have to be transported from where they are produced because of the availability of specific resources and skills. A place and time that allows that exchange makes acquisition easier and is institutionalized as market; traders who acquire goods from the producers and ship them to where the demand is come into existence and form a new social class; money, as a universal medium for measuring, helps the process of exchange and allows a new, more abstract notion of worth. All in all, processes of getting that which is needed for life and for satisfying the ever-expanding realm of human need are functionally differentiated and simplified by the successive creation of economy and market. Historical sociology could show that the invention of trade and market go hand in hand with the increasing level of wealth of societies, but also with creating and deepening social stratification. For a long time, economy intersected with other spheres of social existence, for example religion and politics. It took until the 18th century for the market economy to be differentiated and realized as a separate societal system of action and for its functions to be reconstructed and invented. From then on market economy was constructed as a liberal market economy. It now is seen as an autonomous system guided only by its own inherent, specific functional laws.

The philosophical background of the theoretical construction of the liberal market economy in the 18th century lies in a growing awareness of systemic structures as functional entities, even though a truly functional paradigm then is, as yet, far from being completely established and rising "natural philosophy" prefers causation and effect as the paradigmatic frame of reference. But there are presentiments and tentative elements of grasping functional laws and relations in no longer metaphysically grounded systems—for example in Thomas Hobbes' reconstruction of the state as system of commune life of rational egoists, or Francis Hutchesons early proto-utilitarian reflections. In that intellectual milieu, at the beginning of 18th century, Bernard Mandeville breaks substantial ground with his poem *Grumbling Hive* (included in *The Fable of the Bees*) and the subsequent annotations and supplementations he writes to defend his initial notions (Mandeville, 1705/1980). Mandeville's

central idea is that in a social system the dissociate passions and emotions of individuals can be made socially productive—and that this can be done without the individual even slightly intending it, that production being guided by moral norms or sociable, altruistic intentions. In the background of that conception the Hobbesian anthropology is lively, it conceptualizes humans primarily as egoistic beings that seek advantages and who try to maximize their profits (defined not in an economic sense). Where in Hobbes rational calculation of optimizing conditions for egoistic strive compels human beings to abstain from force and violence, in Mandeville rational calculation of the individual is substituted by the implicit functional rationality of a social system. That system guides the egoistic, antisocial striving of all individuals towards an overall beneficial output and outcome (Mandeville 1705/1980).

It is exactly this point in Mandeville's thought that guides Adam Smith to his concept of liberal market economy (Smith 1776/1993). Smith also thrives in the intellectual climate of his time, where liberal thought proliferates, and where, for example, David Hume develops ideas of systemic performance in his reflections on justice (Hume 1751/1994, p. 304). Smith primarily focuses on economy and—after the proto-liberal reflections of Physiocracy, where already “natural laws” of economy had been reconstructed—tries to grasp market economy as a pure, self-sustaining system (which he at the same time creates). His goal is the same as Mandeville's although restricted to economy; he strives to prove that the systemic laws of pure market economy guide the egoistic actions of individuals towards public benefits (in the image of increasing wealth of nations and providing all the goods, people need and want, at a civil price). In Smith it is an inherent systemic automatism that guides the individual actions to that output (Smith 1776/1993, p. 371 et passim). He already stressed such automatism in his *Theory of Moral Sentiments*, where also systemic laws are scrutinized, then with the wider intent to qualify them as (parts of the) foundations of morals. There it is for example the law of—as articulated later by Hermann Heinrich Gossen—the so-called “diminishing marginal utility,” configured here as the restrictedness of possible individual consumption, that leads the egoistic seigneur to share out everything his workers produce and that he cannot use up himself (Smith 1759/1985, p. 316). In *The Wealth of Nations* now it is mostly competition that functions as the principle of domestication of the economically driving principle to maximize profit and thus spurs public benefits (Smith 1776/1993, p. 50, 53f et passim).

Certainly, Mandeville and Smith both presuppose a political structure of society for their systems to be functional and beneficial. But with Smith's concept of market economy, maximising profit and competition are now established as the only guiding principles of economy and all other principles and laws of market economy are bound to these. The strive for maximising profit is conceptualized as the driving principle of economic actions and competition serves as principle of domestication of the ravenous, predatory hunger for profit, which guides the actions to civil prices, product innovation and product quality, realistic and just wages, individual purchase and spending power (to name a few) as the beneficial outcome. Later liberal and more recent neoliberal theories of the market economy therefore always refer to the necessity of profit and the beneficial effect of

competition when it comes to legitimate market economy and even Ordoliberal ethics of economy work that way (for example: Homann & Blome-Drees, 1992, 24). The supposed automatic generation of beneficial effects through market economy and its functional laws leads neoliberal theory to throw off political frameworks and thus forget the crucial role of politics in Mandeville and Smith (exemplified in statements like “competition is more solidary than sharing” in economic ethics (Homan & Blome-Drees, 1992, p. 26; translation by me). It seems that more or less forgotten in neoliberal theory is the historical learning of the 19th and mid-20th century which sees the problems of distribution of economic wealth as ones that are not automatically solved by the market economy itself—this is, of course, contrary to what Smith thought.

Of Rationalities, Cultures and Messages

Beyond economy, the internet was and is mostly about personal and social communication, individual expression and creative action and collaborative reasoning and knowledge production. To answer the question about the compatibility or non-compatibility of these net-activities with market economy, I shall first ask about types of rationality that can be associated with these activities and market economy by loosely tying in with Jürgen Habermas’s reconstructions of rationalities in his *Theorie des kommunikativen Handelns*¹ (1985a, 1985b) and some reflections of my own. From there I shall try to extrapolate on cultures formed or furthered by these rationalities and on messages that can be gleaned from these cultures.

The rationalities of actions can be gained by reconstructing the inherent logic of these actions and their goals. Therefore personal and social communication can be associated with communicative rationality. The main characteristic of communicative rationality is that it is oriented towards achieving understanding (Habermas, 1985a, p. 142 et passim). The acting person is intent on relating to his or her communicative partner with the objective of transmitting meaning in a way that allows that partner to grasp that meaning and understand it. The partner on the other hand has to be oriented towards trying to understand what is told to him/her. Concerning practical issues, understanding furthermore implies the goal of agreement. In actions guided by communicative rationality, therefore, the social relation between the communicative partners is symmetrical and intersubjective; both work together to reach understanding and/or agreement. Agreement on a more basic level is alive in understanding anyway, because both partners agree in that respect that they wish to communicate in a way that allows them to reach (mutual) understanding. Concerning speech as a means of communication, the linguistic category is (argumentative) discourse; both partners try to reach understanding/agreement by explaining and substantiating their meanings.

Where visual elements—pictures, videos, graphs or diagrams—are used, these are representations of meaning and again oriented towards understanding. Where communicative

1 *Theory of Communicative Action.*

rationality reigns and furthers the attitude towards understanding and agreement and establishes a symmetrical, intersubjective social relation, a culture can emerge: a realm that is structured by communicative rationality and induces the participants of that realm to conform to the named attitude and relationship. The main features of that culture then will be individualization—as a consequence of intersubjectivity, where both partners respect each other as free persons—and co-operation, which is necessary to reach the mutual goal of understanding and agreement. That culture implies a message, as it appeals to potential participants to comply with its necessities. That message can be formulated as an imperative to respect and care.

Individual expression and creative action follow the rationality of aesthetic expression. Habermas configures personal expression mostly as dramaturgical action and dramatic rationality because of its staging qualities, whereas purely expressive sentences seem to be coinciding with constative sentences (Habermas, 1985a, p. 137, 142 et passim). It is important to speak nevertheless of aesthetic-expressive rationality, because the dramaturgical can also have implications of strategic rationality (Habermas, 1985a, p. 140) and it is similarly worthwhile uncovering the ideal-typical, pure form here. Individual expression only succeeds when it is authentic and creative action only takes place when imagination is entertained. The attitude or orientation connected with aesthetic-expressive rationality therefore lies in authenticity and imagination, whereas the social relation is not primarily oriented towards others but towards the “inner world” (including imagination), but it also has secondarily a social relation to others as the expression or creative action searches for an audience (Habermas, 1985a, p. 324 et passim); the latter connects aesthetic-expressive rationality with communicative rationality. The linguistic category now is poetic speech (in the wider sense that encompasses epic narrative, too, which is poetic in its style) and possible visualisation takes place as artful representation of the inner world and/or as imaginative invention.

The connected culture is certainly highly individualized and the message is that you may show yourself and create beauty (in the broader sense that also encompasses the aesthetic of the ugly).

Collaborative reasoning and knowledge production comprise cooperative and communicative rationality, because the production of knowledge is a cooperative and communicative process and also aims to generate understanding and usefulness. Cooperative rationality shares with communicative rationality the demand that each individual is respected as a partner—as Levy rightly envisages as a vital condition for knowledge production (Levy, 1999, p. 15, 17)—and therefore the social relation is, again, symmetrical and intersubjective. The attitude or orientation connected with cooperative rationality can be described as one attuned to both providing and enhancing knowledge. The linguistic category certainly is discursive speech, but at the same time as the goal is to create, provide and enhance knowledge, it is also intimately connected to facilitate instruction. Where visualisation is used, it can be called illustrative, meaning- and understanding-oriented representation. Prevalent here is not the aesthetic form but the meaningful content. The culture furthered by such rationalities, attitudes and social relations is co-operative and individualized.

And the message that can be gleaned from such a culture of collaborative reasoning and knowledge production is certainly one attuned to the imperative to share knowledge.

Last but not least, (liberal) market economy can also be scrutinized to better ascertain its rationality, culture and message. The rationality of market economy can be found when we reflect on its two highest principles: maximising profit and competition. To gain profit, economic actions must try to win over competitors or at least have a sufficiently large share of the market. That requires strategies that involve recruiting as many people as possible to buy the products, acquiring the best staff (for the lowest rates of pay possible), and developing new and innovative products before the competitor does. Besides that, strategies may also be aimed at evading competition by whatever means it takes: for example by concentration, creating market intransparency or barriers against comparison of goods and so on. The rationality of market economy therefore is strategic rationality, configured as economic rationality that subsumes all strategies under the principle of profit gaining under circumstances of competition; this rationality uses the figure of money as a qualifying strategy. Strategic rationality in Habermas is a subdivision of teleological rationality, but with a social relation: its goal is success—which therefore forms the strategic attitude or orientation—and to obtain that success it has to reflect upon other relevant acting entities that try to reach the same objective (Habermas, 1985a, p. 127 *et passim*). But the social relation here does not configure the other acting entities as partners, but as adversaries, obstacles or potential supporting factors. However construed, the others in the setting of competition are always regarded as objects of one's own strategic calculation. The social relation therefore is both asymmetrical and objectifying. The linguistic category for strategic use of speech is rhetoric, and it is paralleled by visual means of attraction, spectacle and pseudo-representation—the latter aptly exemplified by advertising.

Theorists of market economy speak of structures of incentive that are configured by profit and competition to such an extent that the culture of market economy is one of all-encompassing competitiveness. The fathers of liberalism and liberal market economy were quite outspoken concerning the faculties and passions in human beings that market economy is based on; these are the dissociate faculties and passions such as greed, envy, extravagance and so on (for example: Mandeville, 1980, p. 103, 152, 177f); in reverse effect the culture of competition can be said to favour these faculties and passions. But even when we formulate the message of market economy and its culture in a less negative sense, it will still be: Go for winning.

Comprised, these reconstructions can be shown as follows in Table 1:

Table 1 Rationalities, cultures and messages of internet usage

Internet usage	Personal and social communication	Individual expression and creative action	Collaborative reasoning and knowledge production	Liberal market economy
Rationality	Communicative rationality	Aesthetic-expressive rationality	Cooperative and communicative rationality	Strategic (economic) rationality
Attitude/orientation	Understanding and agreement	Authenticity and imagination	Providing and enhancing, understanding and agreement	Success
Social relation	Symmetrical, intersubjective	Subjective	Symmetrical, intersubjective	Asymmetrical, objectifying
Linguistic category	Discursive	Poetic	Discursive, instructive	Rhetorical
Visualisation	Understanding-oriented representation	Artful representation	Illustrative, meaning- and understanding-oriented representation	Attraction, spectacle, pseudo-representation
Culture	Cooperative and individualized	Individualized	Cooperative and individualized	Competitive
Message	Respect and care	Show yourself and create beauty	Share knowledge	Go for winning

Culture Clash or Transformation

Admittedly, the above reconstruction of rationalities, attitudes, social relations, cultures and messages abstracts from amalgams that mostly are the “normal case on the net.” Certainly individual expression on Facebook or on Youtube is accompanied by the intent to be received by an audience—and received in a favourable way. So aesthetic-expressive rationality sides with communicative rationality—and can even have strategic traits (the dramaturgical aspect Habermas outlines). And while market economy is realized by human beings who do play their role as *homini oeconomici*, conforming to the necessary strategic rationality of market economy as a system with its own functional laws—human beings never completely coincide with such roles (and less even with an abstraction like the model of *homo oeconomicus*) we are moral beings, too, and our economic actions certainly are driven not only by profit-gaining, but also by interests of personal self-realization and earning the respect of others. As Mandeville made clear in his outline of the political frame and the state of society at the time he was writing, sociable and moral faculties and passions also play into our performances of our economic roles.

Nevertheless, the idealized, abstract reconstruction provided here allows a clear view of the problems that are posed by the massive onslaught of market economy on the net. By seeking to understand the principles that underlie these problems, it becomes increasingly apparent how communicative, aesthetic-expressive and cooperative rationality are

all incompatible with strategic rationality. Where one of these rationalities is sidelined with strategic rationality, normally either one of these rationalities or strategic rationality will be prevalent and mainly guide the actions. It is important to note that where strategic rationality dominates individual and social communication, individual expression, creative action, collaborative reasoning and knowledge production will not attain their inherent goals. Understanding and agreement will not take place, instead the communicative partner, when realizing the strategic impetus, will feel deceived and cheated; individual expression will be decoded as insincerity (mealy mouthed or “fishing for compliments”); produced knowledge will, at best, be seen as some sort of advertising.

On the other hand, market economy will always functionally give strategic rationality the upper hand in every economic action. In that case, communicative, aesthetic-expressive and cooperative rationality will, in all likelihood, be usurped by strategic rationality. That is inevitable, as Karl-Otto Apel shows for communicative rationality in his reflections concerning the possibilities of discourse ethics being suitable for realization in systems that are (at least: also) permeated by strategic rationality (Apel, 1990a, 1990b). He gives the example of arms reduction negotiations but names all other political contexts, too, and generalizes concerning every system dominated by social actions of self-assertion (Apel, 1990a, p. 128f et passim). The principle of this usurpation is always the same: whatever the partner guided by communicative rationality (and its inherent principle of discourse ethics) provides in the communicative action, the strategically acting “partner” will use as material to achieve his strategic goals; he will give or withhold information, be truthful or lie, whatever furthers his success; and thus he will have the upper hand in a process that his communicative partner misreads as co-operatively finding solutions. Apel’s insight can be transferred to the fate of aesthetic-expressive and cooperative rationality in strategic contexts—they will also be used as providers of material that can be strategically processed. With regard to market economy seizing the net, this principle means that personal and social communication, individual expression and creative action, and collaborative reasoning and knowledge production in an economic perspective will be strategically reduced to input that can be used for creating economic profit. The most obvious example certainly can be seen in the economic exploitation of social networks—communicative and expressive input of users seeking social communication and individual expression is strategically used for gaining economic profit, for example by constructing and selling profiles that can be targeted with personalized advertising; the liking-button on Facebook is offered as a means of personal expression (“I am also my preferences”) and social communication (“I want to show you what gave me joy”), but also is an immediate, direct production of economic data; the same way wikis mirroring personal interests, for example, in products of popular media culture can be used for economic data mining.

But that is not the whole picture. Market economy entered a “dangerous” realm with the net. Not only did it not render the enormous profits the dotcom-bubble of the nineties imagined. The structure of the net-use—that is: communication, expression and collaborative reasoning—strikes back on market economy itself. For the first time in history consumers are not passive targets nor are they even classic customers. Though market economy has

always expressed the view that “the customer is always right” on its imaginary shop and office walls, it did not behave accordingly. Instead, market economy tried to generate profits in the debit of customers—the often cited artificially shortened lifespan of the light bulb being only an iconic instance of any means market economy used (and uses) to get into the purse as often and as deep as possible (and not as would be necessary or mutually acceptable for both sides). Now the customers have become evaluators of products and can retaliate on a broad and economically relevant scale. The product-reviews on trading-sites like Amazon are important intel for customers seeking product and, at the same time, for the producers also, affecting sales figures and giving feedback about usability and quality, sometimes even the concrete wishes of the customers that can be emulated in upcoming products. Market economy is intensely affected where products can be digitized or are of a digital nature. Even before our digital age, Alvin Toffler reflected on the fact that consumers were gaining a more active, influential role for generating products in their relations with industry (Toffler, 1980). Axel Bruns extrapolates these reflections with regard to the net and states that users more often also become producers (Bruns, 2007, 2008a, 2008b). That is live wherever creative action takes place and aesthetic content is created, in non-professional journalism and (thus) social communication, but also for example in online gaming where gamers themselves create new maps, texture packs or even whole mods of existing games (Bruns, 2007, 2008b). The establishment of wikis and knowledge bases for games exemplifies the intersection of usage and production in the field of collaborative reasoning and knowledge production; the same applies to open software production (Bruns, 2007).

Evaluation and production by users can be seen as two factors that may indicate possible changes in market economy and its functional laws. That may permeate to the extra-net realm, too—wherever information technology becomes a part of products and once purely “offline” products are secondarily plugged into the net and communication processes. The latter for example starts to emerge in automobile industry with navigators and traffic guidance systems. Mercedes has announced a product line that will connect navigation with information (or in Capurro’s terms, messages)—about events of interest, gatherings of celebrities, exhibitions and vernissages and so on via a Mercedes-network. It could be the starting point of the intersection of usage and production between drivers and automobile corporations. The vital factor in these possible changes is that pure strategic rationality will then give way to communicative, aesthetic-expressive and co-operative rationality. That may perhaps incite a transformation in the culture of market economy. Instead of competition, cooperation could be the new paradigm by which success is achieved and cooperation would then not be dominated by strategy. Rather than economical cooperation being considered only viable where it furthers narrow strategic interests, economic interests would only be created and gathered where co-operation succeeds. Cooperation could seize strategy—and thus open up possibilities of a real mutual steering of the economy where all those affected by the economy, the stakeholders in a broad sense, would guide the economic processes to real and universal public benefits. We then would witness a new, socially productive message in economy: go for co-operation, if you want to win. Our ecologically tormented

planet and our societies torn by stratification and the ever-increasing gap between rich and poor could certainly use that transformation.

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Magicians and Guerrillas: Transforming Time and Space

Juliet Lodge and Daniel Nagel

Abstract

Technology allows us to engage in all kinds of activities any time, any place. These range from mundane web browsing to online purchases, accessing services, inputting information, online chatting, leisure and monitoring our own health. They also include the potential for something or someone to follow our online engagement. This paper explores the tensions and ethical issues that technology throws up as we engage with digital devices and so express, what may very loosely and misleadingly be termed, our digital 'lives' and 'selves' in time and space. We proceed by drawing on the allegorical form that Rafael Capurro so often uses to help us understand complex issues. Accordingly, we juxtapose the metaphors of magicians and guerrillas to tease out some of the issues arising from our digitally enabled existence.

“But that’s not what’s worrying me. It’s how to do it. These things
must be done delicately... or you hurt the spell.”
(Baum, *The Wonderful Wizard of Oz*, 1900/2000)

The spell of modern ICT has not only led to the world becoming both a smaller and, at the same time, an unthinkable bigger place but it has shaken the very foundations of how we lead our lives and who we are in the digital age. We can present ourselves in different dimensions and different guises using all manner of fabulous wearable or implantable technologies. It is no longer simply a matter of magicking up for ourselves an avatar representation of our own ideas in an imagined space or game. Today, we are increasingly required to offer digital tokens of our physical characteristics (such as a digital photograph, the facial biometric, or a fingerprint or other biometric) as part of the information we have to supply in order to access a public, private or leisure service. The imagined or fictitious world of games that we choose to play acquires a real time, real world reality. Occasionally that imagined world transforms the virtual into the tangible, as in the case of purchases using virtual currencies:

it can also reveal itself in real world darksides, where malevolent virtual players threaten our engagement with the real, tangible world in real time and beyond.

The decision about maintaining control of how we present ourselves or, to put it differently, what we conceal and what we reveal (cf. Capurro, Eldred & Nagel, 2013), is complicated by increasingly automatized ‘social’ interaction and ‘security’ features created to serve humankind. In particular, if regard is to be had to the lack of awareness and transparency (which is all too common or even intended in a ‘magical’ world) we can experience the very spell as a curse. Suddenly, our glittering world is marred by a creepy theme: Has the spell been secretly redrafted by a wicked witch and if so, what is the magic potion to reverse it? As we do not have Dorothy’s silver shoes (or, after the invention of colour television: ruby slippers) to escape back to the old world (sorry, Kansas), Rafael Capurro cynically suggested that potentially learning to lie would safeguard survival in a digital environment (Capurro, 2011). This approach would, however, first and foremost require learning to contextualize it, as Capurro points out (Capurro, 2007) and—as technology itself is not limited by political or cultural borders—to bear intercultural aspects in mind, (cf. Capurro, 2015) if we do not want to face the very dilemma of Lear’s folly: “So out went the candle and we were left darkling” (Shakespeare, *King Lear*, I.4.213).

We would suggest that the answer seems to lie somewhere between the extremes of a digital guerrilla and a magician in order to navigate safely and swim against the tides where necessary. Or as the Wicked Witch of the West taught us: “The last to go will see the first three go before her. And her little dog too” (Baum, 1900/2000). Let us explore the digital magician and guerrilla in time, and space, using the chart the wise Wizard of the ‘Provincia Oriental’ handed out to us.

1 Preface

“A man may see how this world goes with no eyes.
Look with thine ears.”

Shakespeare, *King Lear* IV.6 151

A woman meets the recipient of her brother’s transplanted face. It is recognisably him, almost. In Shakespeare, in the sixteenth century, deception, self-deception and illusion are recurrent themes. Gender disguise and inversion are a common ruse. Masquerading as someone else forms part of the drama, part of the mystery and part of the fun of discovering the identity of the person behind the mask, the protagonists having perhaps first learned something of the same person’s character through his/her behaviour. In a popular British talent show, the winning act—a dog—is subsequently unmasked as a fraud having used a “body double” for one of the stunts. Interestingly, the dog’s name was Matisse. His namesake in turn was publicly opposed to using masks, albeit in respect to painting (cf. Raymond, 1953).

Credibility and gullibility are two-sides of the same coin. The authenticity of a genuine identity has to be unmasked and proven in both Shakespeare’s dramas and in reality tele-

vision shows (Lear, Edgar and the Fool depict the various embodiments in respect to their apparent madness, reaching from genuine over fake to professional). But what is it that is being unmasked in either case? Is it the gullibility of the onlooker, the tawdry deception of the person in disguise, human motives and human nature as perceived at a given moment in time, a particular point in history? Perhaps the entire exchange is a game in which the deceiver and deceived are complicit. Such complicity for entertainment purposes rests on some appreciation that the life depicted is not real, but a fantasy. Yet, the fantasy of 'reality television,' social networking and media involve ever more duplicitous fantasy, deception, projection of avatars and of the self in many guises—the party animal, the intoxicated student, the imagined life of anyone using code to log on and act out an online life in an online world. Such constructed life guises may be amusing, entertaining, benign or malevolent, singular or collective, bearing some resemblance or none to the given stated authenticated identity of a real person in real time.

In the case of digital revealing and concealing, 'identity' takes the form of computer-generated code, raising the above question of authenticity to another level or, in the words of the wonderful wizard of Oz "making believe" (Baum, 1900/2000). The conundrum remains as to who or what demarcates one such 'identity' from another, but is made more complex by the added ontological digital dimension. What or who gives digital identity its individuality, its relative uniqueness that enables its separately coded character to be both 'part' and 'apart' from others in the same way as its human counterparts? From a technical perspective, the 'what' may be human or humanoid, an external robot, an implanted chip or another string of code fashioned by a human programmer or at least derived from a program originating with a human mind, but the ontological question of the digital identity's 'being' yet remains.

Technological innovation to accelerate communication, via apps of all description, for therapeutic, bureaucratic, medical, leisure, entertainment or convenience purposes, impacts our understanding of time, disrupting our comprehension of what it means to be human in a digitally connected world where the possibility for real-time connectedness overcomes traditional limitations of space and time via an ever-growing cyberspace. In light of the potential impact of such a drastically reformed ontology, the question must be asked, is such technological innovation the great liberating force of the age, *or* does digital capture make us anything but free? Does the digital apprehension of our being enslave us via an inauthentic interface with reality?

The linkage, leakage (Perta, Barbera, Tyson, Haddadi, & Mei, 2015), commercialization and commodification of code along with the greedy consumption and manipulation of big data capitalizes on the promises of technological innovation, including the promises of digital identity. Yet, where the identification of a person or substance is concerned, the idea of digital code providing absolute certainty over claimed identities is both portrayed as the holy grail of identification technologies and as a deception itself. If the digital code cannot provide such certainty, can code provide insight into who and what we are above and beyond traditional definitions of being? Authenticating and verifying human identity through code is infinitely mutable and therefore infinitely open to deception. Yet, derived

as possessing ontological potential, code, whether single or multi biometric is paraded as a symbol of certainty, as a token to be trusted speedily. However, one must wonder if such a quick and blind faith in the certainty of code doesn't erode the importance, relevance and value of the unsure but very necessary prerequisites to real life learning and experience, and eroding also the role of reflection, consideration, analysis and human thought in the process (cf. Capurro who rightly points out that the experience of reality is shaped hermeneutically by the available technologies, while at the same time technologies are adapted to the way reality is interpreted [Capurro, 2012]).

Do reality television, the alleged certainty of biometric authentication, 'healthy apps,' gadgets and robotics, smart environments and smart clothes enable and foster an uncritical thinking environment? Do they legitimise unthinkingness? In saving an able-bodied sentient human the inconvenience of thinking about discovering or doing something for her or himself, do they erode the ontological foundations of identity and save him the inconvenience and effort especially of thinking? Do they imply that effort is valueless? All the above technological innovations possess fabulous therapeutic potential for the disabled, the incapacitated and the marginalized—those, incidentally, who are often least able to afford *or* access to them. In the case of those less fortunate, do they potentially build up ontological foundations of identity, assuming access? The ethics of assuming that every human has a digital identity begs questions of the digital divide where such technology becomes seen as the right and a legitimate expectation of those with the means to access it, namely corporations, the wealthy, financial institutions and the state, but of which the discrepancies of injustice are quite often conveniently ignored outside the vested interests of said power structures. Likewise, concern with digital identity is given value to and by those to whom access and means are granted. The morality of making such technology the plaything and expectation of those able to access them, whether by theft, fraud or by dint of economic means, rarely bothers society, except when theft and impersonation affect an individual, or a corporation, a financial institution or a state. Does this leave the digital space of the digitally impoverished the playground of guerrillas? Or are those so impoverished inactive pawns in a digital world?

Deception and self-deception are leitmotifs of magic; of all discovery; and of all fraud. What is the reality of such deception? Where is the magician to unveil the deception, self-deception and delusion, illusion and gullibility of a digital age? Is the nano-cloak which renders a person or object invisible merely just another means of extending deception? The superficiality of the external appearance of the self masks an internal world of many selves that constitute what an individual likes to think of as him or her 'self.' The external appearance is a face that expresses the chosen presentation of the self, and thus conceals or unveils the many hidden selves where each is validated, confirmed and somehow authenticated by others seeing and validating that external face. The loci of those others have now been transformed. They coexist in cyberspace with geospatial real time places.

2 Where's Home?

“And I’m not gonna leave here ever, ever again,
because I love you all, and—oh, Auntie Em—
there’s no place like home!”

(Baum, *The Wonderful Wizard of Oz*, 1900)

The questions *who am I?* and *where do I belong?* beg reflection when the ‘home’ has ceased to be the private sphere controlled by its inhabitants. The intrusion into the private space of home arises from dissolution, the growing ubiquity in some societies of people being perpetually online anytime, anywhere, dependent on cyber programmes housed somewhere in the ‘cloud,’ run automatically by invisible ‘computers’ and applications whose ‘masters’ are unknown, whose location is often unfathomable, and who are subject not to the vagaries of democratic controls but to their own creators’ and successive programmers’ proclivities and caprice (or to put it differently, except in the EU “The Internet does not stop at national borders. Legislation, unfortunately, does” [cf. Del Duca, Kritzer & Nagel, 2008]).

