Highways, Byways, and Road Systems in the Pre-Modern World

The Ancient World: Comparative Histories

Series Editor: Kurt Raaflaub

Published

War and Peace in the Ancient World
Edited by Kurt Raaflaub

Household and Family Religion in Antiquity
Edited by John Bodel and Saul Olyan

Epic and History
Edited by David Konstan and Kurt A. Raaflaub

Geography and Ethnography: Perceptions of the World in Pre-Modern Societies
Edited by Kurt A. Raaflaub and Richard J. A. Talbert

The Roman Empire in Context: Historical and Comparative Perspectives
Edited by Johann P. Arnason and Kurt A. Raaflaub

Highways, Byways, and Road Systems in the Pre-Modern World
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert

Highways, Byways, and Road Systems in the Pre-Modern World

Edited by
Susan E. Alcock, John Bodel, and Richard J. A. Talbert

WILEY-BLACKWELL
A John Wiley & Sons, Ltd., Publication

This edition first published 2012

Wiley-Blackwell is an imprint of John Wiley & Sons, formed by the merger of Wiley's global Scientific, Technical and Medical business with Blackwell Publishing.

Registered Office
John Wiley & Sons, Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK

Editorial Offices
350 Main Street, Malden, MA 02148-5020, USA
9600 Garsington Road, Oxford, OX4 2DQ, UK
The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK

For details of our global editorial offices, for customer services, and for information about how to apply for permission to reuse the copyright material in this book please see our website at www.wiley.com/wiley-blackwell.

Library of Congress Cataloging-in-Publication Data

Highways, byways, and road systems in the pre-modern world / edited by Susan E. Alcock, John Bodel, Richard J. A. Talbert. – 1