The Internet of Things, ambient intelligence, smart everything, personal drones, self-correcting robots and the incipient emergence of a global network, misleadingly dubbed the ‘global brain,’ symbolise digital existence but depend on renewable, sustainable energy and, today, critical infrastructures. Opinion is divided over whether this is a ‘good thing’ for the betterment of mankind or a goldmine to be plundered by nasty, brutish, avaricious, self-seeking criminal organisations, perverts, traffickers, terrorists and sundry nefarious villains. Governments and law enforcement agencies whose remit is to protect their citizens and states cannot legislate fast enough to keep pace with the rafts of digital code and intrusions criminal organisations commit or the resources they are able to muster (as, unlike the wicked witch, such organisations cannot easily be tracked down, due to a lack of winged monkeys [even Fort Meade cannot replace them]). Each public sector step into probing online lives, whether collecting metadata from emails or deep penetration of the Dark Web and its brothers and sisters, invites questions as to the necessity for such intrusion into ‘privacy.’ Surveillance and *sousveillance* conspiracy theories as well as demands for complete openness begin to divert attention from the accelerating transformation of societies across the globe. At their naivest, they obscure and even obstruct discourse over traditional diplomatic endeavours founded on legitimate government secrecy. Yet secrecy and privacy could—in an ideal world—be warranted in both the private and public sphere, and for purposes that a reasonable person would accept.

This is but one aspect of the continuum of transformation in society facilitated by the new technological apps and potential for using technological innovation for the common good. This is not about balancing security and privacy but seeing them as part of the liberty-security continuum which is itself informed by the deeply rooted idea in European culture that knowledge is a key to liberty and subject to constant reappraisal (Lodge, 2007). It is also about recognizing that in the mass of data, there may be ways to examine it and find solutions or legitimate solutions to some of the ills that plague humankind (if such proper examination is actually carried out to avoid the ‘Titanic Phenomenon,’ cf. Solove,

2013). This is about more than the notion of having nothing to hide. It is about fundamental ethics to guide humankind. The principle of ‘do no ill,’ so cogently presented by Capurro over the years and notably in relation to human dignity and the right to the integrity of the person, (European Group on Ethics in Science and New Technologies, 2005) should inform such endeavour. Can our magicians, our kings of illusion and deception (at least for our amusement in the 21st century) carry that off?

On the other side of the discourse, one notes the arguments advocating the potential to stimulate the emergence of a collective intelligence, one which proponents, sometimes overly naively, assume will be self-correcting, creative, even beneficent and well-intentioned towards a common good rather than inward-looking, self-seeking, selfish and obsessed with maximizing personal wealth (or that of an oligarchy) at the expense of the masses.

Collective intelligence has a counterpart in collective ignorance. It can be wilful, lazy or despotically contrived. To facilitate it for collective benefit demands investment in collective education, in analysis, ratiocination, quizzical dissection, informed innovation and a commitment to the common good.

3 Is a Moral Code and Ethics Relevant or Possible in Cyberspace?

“The dark and vicious place where thee he got
cost him his eyes”
(Shakespeare, *King Lear*, V.3 170-1)

Distributional politics and ideologies in part shaped by an appreciation of life in the real world of real time experience and human-to-human contact and discourse may become transformed by virtual encounters and group-think (Lodge, 2012c). However, the question must be asked whether collective intelligence can be informed by shared morality and ethical codes conducive to producing the good society. In that society, would recognition of the individual versus the collective be as relevant and as problematic as it is today? In a society where everyone had equal resources (economic, health, intelligence, quality of life) would the individual tokens of identity that allow transactions be the obsession they are today? (Scheule, Capurro & Hausmanninger, 2004). What society is being created by digital toys? And do we deceive ourselves as to their potential omnipotence?

Verifying and authenticating the subject of our contemporary obsession, that which is misleadingly called ‘identity,’ relies primarily on externally observable features: face, eye, iris, finger, gait, voice, palm, age, ear, vein, temperature, behaviour, etc. Biometric technologies can ‘capture’ such features, and hold them in ‘biometric applications’ and tokens that an individual can present to human authorities such as border or migration agents at an airport or their robotic counterpart, the automatic e-gate. The use and purpose behind such applications raises concerns that go to the heart of the ethical issues that Capurro has raised over the years.

Is this the age of illusion or honesty? Is the greatest self-deception the rhetoric of transparency and honesty, revelation and self-disclosure, all of which imply secrecy and concealment (cf. Lodge, 1994), all of which imply a hierarchy of knowledge and, in the case of online search engines, convenient access to the ‘answer’—the oracle? Whether the answer is authoritative, truthful and objectively verifiable as authentic and reliable ceases to be part of our understanding of how we acquire, create and comprehend knowledge. The commonly created and accepted knowledge of the masses, no matter how ignorant and ill-informed, takes precedence over objectivity and scientific inquiry, ratiocination, independent reflection, independent thought and ultimately the thoughts and reflections that many in western democracies have grown up believing constitute part of their relatively unique individual identities. Rafael Capurro has championed an understanding of how different societies are constructed and how they view the role of individual persons within their society. However, the leap in quantum surveillance facilitated by apps in the smart Internet of Things (IoT) and the smart environment begs questions about society and privacy, rights enshrined in constitutions, bills of rights and law. It also raises the spectre of dystopian societies where individuals are subservient automatons, whether acting as ANTS predict or absorbing whatever yet another app or smart robot emits (cf. Lodge, 2010).

At the heart of the concerns raised above is a question about the speed with which the public has acclimatized to, rather than actively reflected on and accepted, such dominance of technology. One might question, perhaps, whether science and technology have engendered a level of assumed acceptance and compliance that results in an inertia that itself minimises their objective evaluation. This is unlikely to be the case. Is it more likely that people are either too lazy or too busy to reflect and think critically for themselves? Is critical thinking and individual thought a luxury to be indulged in by but a few who do ‘care’ about what they are told, whether by robots, commerce apps or governments? Or is it that true understanding of the thinking and the nature of the technology behind the apps and the robots is lacking, that people—governments, individuals and even technologists themselves fail to understand that at the heart of any app lie the preconceptions and biases of the person who engineered it (cf. Lodge, 2009)? Moreover, the holy grail of ever faster, automated information exchange rests on the assumption that human reflection and intervention are irrelevant to the decisions being made (Lodge, 2012). For Rafael Capurro, autonomous robots not needing human guidance for specific tasks were the aim of engineers (Nakada & Capurro, 2013). Self-correcting, learning machines are another iteration of this. The risk is that humans cease to be aware of the primary human intention underlying the application—aka robot—that automatically gives or denies us access to something. An example of this is ‘border control,’ whether territorial or virtual (Capurro, 2012).

If the original code behind any digital program ignores the moral and ethical implications of the applications to which such code might be adapted, that is not a reflection of the failure of science to anticipate the future, but rather a reflection merely of the intrinsic ideological biases and preoccupations of the creator.

The paradox is that the clamour for ever greater speed in creating ever greater ‘certainty’ denies the attributes and benefits of cumulative experience (whether in experiments and/

or over time) and wisdom (Lodge, 2010). It snips away at the time and space available for learning and thought. It encourages people to click a button, get an 'answer,' a product, a form, a ticket, anything that they want or might have to acquire at any point in time. In some cases this might mean something quite mundane and insignificant. In other cases, it may be in response to denial of service threats or demands from despots, corporations, villains or extortionists. In extreme cases, it may even deny or jeopardise western democratic practice and values. The problem is that the clamour for speed and instantaneous gratification dissociates human action from reflection. Transitory, immediate gratification is applauded as the god of convenience, monetarised and prioritised.

This in turn alerts us to the nature of authority, trust and reliability in contemporary life (cf. Hern, 2014). Surveillance by governments has provoked public distrust in some societies. Entrapment ad-tracking by commerce and social media have also gradually attracted public attention, but evading them was and remains exceptionally difficult, (Weimann & Nagel, 2011) and—as Microsoft's Windows 10 facilitates, and social media giants insist—this is intentionally so. Denial of service to those refusing cookies (the term is revealing, connoting a treat) or refusing or being unable to use or access online services incurs occasional comment. Denial of service attacks on corporations and financial institutions, coupled with intrusion, come to light as inconvenience or subsequent breaches of data privacy and data protection laws and obligations. More recently, social media giants have even refuted the relevance of privacy requirements for their activities outside the EU, regardless of the EU's regulation on processing of data of EU subjects. In August 2015, Google suggested that applying EU law was necessary only on its EU websites, not on google.com, implying that the right to be forgotten had, in effect, the status of a directive to be interpreted differentially according to location (Teffer, 2015; Hern, 2015). All such objections are pushed to the side, minimized and shown as the inevitable price to be paid for the convenience of instantaneous gratification offered by the apps.

Doesn't psychology show that deferring or delaying instant gratification produces individuals able to be more tolerant of real time, of difference, of dissenting voices and ideas, of engaging civilly with others? Is this to be sacrificed by the apps in the same way as the rudeness of ignoring one's companion while engrossed in a sudden tweet or call from a social media 'friend' has become normalised—the head-down reading-a-smart phone person is commonplace. The illusion of 'reality' in the social media space *de-places* (by displacing and replacing) the real time reality and quality of walking down the street; the smart screen Mount Kilimanjaro climb on the treadmill at the tiny gym is supposed to encourage self-improvement in ways that a walk in the park—with the inconvenience of real weather—may not. Indeed, in urban environments, green space may long since have disappeared under concrete. Yet the virtual reality of that increasingly privatised, commoditised space so enticingly captured on-screen cannot ignite the calm within the brain of an individual who has never experienced the genuine article: at least without the haptic avatar.

And yet, in the deceiving space of self-improvement and convenient super-tekky lifestyle, the seeds of discontent are sprouting: tech-free days are celebrated as liberating by the

chattering classes who revert to them after their day in tekky purdah. There is an indicator of what it means to be human: choice. Tekky-free days by choice may be feted. The random outages and denial of service attacks, loss of convenience caused by hackers, lost credentials and cyber identification, theft and malware—all of which produce tekky free time—are not merely inconvenient. They deny choice: ultimately, they rob those affected of the capacity to engage in modern society, and not by their own choice but rather by some automated string of code going AWOL, by malevolent intrusion, theft and critical energy failures.

Choice is also denied to those who either lack access to or refuse to use e-services for whatever reason. Yet one of the possibly more insidious myths perpetrated by governments and private sector e-service providers is the somewhat exaggerated claim as to the trustability of apps. A comforting illusion feeds the alleged public hunger for convenience that in e-service cyber space a person is pretty much in control of their data. The exponential increase in fraud in financial e-services contradicts experience. Not only is cyber intrusion into e-government, e-banking, e-financial services and e-commerce rife but it is also widespread in e-health, education, welfare, industry and so on. Who is in control? (Lodge, 2015). Is our technology trustworthy? Are the data handling practices credibly robust against data loss? Are they dependable, secure and trustworthy?

While transparency may be paraded as an antidote to declining trust, it readily seeps into the white noise of sales rhetoric. Safe harbour agreements and data protection laws, contracts and agreements are so diverse and impenetrable to most of the public as to be discarded or read only when an identity token is lost, stolen, corrupted or service denied, legitimately or not— invisible data linkage, data mining, splicing, re-sale and denial of access to those not agreeing to terms and conditions by default or pseudo-explicitly risks making a mockery of trust in technology, privacy by design and privacy by default. Summer 2015 saw social media giants edging towards flouting public requirements to adhere to privacy regulations. Who is in control? Who is accountable? Who, or what code, can be trusted as genuine, authentic and trustworthy? Why should more trust adhere to a fingerprint scan as a reliable token of identity than to the real live person? If a fingerprint scan is no more than a substitute PIN, then what is its standing where law is concerned? And how does that compare to the person's standing?

The fallacy of uniqueness, regarding for example biometric identity tokens, is overblown. Cloning and even simple spoofing of fingerprints, let alone claims to 'own' the fingerprint (disputed in a US circuit court in Virginia in 2014) begs us to think. Original enrolment procedures, storage, handling, administrative failures, degradation, obsolescence, legacy incompatibilities and debilitation as well as intrusion and theft degrade them and make them unusable, even for government applications. Replacing a lost biometric identity token, such as an ID card, is far from simple or swift: proving one's authenticity and genuine, credible claim to being who one has been brought up to believe one is since being issued with a legitimate state birth certificate (in countries where this is commonplace) remains tortuous (www.europol.europa.eu/ec3; and International Cyber Security Protection Alliance, 2012).

Who can be trusted? There is widespread public ignorance and a shallow grasp on why and how we trust people outside our immediate circle. Social media and financial service

providers have tried to persuade the public that they may be more trustworthy as protectors of a person's identity claims and token than perhaps governments. But while this claim is wearing a little thin, there is the paradox of people either claiming to be 'not bothered' by anyone anywhere accessing their data without their explicit consent (but readily bothered by denial of service inconvenience) or unthinkingly using the most convenient search engine regardless of its potential to dominate what the public sees, hears and regards as 'truth.' Those with sufficient resources to be the 'top' search engine, for instance, may have the potential to manipulate what the public should accept as 'truth' or otherwise. Are there echoes of big brother, propaganda, oligarchy and potential for the abuse of e-power beyond the sphere of cyber warfare? (Lodge, 2012a). After all, many governments lack sufficient resources to lay claim to be the ultimate, visible locus of credible and trustworthy authority in cyber space. Europol's Cybercrime centre has suggested it become more visible online "to increase public confidence in the security of the internet and offer a credible deterrent to criminals," but few know of it, let alone trust it. That is one of the reasons why now, in Europe, there is growing interest in trustmarks validated by independent bodies which have a credible track record. Even so, the resources needed to keep pace with technological innovation, misappropriation and misuse far outstrip those available to public sectors, as the EU Commission admitted in August 2015 (European Commission, 2015). So when humans refer to honesty, secrecy and openness, delusions and self-deception are they complicit? Are they the masters of their own downfall? Or slaves to autonomous robots and strings of infinitely manipulable code?

4 Honesty, Secrecy and Openness, Delusions and Self-deception

"Never enter your real data"
(Capurro, *IRIE* Vol. 16, December 2011, p. 74)

Rafael Capurro often illustrates his points through allegories and references to works where deception is rife: Alice in Wonderland's Cheshire cat; Shakespeare's King Lear, for example. Concealment and revelation, deception and real-life, and real time honesty were leitmotifs in Shakespeare's England where disguise was rife, and allegory a means to criticise legitimately government excesses while minimising the threat of often fatal redress.

In the modern dystopias of the second Elizabethan Britain, is the loss of self perhaps less physical but an omnipresent metaphysical but often unimagined, and therefore more insidious, threat? Or is it time for other cultural understandings of the relationship between society and the individual, other hierarchies in values to shake us up? Can the loss of self or the understanding of a self be limited to the western understanding of this notion? Rafael Capurro always tries to encourage us to look further than the comfort zone of traditional western beliefs (Capurro, 2016). There is a lot to learn from other cultures and even more to be learned when the various approaches are compared. ZEN-Buddhism, for instance, teaches us that the experience of the absolute nothing precedes thinking. Hence, it is nec-

essary to follow Rafael's path, take a step back and reflect before a verdict can be reached. This can save eyesight in dark and vicious places and lead to insightful conclusions, as, for example, the conclusion that communication does not necessarily need to be a face-to-face phenomenon but also takes place back-to-back (Capurro, 1999).

And yet, uneasiness remains over making free with the idea of 'having nothing to hide.' It is not comparable to the popularly mis-attributed (to Marx) pithy saying "you have nothing to lose but your chains." Having nothing to hide is not the same thing as in effect giving blanket permission to anyone anywhere to (ab)use and misuse personal 'information' that is generated unconsciously by the second by each and everyone of us. Ignore the relevance of linking information to a particular individual and kinship, family, friendship groups and ultimately community and society begins to unravel: for then, nothing can be trusted as genuine, real and credible. This is something more than an expression of ownership of an identity such as that which has been officially endorsed and legitimised in a state-issued birth certificate or identity document.

So, do our magicians and guerrillas have a special role in transforming time and space? Capurro warns us that learning to lie is critical to self-preservation in a digital world, where, in order to navigate safely and, like the Shakespearian disguises of old, swim against the tide, we must better understand the nature of revealing and concealing. Can lying be reconciled with the principle of 'do no ill'? Can our magicians, our kings of illusion and deception (at least for our amusement in the 21st century) pull that off? Or will guerrillas take all? The answer is a clear—and from a legal perspective logical—"it depends." And that, unless you are dealing with the law, is far from comforting. Context, therefore, is but a beginning and it is certainly not an excuse for permitting strings of code from autonomously 'doing' something that is potentially harmful (whether deliberately so or not) to humankind, and intrinsically open to applications that are equally harmful and unethical, especially if misappropriated from, skewed or interfered with to corrupt their original innovative, benevolent or therapeutic purposes.

We are empowered to try to make a difference if we follow the map the wise Wizard of the 'Provincia Oriental' handed out to us: not necessarily only in a literal sense but in the sense of avoiding unreflected action with no regard to possible technical but above all, ethical and cultural implications. Thank you, Rafael, for making sure that the potentially dark and vicious places do not need to cost us our sight.

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Gramsci, Golem, Google: A Marxist Dialog with Rafael Capurro's Intercultural Information Ethics

Marco Schneider

Abstract

The purpose of this paper is to explore in which ways and how far Rafael Capurro's intercultural information ethics can be fruitfully articulated with Marxism. We analyse some of Capurro's papers on intercultural information ethics and on robotics, along with György Lukács's criticism of the philosophical categories of the universal, the particular and the singular. We link this approach with Terry Eagleton's proposal for classifying and thinking about *all* Ethics amidst the three dimensions of human psyche (the symbolic, the imaginary and the real) according to Jacques Lacan's schema. Finally, we use the legend of the Golem as a metaphor to think about the subordination of *living labor* to *dead labor* and the cultural rapports between intellectuals and the working class. These rapports are taken from Gramsci's work. We believe that an intercultural information ethics can only be strengthened if it does not leave outside its borders the complex and not often obvious imbrications between ethics, culture, information, technology and social class.

Rafael Capurro's intercultural information ethics is, first and foremost, a general intercultural ethics. That is to say, that before and beyond discussing *information* ethical issues, he establishes the conditions to do so, questioning the epistemological and ethical claims of western thought to have achieved the highest possible level of rationality and universalism. Recent history emphatically denies this claim, if we only remember colonialism, modern slavery, imperialism, environmental collapses and all kind of massacres and slaughters that took place during the last centuries in the name of civilization, justice, freedom, human rights and so on. Somehow, these beautiful words tragically became euphemisms to justify western white men's paternalist ethnocentrism, instrumental reason or, to put it in Heidegger's terms, *Gestell*.

Second, for Capurro, it is not possible to think about any universal ethics, if this means that to do so also means ignoring the richness and complexity of so many particular ethics around the world, with their singularities, similarities and contradictions. Ancient people already knew human cultural diversity, but not as we do. The fact that, for the first time in human history, a wide variety of societies and cultures are living in a concrete, common

and synchronic history poses new challenges to any claim of universality in our interconnected, interdependent world.

Third, such a synchronicity would not be possible without the current stage of development of digital technologies of information, and it is from here, we believe, that there emerges the importance of information in Capurro's intercultural ethics project. The ubiquity of the digital in today's societies has deeply changed all aspects of our lives; its effects, risks and promises should be of central import to all who are concerned with contemporary ethical questions. Nowadays digital technologies of information, its basic pair *zero/one*, represent the actualization, in any conceivable form—internet, mobiles, robotics and so on—of the most elementary formative structure of information; information is the process of shaping reality in all its aspects. As a result, and due to its centrality in shaping our contemporary reality, digital information must be at the centre of any ethical theorization and practical commitment that purports to deal with modernity.

Fourth, we should not limit ourselves when dealing with such issues, either to a general abstract level of analysis or to any immediatist, pragmatic one (in the weak sense of the word). On the contrary, we must be able to articulate hard philosophical reflection with precise empirical studies and actions (in Marxian terminology, this articulation is called *praxis*). This is our understanding of Capurro's intercultural information ethics in its most general shape. We intend to contribute to it at two levels of analysis: 1) a philosophical one (dialectical materialism), and 2) a socio-historical one (historical materialism).

At the 1) philosophical level of analysis, we will think about ethics from a dialectical perspective, considering the old question of the rapport between the universal, the particular and the singular. The universal, here, designates meta-ethics; the particular, different ethical systems, including deontology; the singular, concrete possible actions. This approach also articulates these three categorical pairs with the symbolic, the imaginary and the real, that is, with the three-part structure of the human psyche (according to Lacan) and with reference to Eagleton's (2011) insight about how these Lacanian categories can be useful to ethical thought.

At the 2) socio-historical level, we first problematize the notion of culture as a monolithic entity, highlighting its inner divisions and contradictions, from a critical point of view, relating culture to economy and history. It leads us to the necessity of updating the complex links between culture, social classes and class struggle. Second, we update the discussion around technological determinism and human agency, from the legend of the Golem to some of Capurro's quotations on roboethics (2009, 2011, 2015).

Towards a Dialectical Intercultural Information Ethics

Lukács's *Introdução a uma estética marxista* (1968)¹, besides its focus on aesthetics, aims to understand the different ways in which scientific (and philosophical) knowledge, aesthetic knowledge and knowledge of everyday life deal with the categories of the universal, the particular and the singular, and with their potential referents. Briefly speaking, science and philosophy are concerned primarily with the dialectics of the singular (phenomenon or theoretical object) and the universal (law or *raison d'être*), leaving the particular (typical) the mediating element.

For aesthetics, or rather for the aesthetic kind of knowledge produced by art, the most important is the dialectic of the singular and the particular, and the dialectic of the universal and the particular. The particular, here, is the point of arrival, it is different from the universalizing abstractions of science and philosophy that lose sight of the sensitive uniqueness of the singular, and it is beyond mere naturalistic copies of singularities which are not mediated by their particular universalizing potential.

Finally, common sense confuses the universal, the particular and the singular too often, as far as it moves away from the mechanical, ordinary actions of our routines. All kinds of false generalization, reductionism, prejudice, and fanaticism are somehow the result of such confusion (Lukács, 1968; Heller, 2004). To avoid it, one should operate these categories as precisely as possible, in their dynamic relationship. In the first place, this means that something is universal, particular or singular only in the context of the relationship between each one of these terms with the other two.

In other words, the understanding of the relationships between the most general or abstract (*the universal*) aspects of a being or of a concept with any single phenomenon in space and time (*the singular*) should shape any attempt at a rational analysis. In this context, the singular is always a more or less representative part (*a particular*) of a whole. The level of abstraction of any analysis will determine, at each moment, what is universal, particular or singular. Even an individual is a universal, composed by a singular genetic code, which is, at the same time, a particular configuration of universal human genetics; this same individual can be a singular student, among a particular class of a school (the universal, at this moment). We could apply the same reasoning to talk about the relation between a country, a street and a house; or between someone's personal opinions about what is right and wrong, the law of his tribe and universal human rights; or take universal human rights as a singular statement, a particular of all existing ethical discourses and so on.

Secondly, one should be careful not to overestimate unilaterally either the universality, the particularity or the singularity of any phenomenon, being or thought. As explained above, we can only understand the true nature of whatever we are concerned to in its dialectical relationship with what it is not. This relationship determines what the phenomenon (being our thought) is. By considering it, we can avoid the mistake that one can find truth—any

1 This is the title of the Brazilian translation of *Prolegomeni a un'estetica marxista* (Editori Riuniti, 1957).

truth—either in the universal, the particular or the singular. In general ethical terms, as already said, the universal relates to meta-ethics, the particular to ethical systems, including professional deontology, and the singular to concrete actions.

Eagleton (2011) suggests that all ethical thoughts can be linked, in an approximate way, to one of the three Lacanian categories that structure human psyche: the symbolic, the imaginary and the real. We argue that these three categories can be associated with the universal, the particular and the singular.

The symbolic tends to the universal, because it relates to abstractions, systems, structures such as language or law: to what is below and beyond the singularities or particularities of empirical phenomena, including that of concrete human beings or discourses. It establishes relational positions that condition and rule, as a universal, the limits and potentialities of any singular or particular action and thought. The universal is the most general conceivable concept, being or formal structure behind particular or singular empirical terms, phenomena or models.

Thus the symbolic tends to the universal but one should not neglect the particularities of the many singular symbolic orders—languages, laws, cultures—produced by real people through history, nor the limits of its productive and repressive efficiency. Nevertheless, from this perspective, particulars are universals. We link approximately the imaginary to the particular, because the former deals with identity, with being part of a whole, as a mirror game that can only exist through relation, between one and other(s), sameness and otherness. It includes the other(s) of oneself, its own otherness; the relation between one and what one is not. Between identifications and their opposite, it is an inner, subjective and, at the same time, external, intersubjective mirroring game, that contributes to the symbolic, in tense dynamics, to form our fictions of ourselves, our fragile self-images.

The real is only definable in a negative way. It refers to every “pure” singularity in human psychic life, in its most extreme uniqueness, that is not and cannot be completely captured by (nor fixed at some stable relational position at) the order of the symbolic, nor adequately represented nor truly played (except roughly, by mimetic processes) amidst the phantoms of the imaginary. It is difference in its most radical being.

By way of example, the Kantian deontology seeks the universality of the symbolic order, whereas any consequentialist or attractive ethics seeks the particularity of probable effects or affections. Everything that cannot be captured by these formal or sensible issues—Nietzsche’s will to power, Kierkegaard’s jump into the mystery, existentialist freedom or authenticity—are related to the immeasurable, impossible to represent, singular movements of “the real.” How can such a scheme be useful to think about information ethics, especially intercultural information ethics?

We propose below the possibility of exploring the common division between ethics as meta-ethics, ethics of a particular culture or profession as well as concrete single moral actions in information practices and thoughts, which imply decisions and options, and can be enriched by the following ideas:

1. None of the three (meta-ethics, cultural / professional ethics and actions) could be rigorously developed without considering its dynamic and contradictory relations with the others;
2. No reasoning that aims at establishing a coherent and true ethical system should ignore the complexity of the human psyche in its dialectics with the human body and with the symbolic order(s).

How could and should an intercultural information ethics praxis be developed through this approach? In the first place, this approach considers the contradictions between the universal (symbolic) and the particular (the imaginary) in light of the traditional contradiction between universal values and particular morals. Second, we should consider the contradictions between singular-concrete-living-individuals, groups or corporations and entire societies. Among these “groups,” social classes deserve a special attention.

At this point, we must address the work of Marx. According to Marx the reduction of human subjects to objects, resulting from the universal exploitation of labor, in all its particular and singular forms, is ethically unsustainable. The corollary of this exploitation is violence, irrationality, the abortion of the individual’s creative potentialities for self-development, for solidarity and well-being. This reduction can (or should) be concretely surpassed.

Class Struggle, Robots and Culture

Why did Marx and Engels consider class struggle a central question for our understanding and possibility of interfering in human history? To what extent are these issues still relevant, especially as concerning Capurro’s reflections about intercultural ethics and robotics? According to Aristotle’s *Politics*, slaves would not be necessary if robots existed (Capurro, 2015). The Czech word *robota* means hard work and servitude (“Robot#etymology”, 2015). Capurro also suggests that robots represent a projection of what we would like to be and be able to do.

Marx’s hypothesis (Marx 1867/2002, 1867/2003, 1939/2011) on the tendency of constant capital (dead labor)² to increase in the context of the organic composition of capital³ as a whole indicates a prevision of the automation of the productive processes in course (including the production of immaterial or symbolic goods such as software). This tendency

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- 2 “Constant capital” designates all means of production, i.e., raw matter and “dead labor” (means and objects of production already produced), except “living labor” (people working), that is the variable part on the organic composition of capital.
 - 3 The “organic composition of capital” means the description of all the elements that compose capital, in their dynamic relations: constant capital, divided in fixed capital (means of production, factories, machines) and circulating capital (objects of production, raw matter, tools, money, commodities) and variable capital (working power: brain, muscles, nerves applied in a productive process).

takes place amidst the historical dialectics between productive forces and relations of production⁴ and results both from the working class struggle against the exploitation of surplus value and of the joint effort of the many existing capitals to increase productivity. The latter forces all capitals to replace as much as possible the extraction of absolute surplus value for its relative form⁵ (Marx, 1867/2002, 1867/2003).

The particular position each individual—whether peasants, lawyers, social scientists, bankers and so on—occupies in the relations of production might influence how each individual will project what he/she might like to be or do and, as a consequence, his/her idea of what a robot should be like. This should be the case if such an individual were to be involved in the design or production of robots. Unfortunately, despite the fact that robots stand as projections of what we would like to be and how we would like to perform (Capurro, 2015), most people do not have the opportunity to consider the implications of such.

Culture refers to a more or less stable set of habits and values from which particular human beings derive an identity that helps them organize their lives. Our point is to highlight the fact that the idea of culture as a monolithic, homogeneous, stable unity does not correspond to anything in reality. Each human group is characterised by divisions of gender, generation and labor, the latter supposedly resulting from the former, as well as from other factors such as wars and conquests (violence). Such divisions necessarily place each subgroup in a different perspective with regard to the unifying culture. Each of these perspectives frames the subgroup's particular (imaginary) universal (symbolic) horizon.

If the previous assertions are true, one can consider separately the inner divisions in each culture before dealing with the way they interact. By doing so, one will probably find that, despite their many differences, these inner splits—gender, generation, divisions of labor—are universal. The articulation of the concepts of culture, division of labor and class struggle leads us to relating them—or at least some of their dimensions—to the concept of ideology, in the negative sense of the word. This is to say, to think culture as a set of hierarchic frames of worldviews and social life representations, explanations, opinions, values, sympathies and rejections (tastes), senses of reality and the like, that justify and legitimate class exploitation through religion, philosophy, the economic and social sciences, cinema, TV, journalism, Facebook, common sense (Schneider, 2015). In this negative sense, culture as ideology means culture as an essential universal process of mystification, derived and sustaining the still more essential universal process of class exploitation, that appears in many historical and local singular shapes, that are, nevertheless, phenomenal particular forms of this universal.

4 “Productive forces” are resources, technics, knowledge and skills. “Relations of productions” mean the position that human beings occupy amidst a productive system and their interrelations: owners (landowners, bankers etc.), managers, craft workers, slaves etc.

5 Absolute surplus value is the extraction of surplus labor, by augmenting the time of work beyond the time of production of value that corresponds to labor's own value; relative surplus value is the increasing of productivity, thus reducing the time of necessary labor and augmenting its surplus part.

Consequently, an intercultural information ethics should look towards this universal among the particulars, by which they could all establish, perhaps, common ethical references, in the symbolic level, and affective identifications, in the imaginary one. Capurro (2007) once said that “[...] the good is not necessarily on the side of the universal and the bad on the side of the local at least when we understand these concepts not only [...] within a normative context but within a cultural one.” This is, of course, correct, but the symmetric inverse statement is also correct: the good is not necessarily on the side of the local and the bad on the side of the universal.

The universal, so praised from early Christianity to late modernity, has produced recently a kind of ethical, political and epistemological trauma among a considerable large group of important philosophers, at least from the second half of 19th century to their present day followers, whether nitzschean, kirkegardian, wittgensteinian, arendtian, heideggarian, deleuzian and so forth. Ethically, because of the (supposed) inevitable totalitarian, intolerant and violent consequences of any universal faced with diversity, such as the Enlightenment’s idea of a universal reason—as well as of universal human rights to democracy, freedom, dignity—employed as an excuse to justify imperialism over supposedly unenlightened people. From a political perspective, this is due to the (supposedly definitive) failure of the communist project for changing society towards justice and freedom on the basis of a “totalitarian” narrative such as class struggle. From an epistemological perspective, it is because of the (supposedly) unrealistic and pretentious inconsistency of modern science rationalism, which was expected to generate progress, but that, in the end, produced atomic bombs and led us all to the risk of growing ecological disasters.

Rafael Capurro (2007) cultivates a healthy defiance of universalisms, but at the same time, he does not support a naive post-modern relativistic point of view:

The path of comparative philosophy has several important landmarks in the last century. The first East-West Philosopher’s conference took place 1939 in Hawaii and was followed by subsequent meetings since 1949. Günter Wohlfart and Helmut Pape have organized similar meetings of the *Académie du Midi* starting in 1989 one of which was particularly concerned with the question of “comparative ethics” (Elberfeld 2002). What does “comparative” mean? It does not mean the mere juxtaposition of different ethical theories, a sort of mere relativism or multiculturalism. It means, in contrast, a dialogue between them following Nietzsche’s aphorism that we live in the “age of comparison” (“Zeitalter der Vergleichung”) in which cultures, customs, and world views that were in former times mostly isolated are being compared and can be “lived through” (“durchlebt”) leading to an epoch beyond the “culture of comparison” (“Cultur der Vergleichung”) (Nietzsche 1988, 44). We may speak of multicultural ethics in which case we just juxtapose ethical views instead of comparing them. A mono-cultural view of ethics conceives itself as the only valid one. In order to avoid this kind of ethical chauvinism and colonialism it is necessary that transcultural ethics *arise* from an intercultural dialogue instead of thinking of itself as universal without noticing its own cultural bias. In contrast, a mere meta-cultural view is eventually metaphysical or essentialist as it pretends to have a definitive true knowledge on human nature and human reason. (Capurro, 2007, section 1.2, *The Path of Comparative Philosophy*)

As such, the antidote to the totalitarian risks of the universal doesn't simply rely on the side of the particular, but on the effort, beyond merely juxtaposing and tolerating differences, of searching through them the *inter*, towards the *trans*. What does the above supposition imply? The most desirable goal is a *transcultural* ethics, that is to say in dialectical logical terms, the concrete and dynamic universality of the unity of the diverse. To translate this into ethical terms, it represents the theoretical and practical conciliation between universal and particular ethical values, from where singular ethical actions would have more favorable conditions to take place.

Gramsci, Golem, Google

In order to achieve such conciliation, we must first deal with intercultural ethics, that is, not with centres, but with borders and frontiers, not with identities or with essences, but with relations. To exemplify the point, an explication of Juda Ben Lowe, Maharal of Prague's ("Judah Loew ben Bezalel", 2015) use of the term *émtsa*⁶ clarifies. *Émtsa* is a Hebrew word that becomes, in the Maharal's writings, a concept that stands for the activating void between everything (Neher, 2011), between all conceivable otherness, without which there would be no possible identity. Consequently, there would not be any possible difference; there would only be sameness, that is to say, nothing. The *émtsa* is similar to the concept of the real. It is every radical singularity that "lies" behind, beyond, between feelings and representations, sameness and otherness, this and that language, this and that culture. It is a nothing (an untouchable and non representable reality) without which there would not be anything. The *émtsa* is hunger, silence, fear, desire, potency, the real, the *alef*⁷ (*alef* [א] is a letter in Hebrew) that differentiates *emet*, truth, from *met*, death.

In one of the versions of the legend of the Golem (a pioneer robot), Juda Ben Lowe writes the Hebrew word *emet* across the Golem's front, and it becomes alive. When the Maharal takes out the first letter, *alef*, *emet* turns to *met*, death, and the Golem becomes inanimate again.⁸ Life (truth) and death, autonomy and heteronomy are the results of a manipulation of information!

In the Renaissance and afterwards, there was a strong growth in the production and circulation of printed signs. Does this growth along with the assignment to the Maharal of Prague of that tremendous power to create life and death through the manipulation of

6 "Milieu," in French.

7 The *alef* has certain connotations in Jewish mysticism. It represents the oneness of God, among other meanings. We are not working here with this interpretation, because, for the Maharal, according to Neher, the *émtsa* lies between man and God. The approximation between the *alef* and the *émtsa* is not, as far as we know, a traditional one. It is just an idea of the author of this chapter.

8 In Hebrew, the *alef* is not an "A", but a kind of "H." The Hebrew alphabet does not have vowels, although a system is used just for children's literacy. *Emet* is a transliteration of אמת

signs—information—somehow express the passage from medieval mentality to the modern one, the mediation between a more contemplative knowledge to a scientific performative?

Among the different legends about the Golem, it is sometimes portrayed as an evil, uncontrollable force, something between a vicious robot and Frankenstein, an expression of our fear against technology, against the potential revolts of the informed or uninformed masses—and maybe of unemployment, due to the automatizing, that is, robots. The Golem can also be (see cabalistic references) the result and the cause of an ecstasy due to a high level of capacity to manipulate signs. The Golem is also the defender of the Jews—a small community unfairly accused of ritual murder, an innocent particular—against a totalitarian universal: Christianity and its hegemonic culture. The Golem is an anthropomorphic automaton made of clay, like Adam, whose name derives from the Hebrew word *adama*, clay, earth. Like Adam, and like men, the Golem is matter in a particular state, existing between the poles of pure crudity and teleological agency, autonomy. The Golem can be a slave, a *robot*, a defender of the oppressed or an uncontrolled disruptive power.

In the Tanach (Hebrew Canon), as opposed to the “urban” sacerdotal class, “people” were called *am ha haretz*, people of the earth, of the land, of the clay. Likewise, the Golem can also be seen as a manifestation of the people, the peasants, to be informationally enlivened by urban intellectuals who master the relevant signs, the strategic information of an ethical political perspective.

Intellectuals manipulate information in many different ways. Nevertheless, as Gramsci (1968) reminds us, all people are intellectuals, because we all have intellectual faculties. The current differentiation between “intellectuals” and “non-intellectuals” is due to formal education and to the division of labor. For Gramsci (1968), intellectuals can be distinguished between traditional and organic. Scientists, philosophers, artists, lawyers and so on perform their place, in the first case, (apparently) apart from class struggle; in the second, as the conscious organizers and spokesmen of each class or class fraction worldview, interests, projects.

Common sense, being a supposed state of truth but in reality often nothing more than a confusion between the universal, the particular and the singular, is a kind of Golem (unformed) state of knowledge, a state of dependency on external intellectual manipulation of information, for good or for bad. However, for Gramsci, the organic intellectual of the working class is not supposed to be educated only in a traditional illuminist perspective. In this traditional perspective, education is understood as bringing light/knowledge to darkness/ignorance. In Gramsci’s view of the relations between the intellectuals and the people, the education of both must happen through the dialog between those who have had the opportunity to systematize critically their worldview with others who did not have the same opportunity, but also have important knowledge to share. As a result, one will mirror their self in contrast with the other in the process of reflecting on their own views. This is a good example of an intercultural information flow, because intellectual workers and craft workers represent one of the many inner cultural splits that mark all cultures of societies where class divisions exist.

From an ethical point of view, this dialectical informational flow could contribute either to the conservation or to the transformation of the establishment. In the first case, it would inform, codify culturally and ideologically the masses to be slaves, robots, forever Golems, “cursed” for eternal heteronomous labor. In the second, it would encourage people to free themselves from this “curse,” freeing simultaneously the whole society from exploitation and reification. Thus if singular groups identify their particular forms of exploitation, from inside and outside their different cultures, these identifications might enable them join forces, through intercultural dialogs.

There is a very good conceptual distinction in information science between digital divide and informational divide. The former deals with technology, the later with knowledge, sometimes with critical sense. Access to Google is good only to overcome the first divide, whereas access to Gramsci and Capurro, the other one. Up to a point, we are all Golems, and if Google is an excellent answerer, real good answers need good questions and Google is not the best advisor to pose good questions. Gramsci and Capurro are. A critical systematized worldview is not a part of ordinary culture, whether “high” or “low.” It is always the actualization of an old and (perhaps) endless effort, from the beginning of times to nowadays, towards a better life, not accepting “reality” nor “realism” as obvious data, facts, perceptions or conceptions, but as problematic ones, with some openness to something better. We believe that at least some sparks of this worldview exist in every culture, in different forms and intensities. So we shall identify, understand, contact, translate and unite them.

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From Culture Industry to Information Society: How Horkheimer and Adorno's Conception of the Culture Industry Can Help Us Examine Information Overload in the Capitalist Information Society

Shaked Spier

Abstract

In the contemporary so-called information society, which is first and foremost a capitalist society, information and information-artifacts are increasingly commodified; a development that serves the interest of powerful elites. A central problem in the capitalist information society, both on a societal and an individual level, is the phenomenon of information overload. As the problem of information overload becomes acute, its dialectic relation to the concept of information society is revealed. Horkheimer and Adorno's thoughts about the mechanisms of the culture industry, its role in the structures of late capitalism, the interplay between the culture industry and the subject, as well as the individual's and collective's agency offer us interesting insights when addressing the capitalist information society and the phenomenon of information overload.

One of the most noted problems of the *Information Society*, both on a societal and an individual level, is the phenomenon of information overload. The relationship between the two concepts, however, is paradoxical; on the one hand—if the main characteristic of society is its growing informatization, how can society at the same time suffer from over-informatization?—and dialectical on the other—a social form that is based on growing informatization produces information overload, a crisis situation in an information-based society emerges, and then again requires more information in order for the social form to exist.

The approach for understanding—or resolving—this paradoxical and dialectical relation depends on how one defines the three related concepts in the center of this relation:

- What is the information society, or rather, what characterizes the society in which we live?
- What is information overload?
- What is information in each of these contexts?

This paper argues that Max Horkheimer and Theodor W. Adorno's thoughts about the mechanisms of what they termed the *Culture Industry*, its role in the structures of late capitalism, the interplay between the culture industry and the subject, as well as the individual's

and collective's agency can offer interesting insights when addressing the phenomena of information overload in information society as a (certain stage or form of) capitalist society.

In order to do so, the next section will discuss the concept of information society, as it will be understood in the context of this paper. The following section will develop an understanding of the phenomenon of information overload with respect to the information society. Both sections will address the notion of *Information* within the respective context as well as the paradoxical and/or dialectical relationship between the concepts of Information, Information Society and Information Overload. The paper will conclude with a discussion of Horkheimer and Adorno's thoughts regarding the culture industry and its relevance for understating information overload.¹

Information and Society

Frank Webster (2014) distinguishes five categories of definitions for the term information society: technological, economic, occupational, spatial, and cultural. In each of these categories, criteria are presented that identify the novelty of the information society in relation to other, preceding social forms. According to Webster, the definitions of all five categories share "the conviction that quantitative changes in information are bringing into being a qualitatively new sort of social system, the Information Society" (Webster, 2014, p. 11). Webster also finds fault with the logic of many definitions, as they deploy an "*ex post facto* reasoning that argues a *cause from a conclusion* (there is more information about, this therefore brings about an Information Society)" (Webster, 2014, p. 11). Furthermore, the proponents of the different definitions of information society fail to deliver empirical or coherent measures as to why the (technological, economic, occupational, spatial, or cultural) aspect at hand makes society an information society, which is fundamentally different from other social forms.

This discussion about the terminology that best describes the contemporary nature of society is not exceptional for the notion of information society. Theodor W. Adorno (1968/2003) asked "whether the capitalist system continues to rule, albeit in a modified form, or whether industrial development has made the concept of capitalism itself, the difference between capitalist and non-capitalist states, and indeed the critique of capitalism, outmoded" (Adorno 1968/2003, p. 1). In other words, do we live in "Late Capitalism or Industrial Society?"

Christian Fuchs (2014a) reformulates Adorno's question and asks: "What is the fundamental question of the present structure of society? Do we live in capitalism or an information society?" (Fuchs, 2014a, p. 137). According to Fuchs, discontinuous information society theories "assume that society or the economy has undergone a radical transformation in

1 It is important to note at this point, that the paper does not aim to deliver a comprehensive discussion of the concepts Information Society, Information Overload, or Information, but rather to offer one coherent manner to examine these concepts in relation to one another from the viewpoint of contemporary and future information society as a form of a capitalist society.

the past decades and that we now live in a new society or economy” (Fuchs, 2014a, p. 138). These theories deploy a variety of termini, such as knowledge economy, post-industrial society, postmodern society, knowledge-based society, network society, virtual society, cybersociety, or the internet society.

On the other hand, *Continuous Information Society Theories* “take the skeptical views to a certain extent into account and stress that we still live in a modern capitalist society, but that certain changes of the forms that express basic capitalist structures have taken place. [...] Such approaches stress the continuity of capitalism but still share the view of continuous information society theories that information technology or knowledge is the central factor in contemporary society” (Fuchs 2014a, p. 140). Furthermore, Fuchs (2014a), Garnham (2004), Webster (2014) and Golding (2000) share the critique that information society theory is a form of ideology. As such, it is “the favoured legitimating ideology for the dominant economic and political powerholders” (Garnham 2004, p. 165).

In light of this discussion, Fuchs acknowledges the central role of information, media and ICT in contemporary global capitalism and speaks of *Transnational Informational Capitalism* (Fuchs, 2014a, p. 142) rather than information society. The societal form, referred to as information society is therefore a capitalist information society. The question remains, *what is Information* in the transnational informational capitalism/capitalist information society and what is the relationship between them? Considering the understanding of the information society as described above, “knowledge and information technology have become important means for producing commodities that serve the purpose of capital accumulation” (Fuchs, 2014a, p. 144), which in turn lead to the commodification of intellectual labor (Rikowski, 2007). Thus, knowledge and ICT are parts of the productive forces in transnational informational capitalism.²

Consequently, the products—or rather, commodities—created in the production-processes that involve these productive forces are increasingly of an informational character; that is to say, many types of information—or rather, information-artifacts—in the capitalist information society are (regarded as) commodities or objects of consumption. As commodities, information-artifacts mask the economic character of the human relations of production; the social relations that are involved in the production of information-artifacts are not perceived as relations between individuals, but rather as economic relationships between money and commodities that are traded on the market. This is what Marx (1867) described as commodity fetishism.³

2 Fuchs notes further that although the productive forces change, “[it] is a mistake to characterize this transformation as radical discontinuity or new society because the economy consists not only of the productive forces, but of the interaction of productive forces and relations of production, or what Marx termed the mode of production (*Produktionsweise*)” (Fuchs, 2014a, p. 144).

3 Since the concentration on information-artifacts (as commodities) mask the still-existing relations of production, the notion of commodity fetishism in the capitalist information society delivers a supplementary explanation for the belief in the novelty of information society that prevails in many of the discontinuous information society theories.

Moreover, in a society, in which interpersonal communication, trade, leisure, consumption etc. are mediated through ICT and take place on digital platforms, which are operated by private and profit-oriented corporations, an ongoing commodification of information that was not a commodity or part of the marketplace prior to the information society takes place. This also comprises information that wasn't even protocolled or documented prior to its mediation through ICT and online platforms.

The data from and about individuals (e.g.: individual reading habits and topics of interest, comprehensive mapping of social contacts, documentation of social interactions, personal taste in fashion, health issues, location and movement data etc.), which is collected by social media platforms, search engines, (online-)news-outlets, online-shops, and third-party tracking companies fulfils a twofold function in transnational information capitalism. On the one hand, it becomes a commodity sold to third-parties such as advertising, credit, or insurance companies; these third-parties—and not the users—are the true—i.e. paying—customers of many of these corporations and platforms. On the other hand, the data and information serve as part of those corporations' productive forces and means of production (cf. Fuchs, 2014a, 2014b; Lanier, 2013; Schneier, 2015; Vaidhyathan, 2011).⁴

That is to say, in the capitalist information society—or rather, in transnational informational capitalism—data and the information that is derived from it constitute not only commodities, but also capital that is valuable to accumulate.

Information and Overload

Strictly speaking, there can be no information overload, since information is always the product of a selection process guided by what we believe we need. The paradox lies in the fact that the potentially accessible information brings with it an increase in the number of options. Living in a society where potential information and possible selections are abundant creates a problem for us when it comes to criteria for veracity, relevance, and quality, for instance. (Capurro, 2014. p 36)

As Rafael Capurro (2013, 2014) notes, the existence of information overload is paradoxical. When considering information as the result of a mental process of selection, processing, and understanding or sense-making, there can be no situation of information overload, since our mere existence is based on the constant absorption, selection, consumption and processing of information. Having said that, the term information stems from the Latin word "*informatio*" (form, shape) and the verb "*inform*" (to form, to shape) (Capurro, 1978, 1995). This etymological origin of the term implies aspects of tangibility, moldability, and perception. That is to say, in order to be communicated and perceived, information has to take a tangible, perceivable form; a physical medium. In turn, the perception and inter-

4 The fact that some of the data and information, which is commodified by these institutions, especially social media platforms, is the social relationships between individuals makes this an especially cynical manifestation of commodity fetishism.

pretation of the information “coded” on the physical medium (e.g. vocal words, printed text or pictures) relies, amongst others, on social and cultural experience.

Measuring the representation of information can be done in terms of information-artifacts, i.e. in semantic units—a book, a song, a document, an E-mail, a movie—or in an ICT-based representation of the information’s digital coding—bits and bytes. The latter however, does not necessarily make a statement about the information’s “quality,” its characteristics, or the (cognitive) resources required from a person in order to process and consume that piece of information, as the following examples, based on Williams’ (1999) *Data Powers of Ten*, illustrate:

- 10 bytes can represent a single word;
- 10 kilobytes (1KB=10³) contains roughly an encyclopedia page;
- The complete works of Shakespeare or a six minute music file require 5 megabytes (1MB=10⁶ bytes) of storage;
- Forty-five minutes of digital video storage capacity requires ca. 10 gigabytes (1GB=10⁹ bytes);
- 1 terabyte (1TB=10¹² bytes) equals all the X-ray films in a large technological hospital or 50,000 trees made into paper and printed;
- Or, to state a contrasting example, a 10 gigabytes audio file can “contain” a whole week of total silence.

Considering the above-mentioned examples, different kinds of information—that is, different quantities and qualities of information—require different kinds and qualities of (human) actions, resources, and experiences in order to be perceived, processed, and understood. Therefore, information overload is a variable, dynamic phenomenon; its formation and expression are dependent on what is considered information in the particular context.

In the capitalist information society, information is a commodity on the one hand and capital on the other hand. This means that the two central processes in regard to information are its consumption (as a fetishized object of consumption) and its accumulation. The question is, considering this understanding of information and related processes in transnational information capitalism/capitalist information society, *what is* information overload in this context? In the quote above, Capurro (2013, 2014) claims that: “there can be no information overload, since information is always the product of a selection process guided by what we believe we need.” This is a very instructive distinction—what we believe we need.

In a capitalist, profit-driven, and consumption oriented society, the concept of consumption of information-artifacts as commodities is different from the consumption of information-artifacts as information. That is to say, in contrast to the consumption of information(-artifacts as information) in terms of a mental process of selection, processing, and understanding or sense-making, the consumption of information(-artifacts as commodities) in a capitalist information society has a substantial dimension of acquisition, trade, collection, accumulation, possession, and exhibition. “What we believe we need” in the capitalist information society is shaped to a great extent by the—false, some may

say—consumerist needs that are propagated by our social surrounding. An Apple iPad commercial from 2010 makes this point astonishingly clear, although assumingly unintended:

It's crazy powerful; it's magical; you already know how to use it; it's two hundred thousand apps and counting; all the world's websites in your hands; it's videos, photos, more books than you could read in a lifetime. (Apple, 2010)

The consumption of information the capitalist information society constructs is a dialectical situation: individuals consume more information(-artifacts as commodities) than the information(-artifacts as information) that they can meaningfully consume (perceive, interpret, and understand)—“all the world's websites in your hands, more books than you could read in a lifetime.” This dialectical situation constitutes and reproduces information overload in a capitalist information society. This aspect manifests itself in the dynamics of the *achieving society* as well. In a capitalist and neoliberal reality, individuals are in a state of constant competition—at school, at work, and in private life—and are pressured to constantly enhance their achievements, thus becoming an *achievement-subject*—a state Han (2010, 2012) regards as voluntary self-exploitation.

Instead of being subjected to external control and disciplinary mechanisms (as in Foucault's theory of disciplined society) the individual (the subject) in the achieving-society is subjected to quasi self-suppression. Han (2010, 2012) considers this a shift from a society of negativity to a society of positivity. It is characterized by narratives such as “you can” or “yes we can” instead of “you should” or “you must”; motivation instead of compulsion and control; change in the economy of attention (for example, the pressure to multitask, hyper-attention, or the rapid change of focus between tasks and information sources); and the (false) feeling of freedom instead of being controlled.

The commodification of intellectual labor, knowledge and ICT being central productive forces in the capitalist information society, and the structures of the *achieving information society*—the capitalist information society's counterpart—compel individuals to put themselves under the pressure of, amongst other things, constantly consuming more information in order to keep up with competition, to improve one's achievements, to avoid mistakes, and to out-perform; in other words, to make one's (intellectual) labor more valuable to sell (as a commodity).

In such a reality, individuals as well as society lack the necessary interim time—the “time-off”—that is needed for thinking, absorbing, reflection, interpretation, generation of knowledge, leisure, and muse as well as to “not-think.” Thus, under the guise of positivist rhetoric, individuals “voluntarily” work to enhance their achievements at the expense of recreational time.

On the other side of the coin, information, when regarded as capital, is a subject of accumulation. Lanier (2013) describes a future, in which many industries and workplaces become obsolete due to the proliferation of 3D printers and the free of charge availability to templates for the production of almost all possible artifacts using 3D printers. He further describes the structures, in which extraordinary amounts of data are accumulated by what

he terms *meta servers*; in other words, by the institutions and/or individuals, who control the (digital/informational) means of production in transnational informational capitalism.

Due to the fact that the accumulation of money, value, and power is an integrated part of capitalism, Lanier's vision of the future information society⁵ is very much a vision of a capitalist information society, of an advanced transnational informational capitalism. According to Lanier, the disappearance of industries and workplaces will cause an erosion of the middle-class. He offers a readjustment of the internet's technical and institutional structures as well as of society itself, so that people will receive micropayments for their data from those who (are able to) monetize it; that is to say, from those who are in control of the means of production, that is, of the meta servers. This proposal stands for the reproduction of the existing power relations as well as the relations of production in society in order for them to fit the structures of transnational informational capitalism. The key difference is that people are forced to sell their data, rather than their labor, in order to survive—an interesting definition for the concept of digital labor.

Lanier's precise analysis makes clear how the over-accumulation of data and information (as capital) in a few hands—or rather, a few meta servers—threatens to cause situations of social and economical crises. From this perspective, information overload in the capitalist information society can be considered as the over-accumulation of information and data (as capital) in a manner that creates systematic and social imbalances, which in turn develop in to crises. Ironically, although Lanier's solution integrates a certain redistribution of the (monetary) value that was produced with people's data and information, the offered solution and redistribution rely on the increased production (i.e., protocolling), accumulation, and commodification of further information.

In light of the presented understanding of the concepts information society and information overload, Horkheimer and Adorno's thoughts about the mechanisms of the culture industry, its role in the structures of advanced capitalism, the interplay between the culture industry and the subject, as well as the individual's and collective's agency offer us interesting insights when addressing the phenomenon of information overload in information society—as the following part of the paper will discuss.

The Culture Industry: Enlightenment as Mass Deception

When Max Horkheimer and Theodor W. Adorno, members of the Frankfurt School, arrived in the U.S. in the late 1930's they were baffled by its distinct cultural and medial reality (in relation to Europe in general and Germany in particular). In *The Culture Industry: Enlightenment as Mass Deception*, Horkheimer and Adorno (1944/2000) discuss how what they termed the Culture Industry operates as a mechanism or a "factory" that produces cultural goods (magazines, films, radio and television programs etc.) as standardized

5 Although Lanier doesn't deploy the term information society.

commodities. Thus, art is defined by its economical value, instead of aesthetic aspects that were central for autonomous artworks in the bourgeois society; aesthetic itself becomes a function of the cultural or artistic object as a commodity.

Horkheimer and Adorno deploy Marx' definition of commodity character and the differentiation between the commodity's use-value and exchange-value in their analysis of cultural goods in late capitalism. In late capitalism, they claim, art and its social and cultural value (i.e. its use-value for society, for example)—to satisfy societal needs in terms of social justice and equality—have developed so as to be simply products “on the market.” As such, their value is a function of exchange and price—exchange-value. Thus, art has lost its autonomous character, as it now serves as a means to an end; namely, the generation and accumulation of capital. In order to pursue this end, the culture industry has created a global network, which facilitates the production of cultural goods and their distribution and serves as a marketplace that brings consumers and products together. This network is based on the capitalist relations of production and follows the capitalist logic.

This analysis shows interesting parallels to the changing role of information in the capitalist information society. Information does not have *intrinsic* value—it is, per se, worthless—its value derives from its meaningfulness for us—as humans, individuals, or society. In transnational informational capitalism/capitalist information society, information's economic or exchange-value tends to have the upper hand over its use-value. That is to say, since information-artifacts increasingly become consumption goods or commodities, their value is decreasingly determined by the fulfillment of human or social needs and increasingly by exchange (as a commodity) on the market.

This however, does not apply only to information-artifacts that are at the same time cultural goods (in accordance with Horkheimer and Adorno's understanding)—“more books than you could read in a lifetime.” The personal data and information that is collected by social media platforms, search engines, advertising companies, and other third-parties is rarely deployed for satisfying social needs, such as promotion of social justice and equality, but rather for serving the economic interests of those who are in control of the information. The information's value is thus an exchange-value; a function of the collection, storage, and deployment costs as well as the profits that (can) derive from it. This does not mean that information is not perceived by its use-value; nor that informational spaces (such as social media platforms or search engines) cannot be used for ends that promote social progress. Both do. But also such uses of information (uses primarily for the information's use-value or promoting social progress by, for example, organizing social protests over social media) serve the economical interests of the institutions and stakeholders who are in control of the informational spaces—they take place within the commercial informational spaces (which, in turn, serve as means of production), hence they are monitored, protocolled, analyzed, sold, and deployed to generate profit. Thus, the economic or exchange-value of information prevails.

When considering Lanier's vision of the future information society, in which individuals are compelled to sell their data and information for micropayments, the exchange-value of information sets the tone for its production and usage. This, in turn, might have a ma-

nipulative effect on people's behavior, as they try to produce (exchange-)valuable data in order to increase their income.

In transnational informational capitalism, the almost instinctive comparison drawn to Horkheimer and Adorno's argument about a global network, which supports the accumulation of (informational) capital, the production of informational commodities, their distribution and serves as a marketplace that brings consumers and products together, would be the internet.⁶ This comparison however, represents only a part of the networks that serves the culture industry's counterparts in transnational informational capitalism. The necessary supplement is the global cycle of relations of power, labor, and production that constitute transnational informational capitalism/capitalist information society's base—its material and economical basis as a capitalist information society—and are manifested in one of its central characteristics, namely the concept of digital labor in its broader sense.⁷

According to Horkheimer and Adorno, there is a reciprocal relation between the subject and the culture industry. On the one hand, due to its commodity character, culture in late capitalism needs to find its consumers. Therefore, the culture industry adapts its cultural products to the consumers, amongst others by using the logic of mass production and standardization. In this manner, culture loses its critical dimension; only what fits in the charts and statistics is produced. Furthermore, the consumption of culture takes place in the individual's spare time; whereas the latter is defined in capitalism in its contrast to labor time. That is to say, the recreational or regenerative phase is subjected to the working phase. The activities in the regenerative phase are expected to demand little energy from the individual, which in turn requires culture to be accordingly adapted. On the other hand, the culture industry reduces individuals to their role as consumers. As such, the culture industry supplies them with trivial, standardized, superficial content in order to avoid investment risks.

From this point of view, the dangers of the culture industry are the growing passivity of the consumers—and therefore, of society—paralysis of the ability for critical thinking, and cultivation of false consumerist needs. This vicious circle is for Horkheimer and Adorno an expression of the manipulation of individuals by the culture industry. It reveals that the culture industry serves the interest of economic elites by transforming culture into a tool in the hand of capitalism. A tool that is able to manipulate the consumers themselves (and not only the products). In this manner, the culture industry has a stabilizing effect on the existing hegemony.

6 The term "internet" is used here in terms of an ensemble of technological infrastructures, institutions, platforms, praxes, and politics.

7 Christian Fuchs (2014a) theorizes digital labor as such a global cycle—from the extraction of minerals (predominantly) in Africa; to the assembly of IT devices in Asia; to the overloaded, overstressed, and overtired but relatively well paid workers in the software industry (in western countries as well as in growing software industries such as in India); to internet prosumer labor on social media platforms; to the mountains of toxic electric waste that finds its way (back to) developing countries.

Although not explicitly addressed, information overload is part of the system that Horkheimer and Adorno term as the culture industry. That is, the increase of standardized cultural messages in the media, which leaves individuals with fewer capacities for reflection and critical thinking. However, in contrast to some of the criticism about this work, this notion doesn't ignore or oppose the subject's agency in the realm of the culture industry—or in this paper's context, in the capitalist information society—but rather that their agency is an active part of the phenomenon. In Peters's words: "It is not simply that people are duped: they are active agents in their own duping" (Peters, 2003, p. 64).

Individuals are active agents in their own "overloading" in the capitalist information society as well, as they actively consume more information(-artifacts as commodities) than the information(-artifacts as information) that they can meaningfully consume (i.e. perceive, interpret, and understand).

Although the notion of standardization and trivialization of cultural goods—or rather, of information-artifacts—might play a less significant role in context of information overload in the capitalist information society, Horkheimer and Adorno's observation of the reciprocal relation between the subject and the culture—or rather, information—industry remains instructive. The information industry (social media platforms, content providers, search engines etc.) does not regard subjects as individuals, but rather reduces them to the role of information-consumers. Their interest is to supply them with as much information(-artifacts as commodities) as possible and at the same time cultivate their consumerist need for more information.

Similar to the delivery of standardized, easy to consume cultural content (amongst others due to its consumption during the individuals' regenerative phase), many stakeholders in the capitalist information society work to create personalized informational space by adapting search results, news-feeds, or updates on social media platforms in accordance with a variety of objective and subjective parameters about the individual (the user). These personalized informational spaces are tailored to the individual's own opinions, designed to be free of disturbance, and are filled with, primarily, easy to consume information. In the capitalist information society, the absence of deviant opinions, identities, and tastes in such personalized informational spaces hinders critical thinking, public debate and acceptance of the other. Pariser (2011) termed these practices and their consequences as *the filter bubble*. Cynical as it might be, the personalization of informational spaces is often being presented as the information industry's answer to information overload.

Just as the culture industry supports the manipulation of individuals in order to serve the interests of capitalist stakeholders in late capitalism, so do the filter bubble and related practices in the transnational informational capitalism/capitalist information society. As I mentioned above, the actual—that is, paying—customers of many social media platforms, search engines, and content providers are third parties such as advertising, insurance, or credit companies that place ads or buy data and information about individuals. Therefore, the informational spaces, in which the individuals (which are reduced to the role of consumers) operate, need to be as comfortable and consumption-supporting as possible. In turn,

by exposing individuals mainly to information that supports and reinforces their existing opinions and taste, they are subjected to manipulation in the interest of those third parties.

An interesting difference between the role of the culture industry in late capitalism and information overload in the capitalist information society is the differentiation between the time spent on labor and regenerative time. Horkheimer and Adorno see the culture industry as a tool in the hand of capitalism (or in the hands of the capitalist elite) to extend its influence or control also to the time and space outside the labor phase of the working day and the workplace themselves.

In his analysis of the achieving society, which was discussed earlier in the paper, Han (2010, 2012) shows how in the neoliberal capitalist reality, individuals (motivated by positivist rhetoric) turn to excessive information-consumption which is not regenerative outside the labor phase of the working day, in order to better serve their current or future employer during the labor phase. Therefore, there is no need to supply, or even overload, those individuals with trivial standardized cultural or informational contents; they are actively overloading themselves in order to serve the interests of the capitalist elite when they go to work the next day and in the meanwhile, there are no resources left for critical, let alone revolutionary, thoughts.

Conclusion

The Culture Industry is by all means a gloomy text, which was written in dark times (Peters, 2003). During the past 70 years, the text was discussed and criticized in many contexts: “To write a history of the reception of these 50-odd pages would be, in a sense, to write the history of critical media studies” (Peters, 2003, p. 58). This chapter has not sought to present a thorough analysis or discussion of *The Culture Industry*’s reception, but rather to apply the text’s structural analysis and criticism of the culture industry’s role in late capitalism to contemporary capitalist information society and its relation to the phenomenon of information overload. The striking similarities, as well as some key differences, are a further proof that the so-called information society is, nonetheless, a capitalist one, while acknowledging the profound changes and developments that give it the character of a capitalist information society. From my perspective, resistance to information overload is in many situations an act of resistance to (transnational informational) capitalism itself. It is vital.

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VI

Futures: Information Education

Ethical and Legal Use of Information by University Students: The Core Content of a Training Program

Juan-Carlos Fernández-Molina and Enrique Muriel-Torrado

Abstract

Most intellectual works used by university students are copyrighted, which means there is a conflict between upholding these rights and respecting the use and access of works to develop their activities of learning and research. Yet students are not only the users of intellectual works—they are also creators, producing monographic works on assignment in the course of their undergraduate or graduate studies, whose copyright belongs to them. This close relationship between the activities of university students and the rights of authors has become more complicated with the development of the digital setting. There are far greater possibilities for creating, using and distributing digital information nowadays, but at the same time copyright legislation has become increasingly complex and restrictive. There is clearly a need to have basic knowledge regarding copyright in order to proceed in a proper way in the academic realm, and this need is addressed in the main information literacy standards. As a result, university libraries have taken on a new professional role, preparing their users to face the fundamental challenges for a proper use of information. We present a draft for a training program based on three pillars: examination of the information literacy standards/framework; analysis of the main points of intersection or friction between copyright and university students' activities; and finally, the responses to a questionnaire by a sample of students from a Spanish university.

Most intellectual works used by university students are copyrighted. Hence, there is a collision between the rights held and the usage of a work for learning and research activities. Moreover, students are not only the users of intellectual works: the papers they hand in as assignments for undergraduate or graduate courses are likewise intellectual works, and in this case the students hold the copyright. The tangled two-way relationship inherent to the university setting is growing more complex and significant as the digital setting develops. While on the one hand the possibilities for creating, using and distributing digital

information have grown exponentially, recent changes in legislation that are very difficult to follow have led to greater constraints.

University students generally make good use of the tremendous possibilities and facilities that digital information offers in terms of its use and transmission, taking advantage to use, modify, share and divulge works much more freely. However, sometimes their actions go beyond what is permitted by law. The great facility for infringement is precisely the justification behind recent reforms in copyright laws. Further measures of protection recently introduced include, most notably, DRM systems and licenses (Fernández-Molina, 2004; Eschenfelder, 2008). Thus, norms regulating the use of intellectual works have progressively fortified protection, even to the point of sacrificing the vital balance between the rights of the two parties involved—rightholders and users. As a reaction we have seen the surge of copyleft movements, with initiatives as interesting as the Creative Commons licenses, whose successful development has modified and added further complexity to the previously existing panorama.

The use and creation of intellectual works on the part of university students has implications of a legal and of an ethical nature. Indeed, the frontier between these two realms can prove to be quite fuzzy. It is not always clear which uses of a work are permitted within the right of quotation, or how to discern plagiarism from a dishonourable or lazy practice that is not strictly illegal.

Do today's university students have the basic knowledge needed to help them face problems of an ethical-legal nature with some guarantees of success? A few studies have looked into this matter (Chou, Chan, & Wu, 2007; Wu, Chou, Ke, & Wang, 2010; Joint Information Systems Committee, 2012; Datig & Russell, 2015), and in general terms, their results make manifest that such knowledge is scanty and often plagued by confusion or misunderstandings with regard to elementary matters. The need for some specific formation has not gone unnoticed by the library community, which has quite naturally adopted a new role. Their privileged situation as intermediaries between the information sources and the students, face to face, makes them the most adequate professionals to provide training and advice in these issues (Albitz, 2013; Jaguszewski & Williams, 2013). It should therefore come as no surprise that they are included in the information literacy standards and frameworks (Association of College and Research Libraries, 2000, 2015), whose practical implementation is nonetheless no simple matter. Academic librarians are trained regarding the other four standards of information: need, access, evaluation and use; but most did not receive adequate training about ethical-legal matters (Cross & Edwards, 2011; Charbonneau & Priehs, 2014). The fact is, in recent years there has been a nearly desperate call for professionals with a legal background (Kawooya, Veverka & Lipinski, 2015).

At this point, there is certainly no question about the need to provide this type of instruction to students, and for it to be carried out by the university library. We should therefore attempt to outline some basic contents for a training program. It seems logical that the starting line be drawn by the information literacy standards/framework, but these guidelines are of a general character, and they should be completed through an analysis of problems specific to the setting (both legal and factual) where the training will be imparted.

Bearing this in mind, the present work puts forth a proposal for training based on three elements: a) the information literacy standards/framework; b) an analysis of the points of collision between the activities and the author rights according to Spanish legislation; and c) an empiric study of the knowledge of university students, which makes manifest their main gaps in knowledge and misunderstandings.

Information Literacy Standards and Frameworks

In recent years information literacy training has been incorporated into the traditional activities carried out by university libraries. Conceived as the natural evolution of the classical services of user education, it has adapted to the information era, strengthening and broadening it. No longer limited to showing one how to use the catalogue and other library resources, the aim is now for librarians to facilitate user competence in a full series of challenging activities within the digital setting. Although the concept is widely known, it does not hurt to recall the terms put forth by the Association of College and Research Libraries (1989), establishing that “Information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them.”

There are various standards and models with respect to its specific contents. One such model often used as reference is the core model of SCONUL (2011), based on seven pillars: Identify, Scope, Plan, Gather, Evaluate, Manage, and Present. For the purposes of the present study, the most relevant pillar is the sixth one (Manage), according to which the information literate student “can organize information professionally and ethically,” which implies, among other things, that they understand “their responsibility to be honest in all aspects of information handling and dissemination (e.g. copyright, plagiarism and intellectual property issues)” and are able to “demonstrate awareness of issues relating to the rights of others” (ethics, copyright, plagiarism...) and “to meet standards of conduct for academic integrity.”

Because the documents generated by the ACRL are the most widely diffused ones—not only the classical standards but also the more recent framework (Association of College and Research Libraries, 2000, 2015)—we use the two as the departure point for our analysis. The former document contemplates five standards, the fifth one dealing with ethical-legal matters. Specifically, it establishes that the information literate student “understands many of the economic, legal, and social issues surrounding the use of information, and accesses and uses information ethically and legally.” Like the other four, this standard is profiled by several performance indicators and outcomes, that is, the abilities or aptitudes that students should acquire to demonstrate that they comply with every indicator. The first indicator addresses the comprehension of ethical-legal matters, and it includes as the most significant outcome the understanding of intellectual property, copyright, and fair use of copyrighted material. The second focuses on the compliance with laws, regulations and

policies, including two very noteworthy outcomes that deserve underlining: the student “legally obtains, stores, and disseminates text, data, images, or sounds” and “demonstrates an understanding of what constitutes plagiarism and does not represent work attributable to others as his/her own.” Finally, the third indicator emphasizes acknowledgement of the information sources used, stating that one “posts permission granted notices, as needed, for copyrighted material.” In short, knowledge about and respect for the intellectual property rights (especially copyright) of other authors, avoiding plagiarism and its double-edged blade of legal and ethical implications, would be an essential competence that an information literate student should have.

Fifteen years after putting out its standards, the ACRL came out with a new version, in this case a denominated “framework,” in an attempt to update and adapt the standards to the rapidly changing higher education environment. The change of denomination—from standards to framework—reflects a shift in scope. The old closed list of standards with their corresponding learning outcomes and skills has been replaced by a flexible set of core concepts interconnected with multiple options for their implementation. In this way, the matters of copyright, intellectual property and plagiarism are not encapsulated within a single frame, instead pertaining to a number of them, either directly or indirectly. For instance, the first of its six frames (“Authority is constructed and contextual”) refers to the need to acknowledge the authority of third parties, that is, the contributions of other authors and their influence in a field. This implies a respect for intellectual property, namely the moral right of paternity. Also of interest is frame 4 (“Research as inquiry”), given that among its dispositions we find “follow ethical and legal guidelines in gathering and using information.” The same can be said of the sixth frame (“Scholarship as conversation”), by virtue of which one must “cite the contributing work of others in their own information production.”

Still, it is the third frame (“Information has value”) that most clearly addresses the sticky ethical-legal issues. It begins by declaring that “information possesses several dimensions of value, as a commodity and as a means of education” and that “legal and socioeconomic interests influence information production and dissemination.” It thereafter specifies that a manifestation of the value of information would be the intellectual property laws, and that it is crucial to comprehend one’s rights and responsibilities corresponding to the double role as creators and users of copyrighted works. Deserving mention among knowledge practices is the statement that one must “give credit to the original ideas of others through proper attribution and citation,” and that one need always be aware that intellectual property is not only a legal construction, but also a social construction, and that as such it varies from one culture to the next.

In trying to extract the core content of the knowledge included under these standards and framework, we will approach the straits of copyright and the quicksand of plagiarism. Students must be familiar with basic copyright principles and legislation in order to respect the works created by others. In turn, plagiarism appears as a central figure in these documents, for legal and ethical reasons.

University Student's Activities vs. Copyright Law

To better relay where the key conflicts in this area lie, we should offer some background explanation of copyright. Firstly, it is important to realize that copyright has a double character, economic and moral, meaning that it has different facets or rights of both natures. The moral rights are faculties of a very personal nature that authors hold over the intellectual works they produce. Although they are not well known and the debate about them is less heated than regarding patrimonial rights, they are likewise significant in the academic world, where incentives of an economic nature are not quite so relevant. They are highly protected in the countries belonging to the Latin-continental system, such as France, Spain, Germany, or Italy, while weaker in the Anglo-Saxon countries.

Moral rights can differ from one country to another (Fernández-Molina & Peis, 2011), but there are two recognized by any national law on copyright: paternity (or attribution) and integrity. The former is as simple as the right to demand recognition as the author of a work. Its implications are quite diverse. For instance, university students should bear it in mind when they use works by third parties for their assignments, clearly identifying the authorship of the works used or referenced. Also of great relevance is the right of integrity, which consists of the fact that authors can demand that the integrity of their work be respected, opposing any deformation, modification or alteration that might harm their legitimate interests or reputation. A commonplace example would be the extraction of a fragment of a work, presenting it out of context, which could give rise to an interpretation contrary to the one intended by the author. A more blatant misuse would be taking a work and changing certain parts as one wishes, altering the content or mutilating a fragment, to the point where it becomes unrecognizable.

The four main economic rights can pose a problem for the activities of university students. The first of these is the classic right of reproduction, whose essence is quite straightforward: the author has the right to permit or forbid the copy or reproduction of their work by any means or in any format. A good part of the uses made of copyrighted works, be they journal articles, books, photographs or musical recordings, affects the right of reproduction, from the classic photocopy to the present-day digitalizing or scanning. Downloading materials from the internet and exchanging files across P2P networks would of course be included under the right of reproduction, as the activity undertaken during a download is a copy, a reproduction of the file uploaded to a server accessible over the web.

Closely tied to the right of reproduction we have the second of the economic rights, that of distribution, which consists of making available to the public the work or copies of a work on a tangible medium, by sale, rental, loan, donation, etc. It should be underlined that this right refers only to tangible samples in any type of format, whether analogical (records, books or videocassettes), magnetic (diskettes), optical (CD, DVD), or electronic (pen drives, external hardware). In no case can it be extended to works existing in intangible electronic presentations. Examples affecting the university community in particular would include supplying photocopies of documents, or distributing discs or pen drives that contain works.

The right of communication to the public expresses the fact that an author has the right to authorize or prohibit any communication to the public of their works, including the making available to the public of their works in such a way that members of the public may access them from a place and at a time individually chosen by them. This right is no doubt the one of greatest relevance in the digital realm, given the intangible character of network communication. Cases of public communication are very numerous: the projection of films, videos, documentaries or any audiovisual work, the exposition of works of art, radio-diffusion, stage representations, dissertations, the performance of musical works, and others. Moving over to the university, it would include activities as commonplace as putting electronic information, photographs or documents at the disposal of users in an intranet or on the internet; or placing contents on online teaching platforms (theses, electronic books, journal articles).

Finally, the fourth right of an economic nature is that of transformation. This refers to allowing, or not, the creation of derivative works from the original work. The most classic instances would be translation, adaptations and musical arrangements, but it includes any transformation of a work, which can be a very simple or habitual matter when it comes to digital works.

This traditional collision between user rights and author rights has expanded and become intensified with the development of the digital setting. Aside from drastically transforming the array of means by which intellectual works can be created and diffused, digital technology has also had a direct impact on copyright norms, which have been modified nationally and internationally in recent years. Unfortunately, these legal reforms have generally upheld the interests of the copyright holders as opposed to those of users. Legislation falls very short of what is needed for academic activities to develop satisfactorily in the digital setting (Wallace, 2006; Hobbs, Jaszi, & Haufderheide, 2007). We might sum up the increasing complexity of copyright in the academic world by focusing on three factors: a) the increased use of informational resources that are under license; b) the increase of e-learning activities; and c) the copyleft movement.

The first of these factors has modified the situation of the university library collections to a very great extent. Unlike information in printed format, which was acquired as property by the library, digital resources are not purchased. Rather, their usage is paid for in agreement with the conditions established in a contract (the license). Accordingly, databases, e-books, and above all electronic journals are not resources belonging to the library, but they can be utilized on the premises under the terms and conditions of the corresponding license. This stands as a fearsome obstacle for university students, who may have no idea of what they are allowed to do with a given database or journal, since each license expounds precise specifications, their contents are not easily comprehensible for non-specialized persons, and the contents of the license are not readily accessible for all users. What's worse, most of the users are not even aware that using a printed journal and using a digital journal is not the same thing.

Equally relevant is the second of the factors we are analysing here, the development of online educational activities, or e-learning. Indeed, at most universities the educational

activities carried out virtually have increased exponentially. Information and communication technologies now allow for educational materials and resources prepared by the teachers to go beyond their offices, computers and personal files, landing online to be used by the students. But it is not just the teachers who should make sure that teaching materials fulfil copyright; the students, as habitual creators of intellectual works, are also responsible. They produce many monographic papers in order to pass their subjects. This is where the worrisome increase in cutting and pasting comes into play.

Finally, both the new technological setting and recent trend of rigidity in copyright legislation have given rise to a series of movements whose main objective is to make the present legal system of copyright more flexible. The generic name for these movements is “copyleft.” Beginning with free software licenses, they have since extended and diversified to embrace initiatives as significant as the Creative Commons licenses. In opposition to the classic line of copyright, instead of “all rights reserved” they promote the concept of “some rights reserved.” The variety of license models at the disposal of authors allows each to decide what may and may not be done with their works: excluding commercial intentions, allowing the use of derivative works, or impeding modifications of a work. It was first successfully used in the areas of music and audiovisual works, and later extended into the academic realm with satisfactory results (Kapitzke, Dezuanni, & Iyer, 2011). For instance, OpenCourseWare, the pioneer initiative by Massachusetts Institute of Technology to make university educational materials freely accessible over the internet, uses this type of license. And although the contents and characteristics of such licenses are not necessarily complicated, making good use of them and taking full advantage of them calls for some familiarity with the basic contents, and an understanding of the implications of choosing one type of license over another.

Not all problems are of a legal nature. Indeed, technological development has given a starring role to one of the most classic problems of the academic world, plagiarism. The ease by which accessing and modifying digital content can be effected might be perceived as an incentive for persons with limited ethical foundations and who have a tendency to help themselves to the intellectual property of other authors through cobbling together something to be passed off as their own creation from these legitimate authors’ works. In the university setting, such conduct bordering on plagiarism—a particularly difficult concept to delimit (Wager, 2014)—has become more frequent among professors, researchers and students (Wheeler & Anderson, 2010; Strittmatter & Brutton, 2014). How can we discern unfaithful reproduction or abusive use of someone else’s work from intentional plagiarism?

Is any plagiarism an infringement of author’s rights, or could it be that some cases are infringements, whereas others are just “unethical” actions? Answering such questions is not easy. For one, copyright does not usually define plagiarism, although on occasion the law makes mention of this term. If we look it up in the dictionary of the Real Academia Española, we find that plagiarize is “copying the substance of another person work, presenting them as one’s own. Similarly, the Webster dictionary entry reads: “To steal or purloin from the writings of another; to appropriate without due acknowledgement (the ideas or expressions of another).” In other words, not any copy of another person’s

work would constitute plagiarism... only those that are considered substantial—another slippery term, as it implies something quantitative as well as qualitative. Moreover, unlike the copyright infringements, which can only be produced by the unlawful use of the expression of ideas, there may be plagiarism in the undue use of ideas, regardless of the way in which they are expressed.

To help resolve some of these catchy areas we could resort to the right of quotation, which serves to largely indicate which uses of these works are allowed or not by the law when teaching or research activities are underway. It is one of the most basic copyright limitations, and in fact is the only one considered compulsory by the main international treaty of the matter, the Berne Convention (WIPO, 1971), whose article 10.1 specifies the imperative nature (all the undersigning countries must include it in their national legislation) and establishes that it is permissible to make quotations from a work which has already been lawfully made available to the public, with the understanding it is done “with fair practice” and “their extent does not exceed that justified by the purpose.” In addition, “mention shall be made of the source, and of the name of the author if it appears thereon.”

Student’s Knowledge on Copyright: Results of a Survey

In this section we will briefly explain some of the results of a survey (Muriel-Torrado, 2012), carried out with the participation of 400 university students in an attempt to identify the knowledge as well as gaps in knowledge of students regarding various aspects of copyright. The survey was carried out in a mid-sized Spanish university (roughly 25,000 students). The fundamental features of the Universidad de Extremadura make it representative of Spain’s educational system. The students were consulted about the current laws at that time (Spain, 2006), and some questions of a general character were included along with others of a more strictly academic nature, about the use of information in the analogical or digital setting, about Creative Commons licenses and the information and instruction received regarding such subjects. Below we will comment on the most relevant results for designing a training plan.

The first section contained questions about general aspects of the copyright law: its contents, duration, exceptions and limitations, and the formal requirements to acquire copyright. In all the cases the questions were presented in a simple and clear manner, as we assumed that the students did not have much background knowledge. The results were, however, worse than anticipated. Only half those queried recognized the dual nature (moral and economic) of copyright, essential under the legal system of Spain. Even worse were the results of another basic query, “as the general rule, how long does copyright last?,” with only 16% giving the correct response: 70 years after the author’s death. Most (58%) responded 50 years, while 23% answered 60 years, the period of protection that was in vigour until the reform of 1996. But copyright law makes no sense in our society if the crucial exceptions and limitations are neglected, which is why we deemed it vital to include a question to that respect. Given the basic level of formation, we simply asked the participants if they had

some notion of the basic contents most closely related with the academic realm: private copying, illustration for instruction, quotations, and for the benefit of libraries. The results made manifest that the best known exception is private copying (38%), no doubt because it has been the topic of intense debate in all the mass media, especially because of the controversial levy system. In turn, the library exceptions were known, at least with regard to their basic content, by 23% of those surveyed. Very noteworthy was the finding that the exceptions most closely related with academic activities, quotations and illustration for teaching, were only identified by 17% and 16% (respectively) of the participating students.

A key point about copyright is how one acquires the rights over the work created. Is it necessary to carry out certain formal requirements? This is a simple question surrounded by many doubts. The Spanish law, as in all other countries undersigning the Berne Convention, establishes very clearly that the intellectual property of a work corresponds to the author merely by virtue of its creation. No type of registration or bureaucratic process is needed to enjoy and exercise the rights over the works we create. From the very moment of creation, a work is protected and its author holds the corresponding rights. As university students are not only users but also creators of works, this was a very pertinent item on the questionnaire. Again, the results were not positive. This is not entirely surprising, as the idea that it is necessary to register a work to obtain copyright is very widely held. Nearly 6 out of 10 (59%) students were not aware that their classwork or assignments are protected by copyright. Perhaps the reason for such poor results is not only the widespread belief that some formality is necessary; it may also be that many undergraduate students consider that their classwork/homework lacks quality or is not important enough to be protected. Nonetheless, again the law is clear: the protection does not depend on the quality of the work, but pertains to any original creation expressed in any type of format. The integral results of this question made manifest that only 41% were aware that their work belonged to them, as did the copyright; 8% thought it belonged to the university, 2% to the professor, and 31% believed that it was not copyrighted at all. Furthermore, 18% responded that they did not know the answer.

A most significant change that came with the development of the digital setting was that a vast part of digital information (databases, scientific journals, e-books) is no longer purchased, as used to happen with printed publications. Instead, the rights of use are acquired, under the conditions established in a contract known as the license. The consequences for library users, students included, are considerable. The use they may make of a digital work will be determined by the terms and conditions of each license, which do not all have the same contents. Logically, the complexity of this topic led us to formulate questions for the student of a general character, with a practical orientation. We asked if they could use the digital resources of a library in any way they wanted, that is, printing them, sharing them with classmates, with friends outside the university community, or uploading them on a web. The results indicate that a majority (62%) of students are aware that there are restrictions for use, hence they cannot do whatever they please with the work of a third party. Yet when asked if they could share them with friends who were not university classmates, the correct response (being negative in this case, as they are not

authorized users) was given by only 37% of the respondents. Such findings reveal that it is not sufficient to form the category of students in copyright legislation, it is also necessary to pay attention to the basic characteristics and conditions of licensing agreements as well.

The internet contains so much information, so ready, and right at hand, that at times it is a challenge to remember that copyright is also present there. For this reason we asked two consecutive questions about the use of information on and off the internet, from the most practical viewpoint possible, so that the students could “relate.” First we asked if they could use in their work large portions of copyrighted works. The question deliberately included the concepts “copy/paste” and “large portions.” The results are quite surprising, as only 39% of students recognized that they should not carry out this act, while 44% even went so far as to openly say it is possible, and 17% did not know. Then we queried this same action being undertaken on the internet. The figures changed significantly: up to 10 percentage points more, that is, 54% of students believed that when information is on the internet they may use large portions of copyrighted works. Once again, the notion that the internet is a “lawless terrain” prevails.

The copyleft movement, and the Creative Commons (CC) licenses in particular, have become popular in the academic world. Apart from growing exponentially, they have also encountered great success, for instance through open access journals and open educational resources (OER). We asked several very simple questions to see if students knew what copyleft consisted of, how to use such licenses, how to find them and how to publish a work that they themselves had created. Although a reasonably promising 44% expressed some familiarity with the underlying philosophy of these licenses, in that the authors decide which rights they reserve and which they share (“some rights reserved” vs. “all rights reserved”), there was also a disappointing 27% who answered that these authors renounce all their economic rights but not the moral rights. Further, 17% responded that the author renounced all rights, both moral and economic, while 12% responded that they had no knowledge of such matters. Results were yet worse in related questions, with 80% to 90% affirming they did not know how to use, find or publish works with a CC license. This lack of knowledge is especially disturbing, given the great utility of these licenses for students, who could use the works of others for their assignments without infringing on anyone’s rights, but also to publish their own papers and choose the type of license that best fits their needs or intentions.

Then, due to our understanding that training is key, we wished to know if the students had received some type of recommendation or instruction regarding copyright. The results were not positive, three out of four university students stating they had not received any such information. Just 24% (96 respondents) assured us that they had had some guidelines, but from who? Well, 95 responded that the source of advice and indications had been their teachers. Others answered that the source of help was their friends (23 responses) and library staff (15). It is very interesting that library personnel were identified as an adequate educational source by such a scarce number of students, given that it is becoming frequent to include this type of formation in user education programs. In other words, these respondents did not receive any structured training about these matters, and the

library or library professionals were not a significant source of reference for them. At this point, we wished to determine what the information or advice received consisted of. The vast majority of the responses referred to brief or vague recommendations related to citation or bibliography, along with warnings not to copy/paste the work of others. The most common examples were phrases like “you must indicate your sources,” or “to add information from copyrighted texts, one has to cite them.” Other bits of advice or warnings were sometimes included, on occasion confusing and contradictory (“do not photocopy books, and if you do, don’t let your teachers see you”; “you mustn’t download original files, because it is illegal, as they are private”), or even erroneous information, e.g. “you need to record your work in the Register of Intellectual Property, if not it becomes part of the public domain.” As can be seen, and we commented previously, it is very frequent to come across the false belief that it is necessary to fulfil certain formal requirements in order to enjoy and exercise the copyright of a work created. This is one of the clearest examples of the “popular knowledge” generated surrounding copyright, a body of myths and false beliefs that should be brought into light so that such confusion does not persist. In short, university students have been given very scanty information and instruction about copyright, and the information received was either poor or erroneous in most cases. Given that the source most often reported was the teacher, many indications seemed to be intended to enhance effort on the part of the student when elaborating their work (abusive copying/pasting) rather than to avoid the copyright infringement. Also deserving mention here is the absence of commentaries or information about the Creative Commons licenses and their possibilities of use for academic activities.

Finally, and in connection with the previous section, we included a couple of questions aimed to discover if the students had experienced problems or encountered uncertainties about copyright, and how they had tried to solve the problems. Although we have already seen that their knowledge is very scarce, they are not necessarily aware of that fact. The least conscientious students are precisely the ones who believe they have quite clear notions, for which reason they do not question whether it is possible to make certain uses of works. The results confirm this assumption, as four out of every ten students affirmed they had no doubts in interpreting copyright legislation. The rest admitted they had problems or questions regarding copyright. The following question was obligatory: how do you try to resolve such doubts? The answers were more disappointing than anticipated. The internet is the primary source they resort to (66% of respondents), followed by (46%) the consultation of academic texts about copyright. Bearing in mind the results obtained in the questionnaire, this response does not appear to be very reliable or truthful, and seems to obey a sense of “what I should answer” more than reflecting the actual situation. The following source to which the students reportedly resort when they have doubts is even less reliable: asking classmates, an option chosen by 40% of those surveyed. Again, the library appears as an institution of little relevance for such matters among the student body, as only 14% marked this option on the questionnaire.

Proposal of a Training Program

The proposal presented below is meant to be balanced enough to provide the necessary information, but not excessive. On the one hand, it should give the students the basic knowledge that will allow them to make ethical and legal use of the works created by others and understand the rights they hold over their own creations. At the same time it should not get into excessively complex legal matters, which could turn the students off, or leave them in a state of confusion. To this regard, the plan for training should adequately combine theory and practice, so that a student is involved in the formative process and takes good advantage of the experience, connecting theoretical contents with their corresponding application to real cases from everyday academic life. It is also essential that the training activities take into account the dual role of students as users and creators of intellectual works.

The analysis of the information literacy standards/framework, the points of collision between the university students' activities and copyright legislation, and the results of the student survey have led us to extract three major training modules: copyright law, plagiarism and academic integrity, and copyleft licenses. Obviously, these are not stagnant or isolated compartments, and there is a good amount of interrelation and overlap. The minimal contents upon which to build the training plans are outlined below; these should be adapted to the more concrete needs and circumstances of the academic center where the training sessions would be imparted.

1 Copyright Law

- 1.1 What is copyright? Origin and rationale.
- 1.2 What works are protected? Works excluded from protection. Derivative works.
- 1.3 The author. Rules for their determination. The rights holder.
- 1.4 Content of copyright: moral and economic rights.
- 1.5 Formalities to help protect the work. Is it necessary to fulfil some formal requirement to have protection of the work created?
- 1.6 Duration. General rule and special rules. The public domain.
- 1.7 Transfer of copyright. Individual and collective management.
- 1.8 Exceptions and limitations: what are they and why do they exist? Exceptions and limitations applicable to the academic world: illustration for teaching, quotation, private copying, library privileges.
- 1.9 Technological protection of intellectual works. What are DRMs and how are they protected by law? Relationship between copyright exceptions/limitations and DRM.
- 1.10 Contractual protection: what are licenses? Types of information resources regulated by licenses. Relationship between copyright exceptions/limitations and licenses.

2 Plagiarism and Academic Integrity

- 2.1 What is plagiarism?
- 2.2 Types of plagiarism.

- 2.3 Practical cases of plagiarism adapted to the university student setting.
- 2.4 Practical advice to recognize and avoid plagiarism.
- 2.5 Guidelines on when and how to cite.

3 Copyleft Licenses

- 3.1 Copyleft movement.
- 3.2 Types and characteristics of the Creative Commons licenses.
- 3.3 Meaning of each one of the conditions included in the licenses.
- 3.4 How to locate works with Creative Commons licenses.
- 3.5 How to publish and disseminate one's own work with a Creative Commons license.

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Reflections on Rafael Capurro's Thoughts in Education and Research of Information Science in Brazil

Lena Vania Pinheiro

Abstract

This paper is an introduction to Rafael Capurro's thought and theory with specific reference to the relationship between information, paradigms, ethics and angeletics. The theoretical orientation of hermeneutics and the influence of various epistemological paradigms of information science—physical, cognitive, and social will be discussed as will be a range of arguments and questions associated with information theory and a generalisable theory of messages. The impact of Capurro's work on ethical issues in different cultures, especially intercultural ethics of information, as well as his influence on post-graduate programs and research work in Brazil, and his significant contribution to the philosophical study of information science, will be discussed. This chapter will highlight the presence of Capurro's ideas in citations in research displayed at the Brazilian National Meetings of Research in Information Science - ENANCIB (Encontro Nacional De Pesquisa em Ciência da Informação), specifically the GT-1 Working Group which has focused on historical and epistemological studies in information science and its main issues and approaches.

1 Reflecting on Capurro's Presence and Influence in Brazil

In many fields the scholarly literature forms naturally around a core group of authors, often for reasons not always fully explicated. This influence ebbs and flows at different times and in different countries, but often there is a core group whose work finds a major place internationally, in many oeuvres. This is also true in information science and I am delighted to have the opportunity to honor Rafael Capurro by evaluating the impact that his work has had on information science in Brazil.

In order to better understand the problems considered in this chapter, it is necessary to briefly outline the circumstances of the introduction of scientific and technological information in Brazilian governmental plans, which was late and slow. Although the Brazilian Institute of Bibliography and Documentation (Instituto Brasileiro de Bibliografia e Doc-

umentação), currently the Brazilian Institute for Information in Science and Technology (Instituto Brasileiro de Informação em Ciência e Tecnologia) had been created in 1954, representing a substantial innovation at the time, scientific and technological information became an integral part of Brazilian public policies only in the 1970s. The first National Development Plan (Plano Nacional de Desenvolvimento), in 1972/74, introduced Information as an important policy area and made plans to create a National Information System for Science and Technology (Sistema Nacional de Informação em Ciência e Tecnologia) (although this did not occur). A few years later, scientific and technological information was included among activities to give support to scientific and technological development as a “basic element of support to formulate governmental policies and strategies,” in the Basic Plan for Scientific and Technological Development (Plano Básico de Desenvolvimento Científico e Tecnológico II, 1975/79). In the 1970s the Brazilian Institute for Information in Science and Technology created the first Brazilian masters course in information science. Currently in Brazil there are fourteen post-graduate courses, nine doctorate and MA courses and two masters-only courses. Among these courses taught solely at the post-graduate level there are also professional masters courses, in the following areas: library science, information management, and management of documents and archives. (CAPES, 2015). Relevant bodies that foster research and post-graduate studies include the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico) and the Higher Education Personnel Training Coordination (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), which was founded in 1951. A few years later in 1967, another important financial institution that fosters implementation of research, including research done in information science, was founded—the Financier of Studies and Projects (Financiadora de Estudos e Projetos).

The objective of this study is the analysis of Capurro’s presence in theory and ideas in the post-graduate programs in information science, research groups, and citations at Brazilian Association for Research and Graduate Studies in Information Science’s (Associação Brasileira de Pesquisa e Pós-Graduação em Ciência da Informação) Work Group 1 (GT1-Grupo de Trabalho 1) in order to verify his influence in information science as developed in Brazil. Bachelard’s historical epistemology is the approach that has been adopted, conceived in the framework of his open philosophy or Philosophy of No, which pursues a new experience in contradistinction to old knowledge (Bachelard, 1987, pp. 9, 12, 13). It emphasizes Japiassu’s component that he describes as “relations that are susceptible of existing between science and society, between science and the diverse scientific institutions or among diverse sciences” (Japiassu, 1977). The primary quantitative method chosen here to measure the influence of Capurro’s ideas on Brazilian information science is citation analysis. However, we should also recognize the limits of quantitative methods in painting the whole picture and, as such, it is necessary to include qualitative analyses of Capurro’s influence as well.

Capurro’s presence in information science in Brazil extends beyond his influence in post-graduate programs, research groups, and citation in the Work Groups referred to above. His publications have been the subject of significant studies by a number of

Brazilian scholars, including Matheus (2005), Marcial, Ramos, Shintaku, Rodrigues & Vasconcelos (2007) and, recently, Menezes (2015), whose article *Informação, um excursão crítico*, provides an analysis of Capurro's paradigms alongside the work of Rendon Rojas and Ronald Day, who also favor the pragmatic-linguistic turn in information science. Besides these articles, several Brazilian translations of Capurro's work have been made (for example, Capurro 2003b).

2 Rafael Capurro's Main Ideas and Theories

In Rafael Capurro's extensive and dense scientific production, it is possible to highlight his focus on the concept of information, research on information paradigms, on angeletics and on the issues associated with ethics in information science. In Capurro and Hjørland (2003) we see the development of aspects of Capurro's post-doctoral thesis, *Hermeneutics of Domain-Specific Information* (1986). Through an explicitly hermeneutic approach, Capurro seeks to establish the link between knowledge and action on the one hand and cognitive and practical processes on the other. Key to understanding this is the relationship between the novelty of the search function of automatized scientific information and the conception of system and its role in society (Capurro, 2003, p. 2).

Epistemology and information science have a complex background and Capurro's analysis of the paradigmatic changes that influence these areas, especially the relationships between the physical, cognitive and social paradigms, presents a significant theoretical contribution to our discipline. Elements of his hermeneutics are evident when he mentions Kuhn's paradigms; he criticizes the "excessive schematism" in this formulation giving examples of scientific revolutions that question the veracity of such accounts (Capurro, 2003, p. 3).

Different epistemological trends influence information science, especially in relation to information retrieval and Capurro highlights the social and pragmatic character of epistemology focused on cognitive processes, (Capurro, 2003, pp. 4-5). Capurro (2003, p. 6) highlights how the physical, cognitive, and social paradigms operate. The first one is an epistemology of information retrieval strongly related to Shannon's and Weaver's theory of information. It prioritizes the physical object in its transmission from a sender to a receptor and in this sense is related to Angeletics and the issue between information and messages. The fundamental difference in the cognitive paradigm is established between knowledge and its recording; it is the information content that involves relationships and understanding (in the sense of including deeper considerations of epistemology and ontology). The social paradigm embodies the more material constraints that pertain to human life and are largely left out of cognitive-oriented epistemology.

Regarding "information society," Capurro (2003, p. 10) emphasizes the relation between epistemological principles and ethics. Moreover, modern technology generates new social, economic, technical, cultural and political problems which, in turn, need to be acknowledged in theory or in practice. This is the challenge that information science has to administer.

Epistemology has a central role in contextualizing how we study and how we understand the meaning of these changes.

The review article by Capurro and Hjørland in *Annual Review of Information Science and Technology*, (Capurro & Hjørland, 2003), and translated in Brazil in 2007, is an extensive study that contributes to deeper knowledge of these epistemic issues. The central focus indicates the different concepts of information, from the etymology of a word (its Latin roots and Greek origins) to the development of its history. Capurro and Hjørland (2007, pp. 153-154, 160) warn against “the danger” of persuasive definitions and emphasize that controversies in discussions about information reflect its complexity. They also present different approaches to theories of information, beginning from Shannon and Weaver (Capurro & Hjørland, 2007, p. 188).

They advance the view that it is important to consider information as an interdisciplinary concept taking part in distinct fields of knowledge such as the natural sciences, humanities and social sciences, where information science is included. Capurro and Hjørland examine whether a common core of the concept of information can be found in interdisciplinary theories. Using Capurro’s (2001) statement as an argument, they come to the conclusion that information can and should be studied as part of an array of different disciplines, and not only information science (Capurro & Hjørland, 2007, pp. 175-176). Capurro and Hjørland (2007, p. 182) particularly criticize the lack of studies on the concept of meaning, especially in terms of how semantics and pragmatics are “essential for a better theoretical development of retrieval information, retrieval of documents.” They recognize that the concept of information cannot be considered in isolation, it has to be studied in relation to other concepts (Capurro & Hjørland, 2007, p. 193).

Angeletics is a new interdisciplinary theory, proposed and formulated by Capurro, and strongly related to rhetoric. This theory represents one of Capurro’s most strongly argued ideas. It begins by addressing “the ontological meaning and today’s prevailing epistemological use of information as message communication” (Capurro, 2003, p. 2). Capurro investigates, as he generally does, the etymology of the word, derived as it is from the Greek *angelia*, related to message. He emphasizes the distinction with Michel Serres’s angels, a theological tradition. Focusing on the potential contribution of Angeletics to the study of the “production, distribution, interpretation, storage and control of messages and messengers in pre-modern science,” the described processes are similar, although not cognate with, those generally found in early information science.

The initial focus is Shannon’s theory, in which Capurro emphasizes how it does not deal with information per se, but with message transmission, and, contrary to the commonly adopted idea, correlates information to uncertainty. In fact, it is not about a theory of information at all, it is about a theory of messages, with the result that much of what we tend to understand as information implies more about processes of communication. In this sense, Capurro follows Niklas Luhmann’s thinking in differentiating message and information, the first being “the action of offering something (potentially) meaningful to a social system”; and the second—information as “the process of selecting meaning from different possibilities offered by the message” (Capurro, 2003, p. 3). At the end of the text,

Capurro (2003, p. 10) continues his speech in the same tone and asks a provocative question: "If 'the medium is the message' (McLuhan), what is a message?"

The presence of Rafael Capurro goes beyond his scientific production. Action is also an efficient tool for dissemination of issues related to ethics, and the best example of this is Capurro's founding role with the International Center for Information Ethics (ICIE), whose influence has become global in focus, extending all over the world, including Brazil. In a lecture in Mexico City, at the international seminar "Information Ethics," Capurro (2008) addressed issues associated with the intercultural ethics of information, its history, current situation and perspectives.

As a major concern at the international level, ethics began to be discussed at UNESCO in 1997 and the theme was expanded in the academic environment and in social institutionalization through the founding of organizations dedicated to ethics, including the ICIE. Concerns with ethics are closely related to techniques of information usage and communication. Thinking about the ethics of different cultures is a central concern, as is the impact of information and communication technologies in, and on, local cultures. By definition, and in a more limited sense, intercultural ethics "studies ethical problems of the impact of ICT in different cultures, as well as the manner in which specific issues to this technology are interpreted from different cultural traditions" (Capurro, 2008).

3 Capurro's Presence and Influence in Post-Graduate Programs and Research Groups

The institutionalization of information science as a field of knowledge has followed an epistemological and social course similar to those in other areas, going through the stages of establishing post-graduate programs, the editing of scientific journals, the development of research programs, the setting up of scientific societies, and the promotion of scientific events. Here we will focus on Capurro's role in two of these.

As sources for this investigation, we included the following:

- nine Brazilian doctorates in information science,
- the Research Groups accredited by the Directory of Research Groups of the National Council of Technological and Scientific Development
- papers presented at the Work Groups of the Brazilian Research Association for Research and Post-Graduation in Information Science - ANCIB (Associação Brasileira de Pesquisa e Pós-Graduação em Ciência da Informação) during the National Meetings of Research in Information Science - ENANCIB (Encontros Nacionais de Pesquisa em Ciência da Informação).

Brazilian post-graduate programs began in the 1960s, when the international panorama of Science and Technology was changing dramatically. Among the main changes, Schwartzman (2001, pp. xv-xvii) highlights

the greater closeness between C&T and industry and markets, generating demand for specialized qualification and knowledge; acceleration of the process of technological innovation and market competition, having as one of the main consequences the internalization of industries and markets, with new associations and merging of companies in various countries; and a more global nature of science, bringing greater international mobility to researchers.

In information science, post-graduate programs started in 1970, with the masters in information science from the Brazilian Institute of Information in Science and Technology, the first one in Brazil and Latin America. Pinheiro (2007) has outlined developments in these educational initiatives.

From 2007, it became much easier for post-graduate researchers to choose information ethics and philosophy of information, themes central to Capurro's investigations. Prior to then, only the Federal University of Paraiba offered a research line in ethics, management, and information policy. From 1995, and under the guidance of Maria Nelida Gonzalez de Gomez, a more comprehensive approach was emerging from the Brazilian Institute of Information in Science and Technology, with a developing research line dedicated to theory, epistemology and interdisciplinarity. The Brazilian Institute of Information in Science and Technology has had an important role in studies and research in these areas, for instance, in the design of Work Group 1 "Historical and Epistemological Studies in Information Science" at the National Association for Research and Graduate Studies in Information Science.

In our study here, in the areas of concentration and lines of research relating to the nine doctoral programs in information science considered, we found that the inclusion of information ethics was noted in the research orientation of the post-graduate program in information science at the Brazilian Institute of Information in Science and Technology and also at the Federal University of Rio de Janeiro's Sociocultural, Political, and Economical Configurations of Information program. The research orientations were described as, variously: "Studies of Ethics and Information Policy and of Information and Communication Technologies in Contemporary Society; Regime of Information. Interfaces of Information with Ethics and Environmental Sustainability in Contemporary Times" (IBICT. PPGCI. UFRJ. ECO, 2015).

Capurro's participation as a guest lecturer in the events promoted by programs such as the first Brazilian Symposium on Ethics of Information, held at the Federal University of Paraiba, in 2010, while not explicitly establishing the studies, have provided ongoing legitimacy. Capurro twice visited the Brazilian Institute of Information in Science and Technology as a visiting professor, giving lessons, delivering lectures etc., first in 2010 and then in 2014. Furthermore, Professor Capurro took part in many research and teaching activities at the Federal University of Minas Gerais), and at São Paulo State University.

Brazilian Research Groups were selected from among those whose focus included information ethics and philosophy of information. They also had to come from post-graduate programs in information science. Only one of the studies was directly relevant; it was entitled "Studies in Epistemology, Ethics and Information Policy" and was linked to Federal Fluminense University and organized in 2014. The objectives of the research group, led by

María Nélida González de Gómez and (the late) Eduardo Ismael Murguía Maraño were “to study the relationship between the ethics of information, the integrity of research and ethical issues in science and technology” and among expected results, to contribute to reflexive dialogue of information science with other areas of knowledge, epistemic, ethical, and political information issues.

Out of four groups (listed in the Directory of Research Groups of the National Council of Technological and Scientific Development) dealing with themes related to philosophy of information, only one was identified as directly linked: the Brazilian Institute of Information in Science and Technology research group Philosophy and Information Policy, led by Clóvis Ricardo Montenegro de Lima and Aldo de Albuquerque Barreto. One of the objectives of this group is “to develop a research agenda on Philosophy of Information, especially issues on practical philosophy such as Ethics and Politics of Information and to strengthen studies of Philosophy of Information in Information Science.” It is appropriate to point out that a group focusing on philosophy and ethics of information was identified at the Federal University of Paraíba organized in 2009 and linked to the Philosophy Department and this was led by Ana Thereza de Miranda Cordeiro Dürmaier and Rafael Capurro. The Federal University of Paraíba’s postgraduate program offers a course *Ethics, Management, and Information Policies*, and the syllabus is described as involving “theoretical, conceptual, reflexive, and methodological issues directed towards the management cycle, information policies, ethical and social inclusion and responsibility, methodologies in knowledge and information management, organizational social networks, associated or not with support technologies” (PPGCI, UFPB, 2015). These results confirm the influence of Capurro’s thought and theory in post-graduate programs and research groups. We can see that Capurro’s scholarship, teaching and mentoring activities have had a significant impact in how post-graduate programs and research groups have been developing in Brazilian information science over the past two decades.

4 Capurro’s Works: Citations at the National Meeting of Research in Information Science

Among the laws, methods and techniques of bibliometrics, citation analysis may be considered the most important (Araújo, 2006). It is about a “set of one or more bibliographical references that, included in a publication, make evident the links among individuals, institutions and research areas, as they show the relation of one publication to the other” or, still, “the part of bibliometrics that investigates the relations between citing documents and cited documents considered as units of analysis, as a whole or in their diverse parts: author, title, geographic origin, year and language of publication, etc.” (Foresti, 1989, *apud* Araújo, 2006, p. 18).

Citation analysis plays a relevant role in the attribution of credits, recognition and development of science and nowadays, with the internet, it is a relevant tool promoting the universal visibility of science. We should remain careful to not, however, exempt such

methods from critique that looks to the scientific, ideological, political, economic, cultural, institutional and personal tendencies which creates the citation in the first place. It is important to remain aware of how a quantitative method can be made relative, if historical contexts and circumstances are taken into consideration or a qualitative method is also used.

In order to verify the degree of citation of Capurro's works by Brazilian researchers, the source texts selected were papers presented at the National Meeting of Research in Information Science as being representative in the dissemination of information about research production in information science in Brazil. The tool used for data collection was the database from the National Meeting of Research in Information Science, which includes data from the year of the first meeting in 1994 through to 2013. The study covers the period from 2003, when work done by Rafael Capurro was cited for the first time in this domain, to 2013. As a methodological procedure, the initial search was done through the following site: <http://repositorios.questoesemrede.uff.br/repositorios/handle/123456789/2/> advanced-search by using the word "Capurro" in the search type "References." This search resulted in 175 documents containing references where the word "Capurro" appeared. After the analysis of the results, three entries were excluded, because the word "Capurro" was in the title and not as the author, and one paper was authored by Capurro himself. Therefore, the total was 171 references to scientific communication, whose authors cited Capurro, considering all of the conference publications through to 2013.

Afterwards a list of metadata for each citing document was prepared and the following fields were copied in an Excel spreadsheet: year of the event, title of the citing document, abstract of the citing document in English, abstract of the citing document in Portuguese, keywords of the citing document, number of the work group where the citing document was introduced, list of references in which one of the authors is Capurro. Results taken from the spreadsheet document, using the Dynamic Table, are as follows:

- number of communications (citing ones) citing Capurro per year of event;
- list of Capurro's articles cited in citation frequency; and
- number of Capurro's publications cited by work groups at Brazilian Association for Research and Graduate Studies in Information Science.

As an initial result, it is possible to confirm that Rafael Capurro started to be cited in communications at the National Meeting of Research in Information Science in 2003 and there is a major increase in the last three years (2011, 2012, 2013), as shown in Table 1.

Table 1 National Meeting of Research in Information Science works citing Capurro's publications

National Meeting of Research in Information Science (Year)	Number of Works Citing Capurro's Publications
2003	1
2005	4
2006	7
2007	20
2008	16
2009	11
2010	12
2011	28
2012	33
2013	30

The growth of citations is related to facts mentioned in section three of this text, when Research Groups were formed including ideas linked to Capurro's earlier scholarship, as well as research lines in post-graduate programs in information science. In addition, Capurro's guest lecturing at the Federal University of Paraiba and at the Brazilian Institute of Information in Science and Technology may also have contributed to the growth in citations. It can be argued that the concepts and theories formulated by Capurro were disseminated and debated within Brazilian scholarly communities and developed as identifiable research themes. While information science in Brazil, historically, has been concentrated in a few institutions with a limited number of researchers, with the expansion of programs the areas of research have also expanded and this had led to greater emphasis being placed on theoretical and philosophical studies.

Capurro's articles cited in publications associated with the National Meeting of Research in Information Science are shown in Table 2.

Table 2 Titles of Capurro's publications cited at National Meetings of Research in Information Science (ENANCIB) in frequency order

Year & Title of Capurro's Document Cited	Number of citations
2003-Epistemologia e Ciência da Informação	70
2007-O conceito de informação	62
2003-The Concept of Information	24
2003-Epistemologia y ciencia de la información	15
1992-What is information science for? A philosophical reflection	12
1991-Foundations of information science: review and perspectives	6
2009-Pasado, presente y futuro de la noción de información	5
1985-Epistemology and Information Science	2
1996-On the genealogy of information	2

Year & Title of Capurro's Document Cited	Number of citations
1999-Is a Unified Theory of Information feasible? A trialogue.	2
2000-Hermeneutics and the Phenomenon of Information	2
2001-Ética para provedores e usuários da informação	2
2004-Intercultural Information Ethics	2
1978-Information. Ein Beitrag zur etymologischen und ideengeschichtlichen Begründung des Informationsbegriffs	1
1988-Informationsethos und informationsethik ö Gedanken zum verantwortungsvollen Handeln im Bereich der Fachinformation	1
2002-Ethics and public policy within a digital environment	1
2002-Perspectivas de una Cultura Digital en Latinoamerica	1
2003-Angeletics: a message theory	1
2005- O crescimento mundial da rede digital leva a uma ética global da informação?	1
2005-Etica de la información: Un intento de ubicación.	1
2008-On Floridi's metaphysical foundation of information ecology	1
2009-Past, present, and future of the concept of information	1
2010- Lo esencial es aquello que está entre las culturas	1
2011-Gestão do Conhecimento Cético.	1
Total	217

This table helps to identify the different factors that guide research on certain themes and authors in a network that intertwines:

1. the quality of the scientific production
2. its availability on the internet
3. translations in the vernacular, in this case, in Portuguese
4. the relevance of topical issues that are part of the international agenda of research
5. the importance of research lines financed by the government.

In other words, the two most cited documents were “Epistemology and information science” and “The Concept of Information,” both translated into Portuguese. “Epistemology and Information Science” is also cited in English and Spanish and “The Concept of Information” in English and Portuguese. Both of them represent central issues in information science.

Special attention should be given to the organization of Capurro's documents on his internet portal. It gathers practically all of his research work together in the one place (along with many activities associated with his academic life), greatly facilitating information retrieval. Capurro publishes research in many languages (including Portuguese) many of which are yet to be translated to English. While his Portuguese language output is well-cited, documents in German are among those with a lower frequency as are those with a specifically ethics focus (which is interesting given that the issue is given a lot of attention in current studies, motivates research groups and is of relevance to professional

practice courses in graduate education). Evidently, reading on this subject is being dispersed across a number of documents on the subject.

The Brazilian Association for Research and Graduate Studies in Information Science comprises 11 work groups (*Grupo de Trabalho- GT*):

- GT-1: Historical and Epistemological Studies in Information Science
- GT-2: Knowledge Organization and Representation
- GT-3: Mediation, Circulation and Appropriation of Information
- GT-4: Information and Knowledge Management
- GT-5: Politics and Economy of Information
- GT-6: Information, Education and Labor
- GT-7: Information Production and Communication in Science, Technology & Innovation
- GT-8: Information and Technology
- GT-9: Museum, Heritage and Information
- GT-10: Information and Memory
- GT-11: Information & Health

In order to verify the citation level of Rafael Capurro in the different Brazilian Association for Research and Graduate Studies in Information Science work groups, citation patterns were analyzed and presented for every work group and the result are shown in Figure 1.

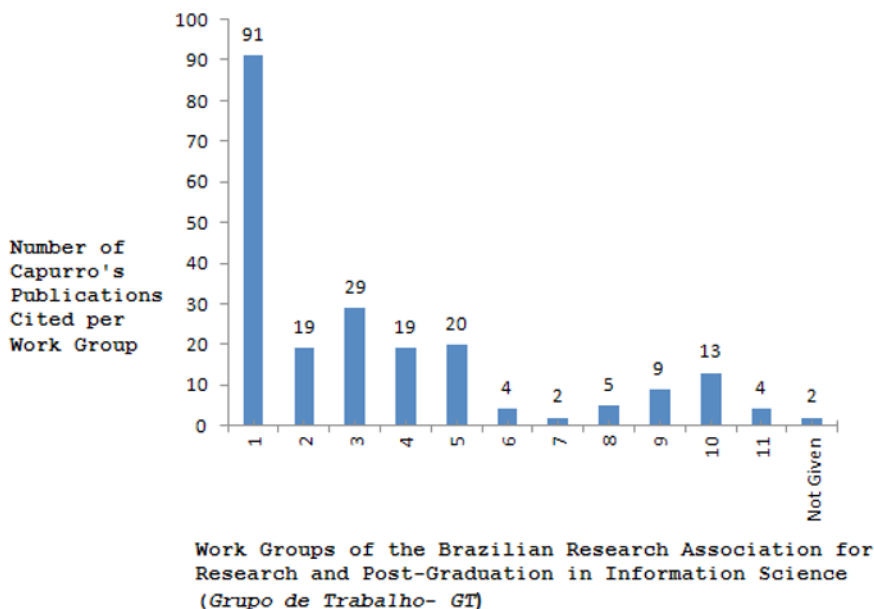


Fig. 1 Number of Capurro's Publications Cited per Work Group of the Brazilian Research Association for Research and Post-Graduation in Information Science

It is important to emphasize that in every work group, including those dedicated to the most diverse issues in information science, Rafael Capurro is cited. This confirms the extent to which his scientific production is considered fundamental to much of the theoretical framework of information science. Evidently, it is in the GT-1 of the historical and epistemological studies of information science that Capurro's ideas are essential, and here we see the significant number of cited publications, a total of 91. The number of citations in the other GTs is decreasing: 29 in GT-3, 20 in GT-5, 19 in two GTs, the second and the fourth, and GT-10 with 13 citations. As observed, there is a significant distance in numbers between GT-1, with a higher number of citations, and the other ones, in a total of 217 cited publications.

5 Some Reflections About the Reflexivity of Capurro's Thought in Brazil

This study briefly analyzes Capurro's influence in information science in Brazil, without exhausting the issues he has addressed and discussed in his work in Brazil and more broadly. The focus has been mainly directed towards placing his focus on epistemology, information concepts, and information ethics into the context of the work of a community of practitioners. As Rafael Capurro's theory was reread and reflected upon and his scientific contribution to information science was viewed once more, in regard to Brazil, much of what was already suspected emerged from the data afresh. Capurro's ideas are widely spread across the globe, he is a modern navigator on a quest to discover the global relationships between information and philosophy. As a man of his time, indeed probably ahead of it, he not only makes great efforts to understand the technological world around us but to expand its philosophical grounding. He demonstrates a magnanimity which extends to young people and experienced professors and researchers alike and cultivates joint interests in philosophical concerns among people with an interest in information and ethics in all parts of this vast world. A Uruguayan by birth, Capurro evidences an accurate, sensitive, and dedicated view on the contingencies of information practice in South America.

According to the data presented in this paper, it is possible to demonstrate Rafael Capurro's growing presence in Brazilian academic and scientific discourse, either by stimulating the creation of research groups, lines of research or in fostering colloquial events and participating in the process of national scientific production. These are characteristics of his strong influence and, undoubtedly, his invaluable contribution to the vitality of the theoretical foundations of this area of study in Brazil. Capurro's theoretical concerns, his critical spirit, and his solid philosophical background, provide engaging arguments to stimulate inquiry and they raise questions that help to promote fertile dialogue, enriching information debates among thinkers from diverse cultural and epistemological backgrounds.

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Content Selection in Undergraduate LIS Education

Chaim Zins and Placida L. V. A. C. Santos

Abstract

The study presented in this article is aimed to improve the academic education in the field of library and information science by structuring the curricular and pedagogical reasoning that shapes the contents of undergraduate academic programs. It was composed of two methodological phases. The first phase was a systematic Critical Delphi study with 21 leading information science scholars from Brazil. The second phase was an unsystematic formative evaluation of the content categories. The evaluation was based on a Grounded theory study of more than 100 programs worldwide. The study resulted in a universal model that sets the guiding principles for developing bachelor's degree programs applicable worldwide. The model, which is actually composed of two complementary models, is a systematic four step developing process (model_{1,1}) and a structured plan of 288 content categories (model_{1,2}). It is grounded on theoretical foundations and empirical studies.

The field of library and information science (LIS) is constantly changing due to the never-ending developments of new information technologies, which change the nature of the information professions. This condition is reflected in the literature that repeatedly discusses the nature and objectives of LIS education (e.g. Buckland, 2012; Cox & Larsen, 2008; Elmborg, 2008; Given & McTavish, 2010; Hjørland, 2000; Singh & Mehra, 2013). Our review of LIS studies programs worldwide has not found a consensual model that would be acceptable by all the institutions that we surveyed that offer a bachelor's degree. The problem is even more serious when we zoom in at the country level. In some countries the divergence among the programs is striking.¹

1 Compare, for example, the Undergraduate Minor in Information Studies and Technology program at the School of Information Sciences, University of Tennessee, Knoxville (<http://www.sis.utk.edu/minor>, accessed on April 23, 2014) with the undergraduate program at the School of Information: Science, Technology, and Arts, the University of Arizona (<http://sista.arizona.edu>,

This study was initiated in October 2011 at the National Meetings of Research in Information Science (ENANCIB) annual conference, which is the main annual LIS meeting in Brazil attended by hundreds of researchers and practitioners who teach in 38 academic institutions. While meeting colleagues they asked to replicate the study *Knowledge Map of Information Science* (Zins, 2007a, 2007b, 2007c, 2007d), which clarified the various conceptions of the field and mapped its main subfields; this time—in the context of LIS studies in Brazil. The idea was to formulate the basics of LIS education that are acceptable by all the institutions surveyed that offer a bachelor's degree.

The study was expected to be quick and simple, but it turned out to be both demanding and exhaustive. Initially, the objective was to define the basic knowledge and skills that LIS departments in Brazil should teach as part of the requirements of a bachelor's degree. We assumed that the 38 institutions taught the same basic knowledge and that the diversity among them would be embodied in the additional courses and programs that were designed to meet their specific needs. The research methodology was Critical Delphi. A Critical Delphi study is, usually, composed of three successive rounds. In the first round the researchers present the issues, in the second round they discuss the various positions, and in the third round they summarize the conclusions. However, while analyzing the responses in the first round we discovered that the conditions were far more complicated. The participants had difficulty distinguishing between the current state and the ideal state of LIS education. Their initial positions reflected the triple head structure of the BA studies (i.e. library studies [librarianship], archival studies, and museum studies [museology]), the special interests of their academic environments, as well as the tension between the documentation and the technology competing traditions.

The inevitable gap between the desired state and the existing state of affairs was striking. Once again it reminded us that academic programs are planned for given communities, bound by given conditions, designed for given students, and aimed to be taught by a given cohort of staff. What is basic in central universities is not necessarily basic in peripheral and remote universities, and vice versa. Moreover, we noticed that most of the responses were grounded in the Brazilian context and if we omit the Brazilian perspective, we uncover essential positions relevant for LIS studies worldwide. This insight resulted in revising the initial objectives of the study by adding the universal perspective. Consequently, the study was broadened and ended up in two interrelated and complementary exemplary models, universal and local. The universal model₁ sets the guiding principles for developing BA programs applicable to LIS education worldwide. It is presented in this article. The second model₂ demonstrates the curricular and pedagogical reasoning by setting the guiding principles for developing academic programs in Brazil (see Zins & Santos, 2015). The term “model” refers here respectively to the systematic process of program development (model_{1,1}) and to the structured scheme, or plan, of contents (model_{1,2}). The two meanings

accessed on March 16, 2014). While the IS&T minor at UT “will teach you about the impact of information and information technology on society, individuals and organizations” the school’s mission at UA “is to provide expertise and promote research in computational methods and thinking across disciplines...”. The diverse missions are embodied in the two curricula.

stand for two complementary models ($_{1,1}$ and $_{1,2}$) that are combined into an integrated model,² meaning, the systematic process of curriculum development requires grounding the content selection on the structured plan.

Methodology

The scientific methodology is Critical Delphi. Critical Delphi is a scientific method that facilitates critical and reflective series of in-depth structured and moderated peer discussions among experts (the panel) on the various aspects of the discussed issues while confronting their own biases and prejudgments. The panel was composed of 21 participants. Initially, 58 scholars were invited to participate in the study, 27 agreed to receive the first questionnaire, but only 21 responded, and they formed the panel. The 58 researchers were selected from a database using the Lattes Platform and the Brazilian LIS associations. The Lattes Platform is an information system maintained by the Brazilian Government to manage information on science, technology, and innovation related to individual researchers and institutions working in Brazil. The panel members are officially considered as the most important researchers in Information Science in the country. They represent the main aspects of LIS studies in Brazil and are affiliated with 11 central and peripheral academic institutions (see Appendix A).

The study was composed of three successive rounds of structured questionnaires. The discussions among the panel members were indirect and anonymous, and were moderated by the researchers. The first questionnaire was submitted to the panel in November 2011. It contained 12 detailed and open-ended questions. The second questionnaire was submitted in March 2012 and contained 23 questions. The third questionnaire was submitted in August 2012 and contained 17 questions (see selected excerpts from the three questionnaires in Appendix B).

The return rates were high: 21 scholars (100%) participated in first round, 18 (85.7%) participated in the second round, 18 (85.7%) participated in the third round and 18 (85.7%) participated in all the three rounds (see Table 1).

2 The subscripts are aimed to clarify the different meanings of “model” in the article. “Model₁” stands for the universal model and for an integrated model, which is composed of model_{1,1} and model_{1,2}. “Model_{1,1}” stands for the systematic development process. “Model_{1,2}” stands for the structured plan of contents. “Model₂” stands for the local (Brazilian) model.

Table 1 Panel selection & statistical details of the study

<u>First invitation</u>	<u>Accept Invitation</u>	<u>Respond Round 1</u>	<u>Respond Round 1</u>
58 (100%)	27 (46.5%)	21 (36.2%)	21/27 (77.7%)
Return Rates			
<u>Round 1</u>	<u>Round 2</u>	<u>Round 3</u>	<u>Round 1 + 2 + 3</u>
21 (100%)	18 (85.7%)	18 (85.7%)	18 (85.7%)
<u>Questionnaire</u>	<u>Round 1</u>	<u>Round 2</u>	<u>Round 3</u>
<i>Submission Date</i>	November 7, 2011	March 4, 2012	August 11, 2012
<i>Number of Questions</i>	12	23	17

While writing the chapter we decided to demonstrate the model_{1,2} by exemplary fields and courses taken from academic curricula worldwide. We reviewed more than 100 programs in 70 universities from which we selected to refer in the footnotes. In the footnotes we refer to 35 universities from 12 countries (see Appendix C); all of them offer a bachelor’s degree in information science based studies. Reviewing the academic programs was not part of the initial research agenda, but eventually it turned to be an invaluable methodological building block that played an important role in shaping the model_{1,2}. In a retrospective, the study was composed of two methodological phases. The first was a systematic Critical Delphi study with 21 leading information science scholars from Brazil. The second was an unsystematic formative evaluation of the model_{1,2}, which was based on a Grounded Theory study that studied more than 100 academic programs worldwide.

The Model₁

Building Blocks

An academic program, or a curriculum, is a structured series of courses and activities (workshops and professional training) designed to provide specific knowledge and develop certain skills. The scope of the knowledge covered by the curriculum is grounded in the conception of the field that sets the boundaries of the knowledge domain. A curriculum is aimed at achieving specific goals; it is planned for given academic settings (e.g., central universities, community colleges, and online courses); bound by the given social conditions (e.g., technological sustainability, information accessibility, legal regulations, and ethical norms) and academic milieus (e.g., theoretical based milieu vs. practical based milieu); designed for given students; intended to be taught by given staff and utilized through a given set of effective teaching methods.

In a nutshell, an academic curriculum is developed and taught in given social and academic conditions. It is aimed at achieving academic goals that are embodied in the teaching contents that are planned to be taught within a specific time framework. These elements are culminated in three building blocks: goals, contents, and structure. The goals shape the contents, and the contents should fit into the structure.

This sets the basis for a systematic developing process which is composed of four successive phases. First, the faculty members are required to define the academic goals. Next, they need to specify the derived contents. Then, they have to organize the courses and activities in a reasonable order in a structured plan. Finally, they should evaluate the quality of the program by assessing if the planned courses and activities meet the academic goals, and if the structured plan is really reasonable. This four phase process is applicable, *mutatis mutandis*, for developing each of the academic courses and activities as well.

Academic Goals

The academic goals embody the *raison d'être* and the guiding principles of the curriculum. They are affected by the social and academic conditions, grounded in the conception of the field, and embodied in the contents and the teaching methods. The social and academic conditions vary in the various environments and lead to different programs. In this study we focus on the common knowledge across the diversified environments. Therefore, we omit the environmental conditions and stay with the conception of information science and the planned contents and teaching methods.

The conception of information science sets the boundaries of the planned LIS curriculum. Zins (2007a) defined six generic conceptions (models) of information science. These are:

1. The Hi-Tech Model. Information science is the study of the mediating aspects of data, information, knowledge, and message (D-I-K-M) phenomena as they are implemented in the hi-tech domain.
2. The Technology Model. Information science is the study of the mediating aspects of D-I-K-M phenomena as they are implemented in all types of technologies (i.e. written, published, and digital).
3. The Culture Model. Information science is the study of the mediating aspects of D-I-K-M phenomena as they are implemented in the cultural/social domain.
4. The Human World Model. Information science is the study of all the aspects of D-I-K-M phenomena as they are implemented in the human realm, biological and cultural.
5. The Living World Model. Information science is the study of all the aspects of D-I-K-M phenomena as they are implemented in the living world, human and non-human.
6. The Living & Physical Worlds Model. Information science is the study of all the aspects of D-I-K-M phenomena as they are implemented in all types of biological organisms, human and nonhuman, and all types of physical objects (Zins, 2007a, p. 340).

The six models imply six different bodies of knowledge. Consequently, they establish six different fields of knowledge; all carry the same name, *information science*, and six different LIS BA academic programs. The third model represents the mainstream of the IS academic

community³ as well as the position of the panel in this study. The model presented here follows the culture model of information science.

Academic goals are formulated as achievements (i.e. what the program, or the student, is expected to achieve) or as activities (i.e., what the program, or the student, is expected to do).⁴ The achievement goals are embodied in the planned contents. The activity goals are embodied in the teaching methods. Evidently, the teaching methods are necessary for providing the contents, but our main interest is the common knowledge across the various programs. Therefore, we omit the teaching methods and focus on the planned contents; meaning, we focus on achievement goals.

Achievement goals are formulated for programs and students. Programs' goals set the basic standards for programs while the students' goals set the basic requirements from each and every graduated student. Programs' goals and students' goals are interrelated; in fact, they are unseparated complements.

A BA LIS program should provide students the basic knowledge and skills necessary for being (1) literate (i.e. ability to read and write and study), (2) educated and knowledgeable (i.e., have basic knowledge and skills as academics), be familiar with (3) the basic theoretical and empirical knowledge of information science and (4) the basic theoretical and empirical knowledge of their fields of expertise (specialization), (5) be able to perform basic practices and tasks as information professionals (i.e., have practical knowledge common to all information professionals), and (6) as professionals in their fields of expertise (i.e., have practical knowledge common to all professionals in their specific fields of expertise). The six elements must be implemented in courses.

The goals for students do not affect the course list provided by the program, but they are necessary for setting standards and evaluating criteria of the graduated students. Note that they should be compatible with the same 6 elements: a graduate is expected to be (1) literate, (2) educated and knowledgeable, be familiar with (3) the theoretical and empirical knowledge in the field of information science and (4) in his/her fields of expertise, (5) be able to perform basic practices and tasks as an information professional, and (6) as a professional in his/her fields of expertise.

The six goals are culminated in four foci—general education (goals 1 and 2), general information science education (goal 3), specialization (goal 4), and professional training (goals 5 and 6)—that turn into four groups of contents.

3 See the stated approach of the iSchools organization; a consortium of 65 universities worldwide (<http://ischools.org/about/>, accessed on June 15, 2014): "The field is concerned broadly with questions of design and preservation across information spaces, from digital and virtual spaces such as online communities, social networking, the World Wide Web, and databases to physical spaces such as libraries, museums, collections, and other repositories."

4 See the BA program at the Faculty of Information, University of Toronto. The goals are stated as achievements ("(students will) learn how to...") and as activities ("(students will) be exposed to..."). (<http://www.ischool.utoronto.ca/idm>, accessed on June 15, 2014).

Contents

The contents are the core of an academic program. Information science programs include four content groups: general non-information science contents that are common across fields and categorized as general education (GE), general information science knowledge (GIS) that are core contents common to all LIS programs, knowledge in the specialized fields of expertise (SP), and practical knowledge (PR) relevant to information professionals. The four content groups are grouped in two main parts, general education (GE) and information science education (GIS, SP, and PR), which set the basic structure of all BA academic programs worldwide although they are expressed in various forms.⁵

The general education part consists of six categories (categories 1-6). The information science education part includes the GIS, SP, and PR contents and consists of 30 categories in 10 sections (categories 7-36). Each of the 36 categories has two levels, basic (B) and advanced (A), which indicate its importance in the eyes of the faculty; a total of 72 categories (see Table 2).

Defining the importance of a subject matter, in terms of the scope and intensity of the coverage, is illusive and contextually based. To simplify the definitions we base them in a quantitative criterion—the duration of the suggested courses. The basic level is equivalent to an academic course (i.e., 30 academic hours; an academic hour is 45 minutes). The advanced level is equivalent to two academic courses (i.e., 60 academic hours) or more.

The *general education* part covers fields that are not part of information science and we expect that open minded educated knowledgeable graduates will be familiar with. It is composed of six categories. Category 1 encompasses literacy studies.⁶ It provides basic knowledge and skills that facilitate learning and social communication; among them language skills, communication skills, learning skills, computer literacy, internet literacy, and the like. Category 2 comprises the humanities,⁷ (e.g., art, literature and mathematics⁸).

5 See the undergraduate program at the University of Pittsburgh. It is composed of four parts: (1) basic skills, (2) general education, (3) related areas, and (4) information science. Still, it keeps the general education (1-3)—information science education (4) structure (<http://www.ischool.pitt.edu/bsis/about/degree-requirements-2006.php>, accessed on June 15, 2014).

6 See the University of Pittsburgh, *op. cit.*, the LIS BA program at the University of Southern Mississippi (<http://www.usm.edu/undergraduate/library-and-information-science-licensure-ba/degree-plan>, accessed on May 25, 2014), courses CIVC 101 (Introduction to Civic Engagement) and COOP 101 (Career Management and Professional Development), the B.S. in Informatics at Drexel University (<http://catalog.drexel.edu/undergraduate/collegeofinformationscienceandtechnology/informatics/#degreerequirementstext>, accessed on May 1, 2014), and course IS 200 (Information Literacy and Critical Thinking), the School of Library and Information Science, University of Kentucky (<http://ci.uky.edu/lis/undergraduate/courses>, accessed on May 25, 2014).

7 See the University of North Texas's Core Curriculum requirements (<http://catalog.unt.edu/content.php?catoid=9&navoid=533>, accessed on May 1, 2014), Drexel University, *op. cit.*, and the University of Pittsburgh, *op. cit.*

8 Mathematics is a product of the human intellect therefore it is part of humanities even though in many universities worldwide it is traditionally classified as a natural science. Courses on mathematics and statistics are offered by many programs, see, for example, the core require-

Category 3 encompasses social sciences,⁹ (e.g., anthropology, economics, and history¹⁰). Category 4 encompasses natural sciences,¹¹ (e.g., chemistry, physics, and physical geography). Category 5 encompasses life sciences,¹² (e.g., biology and psychology). Category 6 encompasses technology studies, mainly computer science.¹³

The *information science education* part consists of 10 main sections following Zins' (2007c) knowledge map of information science; including foundations, resources, knowledge workers, contents, applications, operations & processes, technologies, environments, organizations, and users. The foundation section encompasses the meta-knowledge of information science. The other sections are grounded in the definition of information science as the study of the mediating conditions of human knowledge. Connecting resources and users involves nine elements: the mediated resource, the knowledge worker who conducts the mediation activity, the mediated content, the application (or purpose), the knowledge/information based operation and process, the utilized technology, the social environment, the organizational setting, and the prospective user.

Each of the sections is further divided into three categories designed to meet the GIS, SP, and PR content groups. The GIS categories (categories 7, 10, 13, 16, 19, 22, 25, 28, 31, 34) include core contents common to all undergraduate programs. The SP categories (categories 8, 11, 14, 17, 20, 23, 26, 29, 32, 35) include contents designed for specific areas of expertise (e.g., librarianship (LS), archival studies (AS), museology (MS), knowledge management (i.e., managing knowledge in organizations) (KM),¹⁴ and information technologies/systems

ments of the BA program at Cornell University (<http://infosci.cornell.edu/academics/degrees/ba-college-arts-sciences/degree-requirements/core-requirements>, accessed on May 1, 2014).

9 See Drexel University, *op. cit.*, University of North Texas, *op. cit.*, University of Pittsburgh, *op. cit.*, and the University of Southern Mississippi, *op. cit.*

10 History focuses on the past of human societies and social life; therefore it is part of social sciences rather than humanities, as it is traditionally classified.

11 See Drexel University, *op. cit.*, University of North Texas, *op. cit.*, and University of Pittsburgh, *op. cit.*

12 See courses BIOL10004 (Biology of Cells and Organisms) and BIOL10005 (Genetics & the Evolution of Life), and GENE 30005 (Human and Medical Genetics), Melbourne School of Information, University of Melbourne (<http://www.msi.unimelb.edu.au/study/undergraduate/informatics>, accessed on May 1, 2014). Note that the program is offered as part of the Bachelor of Science degree. For other examples see the programs of the University of North Texas, *op. cit.*

13 See the undergraduate programs, the School of Information, Florida State University (FSU) (<http://ischool.cci.fsu.edu/academics/undergrad>, accessed on May 1, 2014).

14 The term "knowledge management (KM)" is used here as an umbrella name for various programs that focus on management of organizational knowledge (knowledge in organizations). See, for example, the Bachelor of Information Studies (information and knowledge management) Specialization, the School of Information Studies, Charles Sturt University (http://www.csu.edu.au/courses/undergraduate/information_studies/course-structure#U2dRpvmSxg, accessed on May 20, 2014), and the Bachelor of Science in Information Management and Technology, the School of Information Studies, Syracuse University (http://coursecatalog.syr.edu/pdfs/2013/ischool_undergraduate.pdf, accessed on June 2, 2014).

(IT)). The PR categories (categories 9, 12, 15, 18, 21, 24, 27, 30, 33, 36) include contents designed for developing skills and professional proficiency, and providing work experience. Note that theoretical knowledge and practical knowledge are often intermingled and covered in the same courses.

Departments and schools of information science differ by their underlying conceptions of the field. The conceptual divide is between the two competing approaches, the social approach and the technological approach. The social approach is centered in the social conditions and meeting the information needs of prospective users,¹⁵ while the technological approach is centered in developing and using knowledge and communication technologies.¹⁶ The conceptual divide explains the divergence among schools on what should be taught in all programs (GIS contents) and what should be taught only in specialization programs (SP contents). Note that in this chapter we ground the exemplary GIS contents in the social approach. The conceptual divide is often implemented in the academic degrees awarded by academic institution. The Bachelor of Arts (BA) is usually grounded in the social approach, as well as the Bachelor of Social Science (BSocSc),¹⁷ while the Bachelor of Science (BS) is usually grounded in the technological approach. Many universities resolve the conceptual obstacle by awarding more than one degree.¹⁸

Information science is related to other fields that are necessary for understanding the diversified aspects of the multifaceted information phenomena; among them anthropology, art, communication, computer science, economics, education, engineering, law, linguistics, philosophy (especially, epistemology and ethics), psychology (especially, cognition and social psychology), semiotics, sociology, and statistics. These fields differ in their importance for understanding the various aspects of information science. A few of them are essential for understanding the theoretical basis of information science and they are part of the

15 This is the mainstream of the field and it is shared by many universities worldwide, see, for example, the Berlin School of Library and Information Science, Humboldt University of Berlin (<http://www.ibi.hu-berlin.de/teaching/bachelor>, accessed on May 26, 2014), and the Department of Information Studies, the University of California, Los Angeles (<http://is.gseis.ucla.edu/academics/undergrad/index.htm>, accessed on May 4, 2014).

16 See the Graduate School of Information Science and Technology at the University of Tokyo, which offers an undergraduate program (in Japanese) that embodies the technological approach. The IS school is part of the School of Science. It has six departments: Computer Science, Mathematical Informatics, Information Physics & Computing, Information & Communication Engineering, Mechano Informatics, and Creative Informatics (http://www.i.u-tokyo.ac.jp/index_e.shtml, accessed on May 4, 2014).

17 The Bachelor of Social Science (BSocSc) is awarded by the School of Information & Library Studies, University College Dublin (<http://www.ucd.ie/sils/undergraduateprogrammes>, accessed on June 8, 2014).

18 Cornell University, e.g., offers three degrees: a BA in Information Science through the College of Arts and Sciences, a BS in Information Science offers through the College of Agriculture and Life Sciences, and a BS in Information Science through the College of Engineering in Information Science, Systems, and Technology. (<http://infosci.cornell.edu/academics/degrees>, accessed on June 8, 2014).

foundation section. Most of them are only relevant for understanding specific aspects of the field and they are part of the relevant sections according to their thematic contexts.

The *foundation* section (categories 7-9) focuses on the philosophical, historical and methodological basis of information science. Category 7¹⁹ encompasses, (e.g. philosophy of information, history of information science, and research methodology²⁰). The category also represents core related disciplines that are essential for establishing the foundations of information science; among them epistemology, ethics, mathematics²¹, statistics, and computer science. Category 8 encompasses the theory and history of the specializations, for example, LS theory, AS theory,²² and MS theory. Category 9 encompasses practical knowledge related to the foundations of information science; especially mastery of research practices.

The *resources* section (categories 10-12) focuses on issues related to knowledge resources. Resource-related issues are mainly centered on quality issues, relevancy issues, as well as theoretical and practical knowledge related to developing, maintaining, and managing information resources.²³ Category 10 encompasses information quality and management of information services and the like. Category 11 encompasses, for example, (types of) archival resources (governmental, public and private) (AS), and types of library resources (LS). Category 12 encompasses, for example workshop on international standards (modules for each standard, e.g. Dublin Core) and familiarity with information resources.

The *knowledge worker* section (categories 13-15) focuses on information science education. These issues are highly relevant for shaping the nature of the information professions. They are also subject to research, but we have not found any reflective courses that focus on information science education per se. However, universities do offer courses that are aimed

19 See courses INFO 200 (Intellectual Foundations of Informatics), the Information School, University of Washington (<http://www.washington.edu/students/crscat/info.html>, accessed on June 1, 2014).

20 See course CINF 023 (Research Methodology), Faculty of Engineering, University of Porto (http://sigarra.up.pt/flup/pt/cur_geral.cur_planos_estudos_view?pv_plano_id=1575&pv_ano_lectivo=2013&pv_tipo_cur_sigla=L&pv_origem=CUR, accessed on May 5, 2014), and course 04:547:300 (application of research in information technology), School of Communication and Information, Rutgers University (http://comminfo.rutgers.edu/component/cur,547?option=com_courses/sch,04/task/listing, accessed on May 12, 2014).

21 See course INFO I201 (Mathematical Foundations of Informatics), the School of Informatics and Computing, Indiana University (<http://www.soic.indiana.edu/undergraduate/degrees/bs-informatics/curriculum.shtml>, accessed on May 5, 2014).

22 See course INF 335 (Records, Archives and Society), Charles Sturt University, *op. cit.*

23 See course CINF 010 (Information Sources and Reference Services), University of Porto, *op. cit.*, course INF 209 (Describing and Analyzing Information Resources), Charles Sturt University, *op. cit.*, course Special Resource Cataloguing, Sungkyunkwan University, Department of Library and Information Science (<http://ischool.skku.edu> > academics > undergraduate, accessed on May 20, 2014), and course 04:189:152 (The Structure of Information), Rutgers University (http://comminfo.rutgers.edu/component/cur,189?option=com_courses/sch,04/tagname,digital+minor/task/listing, accessed on June 16, 2014).

at developing personality traits and fostering professional and ethical conduct.²⁴ These professional development and ethical education courses are represented in category 15.

The *contents* section (categories 16-18) addresses content based issues. Content based issues are interrelated to resource based issues (categories 10-12) and they often intermingle. Still, they differ and should be regarded as complementary in nature—two sides of the same coin. Content issues related to various types of structures (e.g., knowledge maps, subject classification schemes, taxonomies, ontologies, and thesauri), library classification systems (e.g., LCC, DDC, UDC, CC, and BC), types of contents (e.g., academic and scientific, business, educational, legal, medical, and social information), and subjects (i.e., archeology, biology, computer science). Category 16 encompasses core fields that are centered in contents. Two of the main fields are knowledge organization²⁵ and knowledge representation.²⁶ These two broad fields are essential for understanding the various phenomena of mediating knowledge. For this very reason they are common to all programs. Category 17 covers specialized-based fields that are centered in specific contents and subjects, such as educational informatics, business informatics, legal informatics, and medical informatics.²⁷ Category 18²⁸ encompasses practical knowledge related to collection development and quality evaluation.

The *applications* section (categories 19-21) addresses issues related to the functions and purpose that information resources are designed to meet. It encompasses information searching (or retrieval), shopping, social networking, and promoting human well-being, education, health, and security. The term “application” refers to the functions and purposes of using information resources and acquiring knowledge; not to be confused with the common use of “application” that refers to software designed to perform specific tasks. Category 19²⁹ encompasses core fields such as information searching and social

24 See course IST 466 (Professional Issues), Syracuse University, *op. cit.*, and course INFO 386 (Professionalism in Informatics), University of Washington, *op. cit.*, that “examines professionalism, communication, teamwork, leadership, and interpersonal networking to strengthen students as they seek to excel professionally, covers developing and presenting business cases and project plans, personal branding, conducting informational interviews, and effective written and oral communication.” Another example is course 04:189:151 (Organizational Communication Dynamics Online) at Rutgers University, *op. cit.* The course focuses on strengthening students’ communication competencies.

25 See courses Information Classification 1 and 2, Sungkyunkwan University, *op. cit.*, and course 406 (Advanced Cataloging and Classification), University of Southern Mississippi, *op. cit.*

26 See course INFO 430 (Knowledge Organization and Representation), University of Washington, *op. cit.*

27 See course ICT 539 (Medical Informatics), University of Kentucky, *op. cit.*

28 See course Collection Development, Sungkyunkwan University, *op. cit.*

29 See course INLS 509: (Information Retrieval), University of North Carolina at Chapel Hill, School of Information and Library Science, (<http://sils.unc.edu/courses>, accessed on May 20, 2014).

networking.³⁰ Category 20 includes applications such as electronic publishing³¹ electronic commerce,³² and gaming³³ that are taught in IT programs. Category 21³⁴ covers practical knowledge related to these fields.

The *operations and processes* section (categories 22-24) encompasses issues related to the various activities involved in mediating human knowledge; among them documentation, representation, visualization, organization, processing, storage, digitization, dissemination, publication, searching, manipulation, evaluation, and measurement. Since human activities may relate to several intermingled aspects of the information phenomena some of these processes may be represented by other sections of the model_{1,2} as well. Category 22 encompasses core operations and processes that are common to all programs, such as information searching,³⁵ knowledge representation and knowledge organization. Category 23 represents specialized based activities. Digital preservation,³⁶ for example, is included in LS, AS, and MS programs that teach the preservation of documents, books, artifacts, and digital materials in the specialized contexts. Category 24³⁷ encompasses mastery of practices in information based activities.

The *technology* section (categories 25-27) focuses on information technologies. These are technologies that are aimed at facilitating the mediation of knowledge, through documentation, representation, organization, processing, dissemination, publication, storage, manipulation, evaluation, measurement, searching, and retrieving knowledge, among them paper-based and printing-based technologies, digital technologies, as well as communi-

30 See courses 124 (Network Thinking), School of Information, University of Michigan (<https://www.si.umich.edu/programs/CourseCatalog>, accessed on June 2, 2014) and course IST 488 (Social Web Technologies) at Syracuse University, *op. cit.* that represent two approaches to social networking. The course at UM reflects a social approach ("You'll learn how groups behave and function from technical and non-technical perspectives."). The course at SU reflects a technological approach ("This course will educate students in the concepts and mechanisms of social networking in technologies through hands-on system design, development, implementation and management of these systems.").

31 See course 685 (Electronic Publishing and Web Design), School of Information Studies, University of Wisconsin-Milwaukee (http://www4.uwm.edu/academics/undergraduatecatalog/SC/C_540.html, accessed on June 10, 2014).

32 See course 04:547:410 (Electronic Commerce), Rutgers University, *op. cit.*

33 See course 04:547:215 (Social Impacts of Video Gaming), Rutgers University, *op. cit.*

34 See course INF 337 (Information Retrieval Systems and Practice), Charles Sturt University, *op. cit.*

35 See course IST 441 (Information Retrieval and Organization), College of Information Sciences and Technology, Pennsylvania State University (<http://bulletins.psu.edu/undergrad/courses/I/IST>, accessed on June 15, 2014).

36 See course INF 319 (Preservation of Information Resources), Charles Sturt University, *op. cit.* The course is part of LS and AS specialization studies.

37 See, for example, course IS 310 (Information Seeking: Resources & Strategies), University of Tennessee, Knoxville, *op. cit.*

cation-based technologies and media, network technologies, and the like. Category 25³⁸ encompasses the broad field of information technology, which is a fundamental building block of information science and common to all the programs. The scope of the coverage varies by the field of expertise. Category 26³⁹ covers technology based subjects relevant for specialized programs. Software engineering, information security, (development and management of) information systems, digital libraries, information and knowledge architecture, digital curation, and game studies are a few exemplary subfields of expertise for students specializing in IT. Category 27⁴⁰ encompasses technology based practical knowledge. Internet literacy and programming are two requirements for all students in all programs. The programs differ by the level of expertise and professionalism.

The *environment* section (categories 28-30) encompasses studies of social, economic, ethnic and cultural, legal, ethical, and professional aspects of the information environment. Category 28⁴¹ covers environment-based core fields; among them information culture, information economics, information ethics, and information policy. Category 29 covers subfields relevant to specialization areas, for example, community history (AS and LS),⁴² and business management (KM).⁴³ Category 30 covers social competencies; these are skills associated with internet diversified cultural milieus and the ability to professionally function in the digital environments.⁴⁴

38 All the curricula that were reviewed include courses on information technology.

39 See the undergraduate major in Informatics offered by the University of California, Irvine: The Donald Bren School of Information and Computer Sciences, which is specialized in information technology (<http://catalogue.uci.edu/donaldbrenschoolofinformationandcomputersciences/departamentofinformatics>, accessed on May 11, 2014).

40 See course I&C SCI 31 (Programming), University of California, Irvine, *op. cit.*, and courses Programming 1 & 2, Department of Information Studies, University College London (<http://www.ucl.ac.uk/dis/taught/ug>, accessed on May 11, 2014).

41 See course 04:547:200 (Social Informatics), Rutgers University, *op. cit.* This is an integrative course that focuses on “the critical analysis of social, cultural, philosophical, ethical, legal, public policy and economic issues relating to information technologies, and how these interactions shape workplace decisions and technology use.” Other examples are course INF 315E (Information and Culture), the University of Texas at Austin School of Information (<https://www.ischool.utexas.edu/programs/minor>, accessed on May 11, 2014), course IS 10040 (Information Society: From Papyrus to Cyberspace), the School of Information & Library Studies, University College Dublin, and courses IST 431 (Information Environment) and IST 341 (Human Diversity in the Global Information Technology), Pennsylvania State University, *op. cit.*, which deals with globalization, human diversity and their impacts on IT products, work, workforce, and the knowledge economy and social inclusion in general.

42 See course INF 318 (Community Histories), Charles Sturt University, *op. cit.*

43 See course IS 101 (Seminar on Information Systems Management), Singapore Management University, School of Information Systems (<http://sis.smu.edu.sg/programmes/bsc-management/bsc-ism-curriculum/curriculum-detail-intake-ay2011-onwards>, accessed on May 26, 2014).

44 See course IS 10050 (Digital Judgment: Truth, Lies, and the Internet), University College Dublin, *op. cit.*

The *organization* section (categories 31-33) focusses on the organizational aspect of the information work. It encompasses studies of organizational settings, information organizations, and management of organizational knowledge. The organizational settings set the social conditions that affect social interactions and interpersonal relations among users and information professionals. They shape information policies, users' behavior, and professional practices regarding information technology, information accessibility, freedom of information, copyright, privacy, security, and computer crimes. The information organizations set the organizational conditions in which most of the information work takes place. The term refers to organizations that function either as memory organizations (libraries, archives, and museums) or as providers of information services (libraries, reference services, patent search services, and information centers) in the government, the public, and the private sectors. The management of organizational knowledge is implemented by information professionals who work in organizations and engage in managerial activities. It is aimed at promoting the organizational agenda by effectively capturing, developing, sharing, and using organizational knowledge and organizational knowledge resources.

These three areas highlight three interrelated basics of the organizational building block; people, social entities, and knowledge. Our primary interest in organizational settings is centered on people, users and information professionals, and their conduct. Our primary interest in information organizations is centered on their role as social entities and their effective operation. And our primary interest in knowledge management is centered on the effective use of the organizational knowledge. Studies of organizational settings and information organizations are usually part of LIS core education while knowledge management studies are part of specialization. In some universities KM programs are offered jointly with departments of management studies.⁴⁵

Category 31 represents fields that are relevant for the study of organizational settings⁴⁶ and information organizations;⁴⁷ among them information economics, information policy,⁴⁸ and the like. Category 32⁴⁹ includes, for example, fields relevant mainly for KM specialization;

45 See the BA in Business Management and Informatics program, University of Sheffield, Information School (<http://www.sheffield.ac.uk/is/ug/bminformatics>, accessed on May 14, 2014). The program is taught jointly by the Information School and the Management School. Another example is the BSc Information Management for Business program at University College London, *op. cit.* The program is taught jointly by the Department of Management Science and Innovation, the Department of Information, and the Department of Computer Science.

46 See course IS20030 (Information & Collaboration in Organizations), University College Dublin, *op. cit.*

47 See course INF 317 (Government, Organizational and Private Records), Charles Sturt University, *op. cit.* The course studies government, commercial (business), organizational (non-commercial) and private record-keeping agencies (archives).

48 See course 04:547:400 (Information Policies, Politics, and Power), Rutgers University, *op. cit.*, which prepares students for policy development in organizations.

49 . See course INF 336 (Principles of Knowledge Management), Charles Sturt University, *op. cit.*, course 04:547:210 (Management of Technological Organizations), Rutgers University, *op. cit.*, and IST 422 (Enterprise Architecture), Pennsylvania State University, *op. cit.*

among them management studies, business management, and sociology of organizations.⁵⁰ Category 33⁵¹ represents practical knowledge associated with the organizational conditions. The ability to map the organizational players and the hidden relations among them is an example of the invaluable organizational competencies or skills necessary for all graduates.

The *user* section (categories 34-36) encompasses the various perspectives related to the end users and their information needs and interests. Users can be classified into three major categories: individuals, groups, and communities, each of which entails different foci. Users can be characterized by their need and interest, gender, age, cultural and ethnic identity, profession, information literacy, and information behavior. Category 34 represents the core field of user studies.⁵² Category 35 is exemplified by the field of social psychology, which is taught in KM programs. Category 36 represents practical knowledge related to users. The ability to understand user behavior and identify users' informational needs are exemplary competencies or skills important to all graduates.

50 See courses CINF 032 (Sociology of Organizations), University of Porto, *op. cit.*

51 See course INLS 393 (Information Science Internship), School of Information and Library Science, University of North Carolina at Chapel Hill, *op. cit.*, which offers BS students a supervised internship in an information organization. Other examples are course 644 (School Library Practicum), University of Wisconsin-Milwaukee, *op. cit.*, which is a field experience of 210 hours in elementary and secondary school library media services under faculty and field supervisor guidance, and course IST 440W (Information Sciences and Technology Integration and Problem Solving), Pennsylvania State University, *op. cit.*

52 See course Information User Study, Sungkyunkwan University, *op. cit.*, course IS20050 (Theories of Information Behavior) at the University College Dublin, *op. cit.*, and course 04:189:352 (Self and Society in Virtual Contexts), Rutgers University, *op. cit.*

Table 2 Contents

General education (GE)		1	B ¹ A ²	Exemplary contents: language skills, communication skills, learning skills, computer literacy, and Internet literacy.
Content	Literacy studies	2	B A	Exemplary contents: art, literature, and mathematics ³ .
	Humanities	3	B A	Exemplary contents: anthropology ³ , economics ³ , and history ³ .
	Social sciences	4	B A	Exemplary contents: chemistry ³ , physics ³ , and geography ³ .
	Natural sciences	5	B A	Exemplary contents: biology ³ , and psychology ³ .
	Life sciences	6	B A	Exemplary contents: computer science.
	Technology studies	7	B A	Exemplary contents: philosophy of information, history of information science, research methodologies, and epistemology ³ , ethics ³ , and mathematics ³ .
	Foundations	GIS	B A	Exemplary contents: archival studies theory (AS), library studies theory (AS), and museum studies theory (LS).
		SP	B A	Exemplary contents: research methodology, and research evaluation.
		PR	B A	Exemplary contents: information quality, and information services.
	Resources	GIS	B A	Exemplary contents: archival resources (AS), and library resources (LS).
		SP	B A	Exemplary contents: information services.
		PR	B A	
	Knowledge workers	GIS		
		SP		
		PR	B A	Exemplary contents: professional development, and ethical education.
	Contents	GIS	B A	Exemplary contents: knowledge organization, and knowledge representation.
		SP	B A	Exemplary contents: educational informatics, business informatics, legal informatics, and medical informatics.
		PR	B A	Exemplary contents: collection development, and quality evaluation.

Applications	GIS	19	B A	Exemplary contents: information retrieval, and social networking.
	SP	20	B A	Exemplary contents: electronic publishing (IT), electronic commerce (IT), and gaming (game studies) (IT).
	PR	21	B A	Exemplary contents: information retrieval, and social networking.
Operations & Processes	GIS	22	B A	Exemplary contents: information retrieval, knowledge representation, and knowledge organization.
	SP	23	B A	Exemplary contents: digital preservation (LS), (AS), (MS).
	PR	24	B A	Exemplary contents: digital preservation, information retrieval, knowledge representation, and knowledge organization.
Technologies	GIS	25	B A	Exemplary contents: information technology.
	SP	26	B A	Exemplary contents: software engineering (IT), information security (IT), information systems (IT), digital libraries (IT), information architecture (IT), digital curation (IT), and game studies (IT).
	PR	27	B A	Exemplary contents: Internet literacy, and programming.
Environ- ments	GIS	28	B A	Exemplary contents: information culture, information economics, information ethics, and information policy.
	SP	29	B A	Exemplary contents: community history (AS & LS), and business management (KM).
	PR	30	B A	Exemplary contents: social competencies.
Organiza- tions	GIS	31	B A	Exemplary contents: information economics, and information policy.
	SP	32	B A	Exemplary contents: management studies, business management, and sociology of organizations.
	PR	33	B A	Exemplary contents: organizational competencies.
Users	GIS	34	B A	Exemplary contents: user studies.
	SP	35	B A	Exemplary contents: social psychology (KM).
	PR	36	B A	Exemplary contents: users' competencies.

Note. Basic¹ (30 academic hours)/ Advanced² (60 academic hours) / Non information science subfields³.

Structure

The structure is composed of three elements: the duration of the program, the format of the program, and the order of the courses. In most countries bachelor studies are planned for three years⁵³ or four years.⁵⁴ The format is based on the combination of general studies and specialization modules. There are four optional formats for three years studies and five optional formats for four studies years; a total of nine optional formats. They are depicted in Table 3. The order of the courses was not studied in this study.

Table 3 Nine formats of LIS programs

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Format 1	General studies			
Format 2	General studies	Specialization		
Format 3	General studies		Specialization	
Format 4	General studies			Specialization
Format 5	Specialization			
Format 6	General studies			
Format 7	General studies		Specialization	
Format 8	General studies	Specialization		
Format 9	Specialization			

The Model_{1,2}

The integration of the content categories and the structure of the program forms a structured model_{1,2} for selecting the planned contents. It comprises 36 pairs of core categories and respectively spans over three to four years; a total of 288 content categories (36 x 2 x 4) (see Table 4). The planned contents (i.e., fields and courses) are not part of the model_{1,2}. They are represented in the model_{1,2} by placing them in the relevant categories. The model_{1,2} is valid as long as any relevant content can be placed in at least one of the 288 content categories.

(Universal Model see Table 4 the after next page)

53 See Nova University (<http://www.isegi.unl.pt/Cursos/Licenciaturas/Gestao-Informacao/detalhe-de-curso/plano-de-estudos.asp>, accessed on May 18, 2014) and Bar-Ilan University (<http://is.biu.ac.il/en/node/1148>, accessed on May 18, 2014).

54 See São Paulo State University (<http://www.marilia.unesp.br/#!/graduacao/cursos/biblioteconomia/grade-curricular/quadro-de-disciplinas-2013>, accessed on May 18, 2014).

Discussion and Conclusion

Models

This chapter presents two complementary models for developing academic programs. The first model_{1,1} is the systematic developing process, which is composed of four successive phases: defining the academic goals, specifying the derived contents, organizing the contents in the structured plan, and evaluating the program. The second model_{1,2} is a structured plan of 288 content categories. The two complementary models are combined into an integrated model₁ by using the structured plan while selecting and ordering the contents. The models lay the foundations of systematic curricular and pedagogical reasoning involved in the four step development process and in the content selection process. They are intended to be constitutive models grounded on theoretical foundations rather than an empirical mirror of a developing process that occurs in a real academic institution.

Ad-hoc adjustments

These exemplary models need ad-hoc adjustments. They should be critically reviewed and implemented in the real world by the faculty members of each institution. An academic program is grounded in the conception of the field and the specific academic goals that it aims to achieve. It is planned for given academic settings, bound by given social conditions and academic milieus, designed for given students, intended to be taught by given staff, and utilize specific teaching methods.

Categories versus contents

The structured 288 category plan of contents (model_{1,2}) makes it possible to present the complicated thematic relations among the various contents (fields and courses) by differentiating among the categories and the contents. The contents are not part of the model_{1,2} but are represented in the various categories.

Developing versus evaluating

The model_{1,2} is a powerful tool for developing and evaluating LIS academic programs and courses. Developing and evaluating may be viewed as two complementary activities. Still, they are based on different thinking. Developing is based on synthetic thinking while evaluating is based on analytic thinking. Programs and courses are the products of content syntheses. They are composed of various series of interrelated contents. While using the model_{1,2} for developing a course, the developer assembles the relevant contents from various categories, but while using the model_{1,2} for evaluating a course the evaluator separates the contents and places them in the relevant categories. Evaluating a course on information ethics demonstrates the ability of the model_{1,2} to present thematic complexity. Courses on ethics may address several aspects, and they can be placed in categories, 2, 7, 15, and 28 based on their prime foci. Courses that are taught within the framework of general education are represented in category 2 (humanities). Courses that focus on the philosophical perspectives of information ethics are placed in category 7 (foundations

Table 4 Universal Model

		Year: >>>				1 st year	2 nd year	3 rd year	4 th year
General education (ED)	Literacy studies	1	B ¹						
			A ²						
	Humanities	2	B						
			A						
	Social sciences	3	B						
			A						
Information science	Natural sciences	4	B						
			A						
	Life sciences	5	B						
			A						
	Technology studies	6	B						
			A						
Contents	Foundations	7	B						
			A						
		8	B						
	Resources		A						
		9	B						
			A						
	Knowledge workers	10	B						
			A						
		11	B						
	Contents		A						
		12	B						
			A						
	Foundations	13	B						
			A						
		14	B						
	Resources		A						
		15	B						
			A						
	Knowledge workers	16	B						
			A						
		17	B						
	Contents		A						
		18	B						
			A						

Applications	GIS	19	B						
	SP	20	B						
	PR	21	B						
Operations & Processes	GIS	22	B						
	SP	23	B						
	PR	24	B						
Technologies	GIS	25	B						
	SP	26	B						
	PR	27	B						
Environments	GIS	28	B						
	SP	29	B						
	PR	30	B						
Organizations	GIS	31	B						
	SP	32	B						
	PR	33	B						
Users	GIS	34	B						
	SP	35	B						
	PR	36	B						

Note. BasicI (30 academic hours) and Advanced2 (60 academic hours or more).

of information science).⁵⁵ Courses that focus on the social aspects of etiquettes, norms, ethical codes and conduct in information based societies are represented in category 28 (social aspects of information),⁵⁶ while courses that are designed to foster ethical values and personal conduct of the students are presented in category 15 (knowledge worker). Many information science subfields and courses encompass different perspectives and they can be represented in several categories.

Directions of LIS education

We initiated the study realizing that the divergence among programs offered by schools of information science at the bachelor's level is striking. In the course of the study we reviewed more than 100 programs in 70 universities from 12 countries. Evidently, the field of LIS is changing, followed by changing of LIS education. We are in the midst of an era that will probably result in new fields of expertise. We cannot predict the future. We can just envision future directions. While reviewing the academic programs we have identified seven main interrelated nonexclusive directions. In fact, most of the programs that were reviewed embody more than one direction.

The first is the traditional direction,⁵⁷ which is centered on librarianship and archival studies. The second direction is informatics,⁵⁸ which is centered on searching and using information in all fields of knowledge. Note that the term "informatics" has different meanings. Here it stands for the praxis of the information work. The third direction is social informatics.⁵⁹ It is centered on the social aspects of the information industries. The fourth direction is information systems.⁶⁰ It is centered on developing and using technological based information systems. The fifth direction is the new media.⁶¹ It expands the scope of information science and encompasses web, cellular and new media applications, such

55 See course 661 (Ethics and the Information Society), the Undergraduate Catalog 2013-2014, School of Information Studies, University of Wisconsin-Milwaukee, *op. cit.*, which deals with "ethical traditions, concepts, and principles for the information professions in the global information society."

56 See course INFO 450 (Information Ethics and Policy), University of Washington, *op. cit.*

57 See the Librarianship and the Records and Archives Management specialization programs at Charles Sturt University, *op. cit.*

58 See the Bachelor of Science in Informatics, University of Melbourne, *op. cit.*

59 See the undergraduate programs of social computing at the University College Dublin, *op. cit.*

60 See the three undergraduate programs offered by Cornell University, especially the BS program at the College of Engineering in Information Science, Systems, and Technology, Cornell University, *op. cit.* The program "studies the design and management of complex information systems, with an emphasis on information systems engineering in broad application contexts."

61 See the Interactive Digital Media undergraduate degree program at the University of Toronto, *op. cit.* Another example is the Game Production and Innovation specialization program, Rutgers University (<http://comminfo.rutgers.edu/information-technology-and-informatics-major/iti-specializations.html>, accessed on June 8, 2014).

as video, games, entertainment, and the like. The sixth direction is computer science.⁶² It is based on the integration of information science and computer science. The seventh direction is management.⁶³ It is centered on management of organizational knowledge, and encompasses knowledge management, business management, and management studies.

The field of LIS is constantly changing and so is LIS education. Therefore, the models that have been developed in the study should be viewed as part of an ongoing research agenda. The study is focused on the curricular and pedagogical reasoning involved in the content selection of LIS academic programs. The profound insight that comes out of the study is the invaluable impact of how curricular and pedagogical reasoning offers significant improvements to assist with LIS academic education.

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62 See the Graduate School of Information Science and Technology at the University of Tokyo, *op. cit.*

63 See the Information and Knowledge Management specialization program at Charles Sturt University, *op. cit.*

Appendix A

The Panel

Dr. André Porto Ancona Lopez, University of Brasília [Univ de Brasília (UNB)], Brasília – DF, Brazil; **Dr. Beatriz Valadares Cendón**, Federal University of Minas Gerais [Univ Federal de Minas Gerais (UFMG)], Belo Horizonte – MG, Brazil; **Dr. Carlos Henrique Marcondes de Almeida**, Fluminense Federal University [Univ Federal Fluminense (UFF)], Niterói – RJ, Brazil; **Dr. Ely Francina Tannuri de Oliveira**, São Paulo State University [Univ Estadual Paulista (UNESP)], Marília – SP, Brazil; **Dr. Guilherme Ataíde Dias**, Federal University of Paraíba [Univ Federal da Paraíba (UFPB)], João Pessoa – PB, Brazil; **Dr. Icléa Thiesen**, Federal University of Rio de Janeiro State [Univ Federal do Estado do Rio de Janeiro (UNIRIO)], Rio de Janeiro – RJ, Brazil; **Dr. Isa Maria Freire**, Federal University of Paraíba [Univ Federal da Paraíba (UFPB)], João Pessoa – PB, Brazil; **Dr. Leilah Santiago Bufrem**, Federal University of Paraná [Univ Federal do Paraná (UFPR)], Curitiba – PR, Brazil; **Dr. Lena Vânia Ribeiro Pinheiro**, Brazilian Institute of Information in Science and Technology [Instituto Brasileiro de Informação em Ciência e Tecnologia (IBICT)], Rio de Janeiro – RJ, Brazil; **Dr. Luis Fernando Sayão**, Federal University of Rio de Janeiro State [Univ Federal do Estado do Rio de Janeiro (UNIRIO)], Rio de Janeiro – RJ, Brazil *and the National Committee of Nuclear Energy [Comissão Nacional de Energia Nuclear (CNEN)]*; **Dr. Mariângela Spotti Lopes Fujita**, São Paulo State University [Univ Estadual Paulista (UNESP)], Marília – SP, Brazil; **Dr. Marlene Oliveira**, Federal University of Minas Gerais [Univ Federal de Minas Gerais (UFMG)], Belo Horizonte – MG, Brazil; **Dr. Marta Lígia Pomim Valentim**, São Paulo State University [Univ Estadual Paulista (UNESP)], Marília – SP, Brazil; **Dr. Mauricio Barcellos Almeida**, Federal University of Minas Gerais [Univ Federal de Minas Gerais (UFMG)], Belo Horizonte – MG, Brazil; **Dr. Nanci Elizabeth Oddone**, Federal University of Bahia [Univ Federal da Bahia (UFBA)], Salvador – BA (round 1) and the Federal University of Rio de Janeiro State [Univ Federal do Estado do Rio de Janeiro (UNIRIO)], Rio de Janeiro – RJ, Brazil (rounds 2 & 3); **Dr. Patrícia Zeni Marchiori**, Federal University of Paraná [Univ Federal do Paraná (UFPR)], Curitiba – PR, Brazil; **Dr. Renato Rocha Souza**, Applied Mathematics School of Getulio Vargas Foundation [Escola de Matemática Aplicada da Fundação Getúlio Vargas (EMAp/FGV)], Rio de Janeiro – RJ and the Federal University of Minas Gerais [Univ Federal de Minas Gerais (UFMG)], Belo Horizonte – MG, Brazil; **Dr. Rosali Fernandez de Souza**, Brazilian Institute of Information in Science and Technology [Instituto Brasileiro de Informação em Ciência e Tecnologia (IBICT)] Rio de Janeiro – RJ, Brazil; **Dr. Silvana Aparecida Borsetti Gregorio Vidotti**, São Paulo State University [Univ Estadual Paulista (UNESP)], Marília – SP, Brazil; **Dr. Silvana Drumond Monteiro**, State University of Londrina [Univ Estadual de Londrina (UEL)], Londrina – PR, Brazil; **Dr. Sueli Angélica do Amaral**, University of Brasília [Univ de Brasília (UNB)], Brasília – DF, Brazil.

Appendix B

Excerpts from the Three Questionnaires on the Universal Model

Information Science Education in Brazil

First round

1. Conception of information science. Information science is the study of the mediating aspects of human knowledge as they are implemented in the social domain. In other words information science focuses on connecting resources and users. It deals with technological as well as social and cultural perspectives. This conception is the mainstream in Brazil.

(The panel was asked to comment)

Information Science Education in Brazil

Second round

1. Conception of information science. Information science. Evidently, all the responses represent the conception of IS, as stated in R1. Information science is the study of the mediating aspects of human knowledge as they are implemented in the social domain.

(The panel was asked to comment)

Information Science Education in Brazil

Third Round

Part 1: Universal model.

Model. The term model has two meanings. It is the process of developing an academic program (i.e. this critical and reflective Delphi study), and it is the structured plan of the program. This study demonstrates the process of developing an academic program, and it presents its plan. Let's focus on the structured plan.

Goals, contents, structure. An academic program has three elements: goals, contents, and structure. The goals shape the contents. The contents should fit into the structure. This sets a model for developing, improving, and evaluating the quality of IS BA programs.

1.1 Goals. Achievement vs. activity. Academic goals are formulated as achievements (what the program is expected to achieve), and as activities (what the program is expected to do). We focus on the achievements.

Programs vs. students. Achievements of programs set the basic standards for programs (i.e. what courses they should teach). Achievements of students set the basic requirements from each and every graduated student (i.e. what courses s/he should study).

Achievements of academic programs are divided into:

1. General education (not IS),
2. General IS education,
3. Knowledge of the field of expertise, and
4. Practical knowledge.

Achievements of graduated students are divided into:

1. General education (not IS),
2. General IS education,
3. Knowledge of the field of expertise, and
4. Practical knowledge.

(The panel was asked to comment)

1.2 Contents. Four types. The contents are the core of an academic program. They are divided into four types: General education (GE), general IS education (GIS), specialization (SP), and practical knowledge (PR). The four types are divided into two groups: General education (GE), and information science (GIS, SP, and PR).

General education is divided into four groups of fields/courses: Literacy studies (basic knowledge and skills), humanities & social sciences, natural & life sciences, and technology studies.

Information science is divided into 10 groups of subfields/courses: Foundations, resources, knowledge workers, contents, applications, operations & processes, technologies, environments, and users. The division is based on the knowledge map of information science (see Zins, 2007c).

Basic vs. advanced. Each course has two levels: basic (B), and advanced (A), which indicate the importance of the field in your eyes.

68 content categories. There are 68 content categories.

(The panel was asked to comment)

1.3 Structure. Length, type, process. The structure is composed of three elements: length, type, and process. The length is implemented in the number of years, three or four. The type is implemented in the nature of the program, namely the combination of general studies and specialization. There are nine options:

(The panel was asked to comment on Table 3 (above))

1.4 Model. Based on the combination of the contents and the structure we designed the “structured model.”

(The panel was asked to comment on a table similar to Table 4 (above) with 68 categories. Note that the final model is composed of 72 categories. In addition, the panel was asked to propose alternative models.)

Appendix C

Listed Universities

Bar-Ilan University, Department of Information Science, Israel; **Charles Sturt University**, School of Information Studies, Australia; **Cornell University**, College of Arts and Sciences, Information Science, USA; **Drexel University**, College of Computing and Informatics, USA; **Florida State University**, School of Library and Information Studies, USA; **Humboldt University of Berlin**, Berlin School of Library and Information Science, Germany; **Indiana University**, School of Informatics and Computing, USA; **NOVA University of Lisbon**, School of Statistics and Information Management, Portugal; **Pennsylvania State University**, College of Information Sciences and Technology, USA; **Rutgers, the State University of New Jersey**, School of Communication and Information, USA; **São Paulo State University**, Department of Information Science, Brazil; **Singapore Management University**, School of Information Systems, Singapore; **Sungkyunkwan University**, Library and Information Science Department, South Korea; **Syracuse University**, School of Information Studies, USA; **University College Dublin**, School of Information and Library Studies, Ireland; **University College London**, Department of Information Studies, UK; **University of Arizona**, School of Information: Science, Technology, and Arts, USA; **University of California, Irvine**, The Donald Bren School of Information and Computer Sciences, USA; **University of California, Los Angeles**, Graduate School of Education and Information Studies, USA; **University of Kentucky**, College of Communications and Information Studies, USA; **University of Melbourne**, Melbourne School of Information, Australia; **University of Michigan**, School of Information, USA; **University of North Carolina**, School of Information and Library Science, USA; **University of North Texas**, College of Information, USA; **University of Pittsburgh**, School of Information Sciences, USA; **University of Porto**, Faculty of Engineering, Portugal; **University of Sheffield**, Information School, UK; **University of South Carolina**, School of Library and Information Science, USA; **University of Southern Mississippi**, School of Library and Information Science, USA; **University of Tennessee, Knoxville**, School of Information Sciences, USA; **University of Texas, Austin**, School of Information, USA; **University of Tokyo**, Graduate School of Information Science and Technology, Japan; **University of Toronto**, Faculty of Information, Canada; **University of Washington**, Information School, USA; **University of Wisconsin, Milwaukee**, School of Information Studies, USA.

The Train Has Left the Station: Chronicles of the African Network for Information Ethics and the African Centre of Excellence for Information Ethics

Rachel Fischer, Johannes Britz and Coetzee Bester

Abstract

Rafael Capurro is one of the brightest shining beacons working in the information ethics field in Africa. His substantial contribution and his support for its growth in Africa is widely recognised. This chapter seeks to give an overview of his contribution and how he influenced the establishment of the African Network for Information Ethics (ANIE) and the African Centre of Excellence for Information Ethics (ACEIE). These two institutions, and what they endeavour to achieve, are closely aligned with Capurro's research program on information ethics. It is argued here that due to the growth of information and communication technologies there arises a core set of concerns that must be addressed by scholars, private institutions and civil society and that there are distinct differences in how these manifest in the African context. Through the work of the ACEIE, and with Capurro's guidance, the network has expanded in Africa to include concerned parties working together towards addressing these ICT-related issues in ways which are sympathetic to local needs. This chapter will elaborate on the various activities that have been held across Africa, since 2007, associated with the work of the African Network for Information Ethics and outlines publications produced by African authors which aim to develop a relevant local corpus on information ethics.

The Train has left the Station

My (J. B.) first ever introduction to Rafael Capurro was in the early 1990's when I was still busy with my doctoral studies on information ethics. I remember reading an article from Rafael published in 1978 (in German) on information and hermeneutics. It influenced my thinking profoundly and I started reading more "Capurro-work" and prescribed his articles also to my students. In 2002, I met *Capurro—the name*. Capurro became *Capurro the person* when I was privileged to meet Rafael in person at the Computer Ethics: Philosophical Enquiry (CEPE) conference at Lancaster, England. I was impressed with his humbleness and how he reached out and engaged with me—as someone who was still playing in the

minor league of information ethics. In 2004 I received an invitation from Rafael to participate in an information ethics symposium to be held in Karlsruhe (his hometown) where a number of international scholars were scheduled to attend to discuss global information ethics issues. It turned out that I was only one of two African scholars at the event; the other had worked and lived in France for most of his academic career. I recall how Rafael asked me about African scholars in our field. But we left the conversation there for it to be followed up a year later in Holland this time, at a coffee-shop at the train station in Twente, where we both waited for our trains after attending the 2005 CEPE conference. It was at this little train station coffee-shop that our "Information Ethics in Africa" discussion got serious. We both agreed how important it was to get our colleagues from Africa on board and as we departed on separate trains (Rafael back to Karlsruhe and I to catch a plane to South Africa), we were on the same track regarding the importance of the development of information ethics on the African continent.

After my return to South Africa, I contacted my life-long friend Coetzee Bester for input and advice on how to proceed. It was not difficult to get Coetzee on board. Coetzee was able to secure funding through the Department of Communication (South African Government Department) that enabled us to plan and successfully execute the first-ever Africa Information Ethics symposium. It was held in the summer of 2007. More than 90 scholars participated for 3 days, exchanging ideas on the further development of information ethics in Africa and around the world. The train for the development of information ethics in Africa had left the station! This train had Rafael Capurro, Annette Capurro and the Capurro-Fiek Foundation on board.

Background – Information Ethics and Information Ethics in Africa meets Capurro

When considering our contribution to a Festschrift in honour of Rafael Capurro we realised that our tribute would certainly be more eulogy than academic exercise. When we take into account Capurro's role in the development of African information ethics he appears more like a soothsayer from whom one seeks both guidance and wisdom. While this might somewhat stand in contrast to the professorial terminology associated with the realm of academia we believe it is important to emphasise Rafael Capurro's impact as a combination of these qualities: he is at once philosopher, academic and inspirational friend.

To pay homage to Rafael Capurro is also to pay homage to Aristotle and specifically the role of *logos* (or reason), for Capurro is at heart, an Aristotelian. By applying his sophisticated understanding of Aristotelian thought, Capurro has made an extremely significant contribution to the understanding of information ethics as an academic discipline and has also encouraged many other scholars to undertake deeper philosophical research on this topic. His article, *Towards an Ontological Foundation in Information Ethics*, traces the history of information ethics to the Greek concept of *parrhesia*, or freedom of speech (Capurro, 2006: p. 175) and to modern issues brought to the fore by information and

communication technologies (ICTs). These issues, such as the right to access information, the right to privacy and the freedom of expression are certainly not new concepts but they are further problematized by the advent of ICTs. Capurro calls for new ways in which to question and understand these changes; traditional methods of understanding the creation, sharing and distribution of information will not suffice in the information revolution: “the ‘information revolution’ concerns not just the influence of computing and (digital) information on philosophy but the pervading view according to which today we believe that we understand things in their being as far as we are able to digitalize them” (Capurro, 2006, p. 179). The reliance on ICTs, social media, digital networks might seek to reshape our understanding and experience of reality, but this should not ignore the fact that we still physically interact and work with people every day. Since ICTs are present in most spheres of life (politically, socially, economically and culturally), we need to address a number of questions Capurro (2006, p. 183) identifies as crucially important:

- How far is the internet changing local cultural values and traditional ways of life?
- How far do these changes affect the life and culture of future societies in a global and local sense?
- How far do traditional cultures and their moral values communicate and transform themselves under the impact of the digital infosphere in general and of the internet in particular?

Certain issues, such as the digital divide, have received significant global attention. This digital divide exists between East and West and between developed and developing countries. By only providing the ICT infrastructure to cross this divide, the problems will not be solved. Conversely, by asking questions about the impact of ICTs on traditions, cultures, values etc., we can better address the concern that the digital divide is about the impact of ICTs on our lives and not just the lack of the technologies themselves. This is one of the fundamental questions that civil society asks and that information ethicists can answer.

It is with these questions in mind that Rafael Capurro approaches the African information ethics landscape. Permeating throughout the conventional, unreconstructed discourse is a Western-centric vocabulary and a rootedness in Western philosophy (Capurro, 2006, p. 184). From such a position, a call is made, by Capurro and his ilk, for an intercultural approach to information ethics. By involving academics, policy makers, and professionals from industry from across Africa, new perspectives on these issues have come to the fore that are unique to Africa. But also, these issues have been problematized, and solved, by Africans themselves. The current information ethics vocabulary has been enriched and the intellectual networks strengthened by this indigenous process.

In the conclusion of the article, *Information Ethics for and from Africa*, Capurro (2008) states that

The final goal of ethics is not just to speak about the good but to *do* the good and, we could add, to dream about it. We owe this insight about the relation between ethical thinking and

action to Aristotle, the founder of ethics as a scientific discipline in the Western tradition. (2008, p. 1167)

In retrospect, a lot has happened since this article was written in 2008. Indeed, the dream of realising an African society capable of researching an African perspective on information ethics has come to fruition. Capurro's research presaged a number of initiatives, including those supported by the South African government, the UNESCO World Summit on the Information Society (WSIS), the African Information Society Initiative (AISII) and the African Network for Information Ethics (ANIE), which were well-documented in his article. Capurro has also championed Africa's rich oral and written traditions that in their own way relate and convey the experiences brought to the fore by information and communication practices (2008, p. 1168). Capurro's approach extends a deep appreciation to the cultural memory of Africa, founded as it is, on a rich system of values and morals and, furthermore, shaped by a history deeply impacted by slavery and apartheid. Due to her past and present experiences, Africa is a perfectly suitable platform for an intercultural information ethics debate. With the building of such a foundation, the growth between 2008 and 2015 has been remarkable and will be discussed in more detail in the section below.

Africa Information Ethics

Since the initial discussion began in 2007, several other networks have emerged from the more central African Network for Information Ethics (ANIE), to the various country chapters spanning Africa. The central hub organising these activities is the African Centre of Excellence for Information Ethics (ACEIE), funded by the South African Department of Telecommunications and Postal Services (DTPS) and hosted by the Department of Information Science, University of Pretoria. This section will focus on the various key activities that Rafael Capurro was involved in, and which took place in this period, 2007 to 2015.

First International ANIE Conference, 5–7 February 2007

Pretoria, Tshwane, South Africa

From early 2007, Capurro formed part of a group of international academics in the fields of information technology, philosophy and politics who came together in South Africa to form an academic network that would focus on information ethics in Africa. It was during and subsequent to this event that Capurro more devotedly documented his participation with academics and policy makers on his website (Capurro, 2015). This 1st International ANIE Conference took place in Pretoria, Tshwane, South Africa, from 5 to 7 February 2007. This conference was arranged under the auspices of UNESCO, sponsored by the South African Government and organised by the University of Wisconsin-Milwaukee, the University of

Pretoria, the University of Pittsburgh and the International Center of Information Ethics (ICIE) of which Capurro was, and remains (2015) the President.

Under the heading “The Joy of Sharing Knowledge” and together with the support of UNESCO, the ground-breaking Pretoria Conference brought together some 80 government officials, policy makers, academics from Africa and internationally to discuss the impact of the use of modern information and communication technologies on the African continent. This network is known as the African Network for Information Ethics. The Pretoria Conference instructed ANIE to attend to the identified a gap in the academic representation of the African continent on the global stage, specifically pertaining to information ethics, and therefore started organising events to stimulate research on information ethics in Africa.

Under Capurro’s guidance the Pretoria Conference also formulated the ground breaking *Tshwane Declaration on Information Ethics in Africa*, (2007) which states

The participants of the African Conference on Information Ethics held in Pretoria 5-7 February 2007 under the auspices of the South African Government and the official patronage of UNESCO agree on the following declaration under the title: Ethical Foundations of the African Information Society. (The) African Information Society should be people-centred, inclusive and development-oriented in accordance with the purposes and principles of the Charter of the United Nations, international law and multilateralism, and respecting fully and upholding the Universal Declaration of Human Rights as well as with the Declaration of Principles of the World Summit on the Information Society so that people everywhere can create, access, utilize and share information and knowledge, to achieve their full potential and to attain the internationally agreed development goals and objectives, including the Millennium Development Goals. In accordance with the Declaration of Principles of the World Summit on the Information Society regarding the ethical dimensions of the information society we reaffirm that African information society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature. It should be committed to promote the use and development of modern information and communication technology (ICT) in order to defeat poverty and underdevelopment. African information society should promote societal as well as technical ICT structures and processes in order to make knowledge sharable to all Africans. It should particularly promote the participation of all African citizens in the development of public policy in the process constructing the African information society. Information Ethics, understood as a field of critical reflection on societal moral values and practices with regard to the production, storage, distribution and access to knowledge as well as to all kinds of societal processes, systems and media of information and communication, should play a crucial role in African education and policy in order to foster social, cultural and economic development by promoting the worth and dignity of human individual and social life.

E-Governance Workshop, 23–26 February 2009 Magaliesburg, South Africa

Well known in the UNESCO operational environment, Capurro influenced information ethics in e-governance during the UNESCO Training Workshop on Information Ethics and E-Government in Sub-Saharan Africa that took place from 23 to 26 February 2009, Magaliesburg, South Africa.

The Africa Information Ethics website¹ contains the reports of this workshop in detail. Many of the reports were compiled by Capurro and Coetzee Bester. A workshop on e-government was sponsored by the South African Government, and took place under the patronage of UNESCO. The workshop resulted in various important guidelines for the interaction between resources and communities towards more efficient e-government. The participants and expert-presenters at the first-ever information ethics and e-government conference held in Africa comprised a unique, new and extremely valuable portfolio of human expertise and other resources that could and should play a lead role in advancing and advocating e-Government programmes in Africa.

This ground breaking event resolved that resources are for use by all stakeholders (not just those within government) that are leading and managing e-Government programmes: participating private sector components, the university sector and large NGOs which specialize in responding to the needs of disadvantaged sub-populations. In addition, resources for local communities should be made available using appropriate technologies. These might include, for example, radio and local television broadcasts, reports in a variety of languages and delivery mechanisms for possible adaptation and use by local villages and other communities. The development of infrastructure, as well as the use of additional resources, should not be at the expense of the environment. An appropriate balance must be established and maintained, and the focus should be on renewable energy resources.

While discussion of e-Government and information ethics among professionals is important and should continue, all publicity, descriptions, planning and implementation of projects should focus on local priorities, such as availability of clean water, farming concerns, education, health care and development—using the language of the local community and language pertinent to the local priorities. This needs to be explained, clarified and amplified if needed for all intended stakeholders to be served by the e-Government programme.

Second International ANIE Conference, 6–7 September 2010 *Gaborone, Botswana*

Following the 2007 Pretoria Conference the ANIE Conference took place in 2010 in Gaborone in Botswana. Capurro attended this event as the guest of honour overseeing the conference objectives that included the following statement:

Traditionally, information ethics focuses on the moral questions relating to the life cycle of information as it pertains to its generation, gathering, organization, storage, retrieval, and use. As a field it broadly examines issues related to privacy, security, access to information, intellectual freedom, quality and integrity of information, as well as intellectual property rights. In addition, the broader domain of professional ethics is of import, encompassing the ways we as professionals engage with, and respond and react to those ethical issues. The main stakeholders impacted by this array of ethical issues can be divided into three groups. These are the creators/distributors of information products and services, information mediators,

1 www.africainfoethics.org

including librarians, and the information users. Information and communication technology (ICT) supports the different information life cycle activities and plays a pivotal role in the shaping, understanding, and defining of information ethics. (Britz, 2010)

During the 2010 Botswana event, the Second International ANIE Conference, Capurro formally introduced the Capurro Fiek Foundation. Jointly established by Capurro and his wife Annette Capurro (née Fiek), it is a German-based institution that specifically focuses on and promotes the following activities:

- academic activities such as research, publications, and events in the field of information ethics,
- pedagogical and social activities to support children and adolescents living under unfair living conditions,
- charitable projects dealing with overcoming the gaps and disadvantages with regard to access and use of information and communication technologies. (Capurro, 2015)

The Capurros are deeply concerned about the changes brought about by new digital technologies, particularly in developing countries. The below mentioned award is aimed at motivating academic research, teaching and community participation on matters related to Information Ethics in Africa.

Information Ethics Curriculum, 23–24 July 2011

Pretoria, Tshwane, South Africa

In June 2011, a workshop took place in Pretoria to initiate the process to develop a curriculum for teaching information ethics in Africa. This workshop, under Capurro's guidance, defined information ethics as follow:

Information ethics is a descriptive and emancipatory discipline dealing with the study of the changes in the relationship between people and the world due to information and communication technologies. Information ethics in Africa provides a unique platform to build an Information and Knowledge Society driven by critical reflection on ethos and values within the African Context. It addresses opportunities and challenges unique to the development of African societies. (Capurro, 2008)

Establishment of the African Centre of Excellence for Information Ethics, 17 May 2012

Pretoria, Tshwane, South Africa

A Memorandum of Understanding was signed on 15 December 2011 between the Vice Chancellor of the University of Pretoria, Professor Cheryl de la Rey, and the South African Government Department of Communications. In January 2012, due to the successful agreement, the African Centre of Excellence for Information Ethics office was officially

established in the Department of Information Science, University of Pretoria. Due to his longstanding relationship with this department and his recognised status in the field of information ethics, Capurro was invited to serve on the advisory board of ACEIE. Furthermore, as President of the International Centre for Information Ethics, Capurro was well positioned to support and encourage the international dialogue on intercultural information ethics between networks such as ICIE and ANIE. It has also been further envisioned that a formal agreement should be drawn up between these two networks in order to cement the partnership.

Third International ANIE Conference, 3–7 September 2012 **Pretoria, South Africa**

After the success of the first two ANIE International Conferences and the establishment of the ACEIE, a 3rd ANIE International Conference on Information Ethics was organised. This initiative was also supported by the MoA, and hence for the third time representatives from the ANIE network were invited to participate. Presenters from Kenya, Ghana, Uganda and Tanzania, were at this event.

The themes and rationale for the pre-conference workshop and the conference were:

Development of a curriculum to teach information ethics at universities in Africa *3–4 September 2012*

Being one of the three main focal points of the ACEIE, the development of this curriculum to teach information ethics at tertiary institutions, the workshop was specifically designed to create a platform where current and future curricula could be discussed.

It was specifically during this workshop that Capurro was able to actively guide the growth in dialogue; as information ethics is an applied ethics, a thorough understanding and appreciation of its philosophical foundations are required to maximise the potential to actualise its practical lessons. Since most delegates did not have a background in philosophy, Capurro's expertise was invaluable to the delegates to help underpin the context of this type of ethics. This event has inspired many young information-oriented researchers to include philosophical foundations into their lecturing content and has also contributed to a deeper awareness of the importance of information ethics more generally.

The Cheetah Generation's fast track towards social media and information ethics in Africa *5–7 September 2012*

The conference's theme was chosen by Johannes Britz and Capurro. The rationale behind the "cheetah generation's fast track" was inspired both by the African landscape and by the rapid growth in the development of ICTs and users' (especially young users') ability to assimilate these technologies. As curricular development in tertiary settings shapes the ideas and the positions of students, its role in forming a group of ambassadors for information ethics was considered to be highly relevant to the further growth of the field. However, students need to be equipped first with a thorough understanding of the risks

and opportunities that are associated with social media and ICTs. Capurro was the keynote speaker for this event and addressed the more than 50 delegates on this important topic.

14th Annual Department of Information Studies Conference, University of Zululand

4–6 September 2013, Empangeni, South Africa

This conference was organised by the noted South African scholar, Professor Dennis Ocholla who has made significant contributions to studying information use and ethics in the African context. The theme of the conference was “Information Ethics in Africa.” Ocholla and Capurro have emerged as significant figures in the information ethics landscape in Africa with several collaborations in print to date. In his capacity as founder of the Capurro-Fiek Foundation, Capurro presented three awards. These awards were for

1. The best student paper and presentation;
2. The best senior paper and presentation;
3. The best overall paper and presentation.

For the first time since the 3rd International ANIE Conference in 2012, undergraduate and postgraduate students were encouraged to present papers on information ethics. The enthusiasm sparked by Rafael Capurro’s contribution and participation at the 2012 event inspired many lecturers to apply innovative means in their courses in order to promote student inquiry in this field.

Fourth International ANIE Conference

2–4 July 2014 Kampala, Uganda

For the fourth ANIE conference the venue was moved outside of the Southern Africa Development Community (SADC), to East Africa. Kampala, Uganda, was the host of the 4th International ANIE Conference, with the theme of *Information Ethics in Africa: Cross-Cutting Themes for Managing Your Digital Life*. The pre-conference workshop focussed on the information ethics curriculum to be taught at universities across Africa, while the conference proper addressed issues pertaining to the management of one’s digital life. It was Capurro’s first visit to Uganda and hence the delegates (more than 100!) were eager to introduce him to Uganda’s unique culture. It would be remiss of us to not mention in this compilation in his honour one of the most memorable events during the conference. On the second day of the conference, the hotel experienced a power outage that could not be solved by generators. The delegates and presenters, including Capurro, then decided to move to the open-air balconies of the hotel to proceed with the presentations. Also due to the power outage the laptops used for presentation had lost their battery power, and hence the presenters had to make use of their mnemonic devices in order to continue with the presentations. In keeping with Classical Greek traditions, Capurro proceeded as though

he were in the centre of an *agora*, and he addressed the delegates seated in front of him, as though they were Athenian philosophy scholars eager to hear what Aristotle is saying. Needless to say, apart from rejoicing to regain the battery power of the laptops, once the power was restored, the delegates and presenters thoroughly enjoyed the innovative and interactive manner in which the session was handled. One could dare say that such a natural and dialogical approach is more conducive to an intercultural dialogue, since it proposes a to-and-fro manner in which to share ideas and academic research.

It was also this type of innovative influence on our African practice that led the ANIE board to present a special award to Rafael Capurro for a decade of distinguished contribution at this conference.²

Academic Contributions

According to Capurro “Information Ethics from Africa is another field and not much has been published so far on the impact of ICT on African societies and cultures from a philosophical perspective” (Capurro, 2008). Due to this lack of published research on information ethics in Africa, the ACEIE commenced planning a research agenda and compiling publications pertaining to information ethics in the African context. Capurro was directly involved in the creation of the following publications:

Africa Reader on Information Ethics (2007)

The 2007 conference on information ethics took place in Pretoria with the theme of “The Joy of Sharing Knowledge” looking at ethical challenges in the information age. Selected papers by participants were reviewed and compiled into a significant reference book on matters related to Information Ethics in Africa. This book was published as the Africa Reader on Information Ethics (2009). The Reader was compiled also as a tribute to the late Mokwinning Nlapho, who as a government official was one of the visionaries for the information ethics project.

Information Ethics in Africa: Cross-cutting Themes (2013)

This work has been designated as a “handbook” for information ethics (Ocholla, Britz, Capurro & Bester, 2013) in Africa and in addition to chapters by Ocholla, Capurro and Britz, included contributions from noted African LIS scholars Stephen Mutula and Dick Kawooya on topics that are both practical and relevant for researchers and students in information ethics. The handbook was specifically aimed at helping facilitate information

2 A Special ANIE Award for a decade of special contribution to information ethics was presented by Prof. Johannes Britz (Provost, University of Wisconsin-Milwaukee, USA) to Prof. Rafael Capurro. Available at: <http://www.capurro-fiek-stiftung.org/awards.html>.

ethics discussion in African learning and teaching environments and to stimulate debate in the research and postgraduate communities.

Concepts in Information Ethics: – An Introductory Workbook (2013)

This workbook (le Sueur, Hommes & Bester, 2014) in the format of a lexicon was researched and compiled to address the need for easy reference on the use and meaning of concepts in information ethics. More than 65 concepts were prioritised and alphabetically listed in the workbook. This workbook is aimed at non-professional information practitioners and students who enter the field of information ethics but it is also useful to supplement tertiary curricula and workshops on the topic. In addition to the *Cross-cutting Themes*, the *Concepts* also functioned as a brainchild of the 2012 Conference. Capurro supported and advised the ACEIE during 2013 whilst this was compiled.

Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa

The extensive growth of the ANIE network since the establishment of the ACEIE in 2012 (more than 400 participants across Africa and 80 academic and other professional institutions) necessitated the establishment of a formal platform on which academics could publish their research on information ethics in Africa. Although various texts were compiled over the past two years, none were in accredited journals. Because of the pressures faced by academic institutions to publish in accredited journals, the ANIE network required this in order to substantiate its belief that information ethics in Africa is indeed a field that deserves academic recognition and research funding. Professor Stephen Mutula, the editor of *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, helped to solve this issue. The editorial team of *Innovation* made two special editions available. These special editions were reserved for the exclusive publishing of peer-reviewed articles on information ethics. Capurro published one article in each edition.

Innovation: Journal edition of articles related to Information Ethics in Africa, first edition (v46), 2013

The July/August 2013 edition of the *Innovation Journal* was dedicated to academic articles related to information ethics in Africa. The Africa-focused content included 14 peer reviewed academic articles that have helped to form a research base for students interested in information ethics. This issue was compiled under the auspices of the Africa Centre of Excellence for Information Ethics. Articles were published by the University of Pretoria personnel as well as by renowned researchers commissioned by the ACEIE. *Medicine 2.0: Reflections on a Pathology of the Information Society* was Capurro's contribution to the first edition.

Innovation: Journal edition of articles related to Information Ethics in Africa, second edition (v47), 2014

The December 2013 edition of the *Innovation Journal* was the second edition which dedicated academic articles related to information ethics in Africa. Similarly to the first edition, this journal was compiled under the auspices of the Africa Centre of Excellence for Information Ethics. In this volume Capurro's article, *Ethical Issues of Online Social Networks in Africa*, focused on the historical and cultural considerations associated with social networks in Africa. He also addressed the role of both ANIE and the ACEIE in this landscape—and the possibility that they can function as a platform for critical dialogue on Information ethical matters across Africa. The two dedicated journals produced a total of 28 accredited articles.

Conclusion

This article started by relating the metaphor of an information ethics train that left the station in 2006 with a handful of role players. During a few short years this shared belief grew into the reality of information ethics as a substantial field of research grounded in the African landscape. This reality includes the active contribution of Rafael Capurro as an academic leader, a guiding philosopher and an eager scholar in matters related to information ethics in Africa. The ACEIE 2014 Annual Report (ACEIE: 2014) has documented that the tentative steps taken in 2006 by Rafael Capurro and Johannes Britz have led to a unique cooperative academic network that operates in 19 African countries. These countries have more than 80 tertiary training institutions and universities with more than 400 academic colleagues who have begun to engage with information ethics (in some form) in their curriculum. This is indeed a remarkable feature in this African landscape. During the past decade Rafael Capurro attended, addressed and participated in more than 12 events and publications relevant to information ethics in Africa. He is indeed an exemplary role model for the importance of an intercultural dialogue for information ethics—and ANIE and the ACEIE wish to continue to offer him numerous platforms for engagement. Well done Rafael and thank you, you are an inspiration and motivation to all of us!

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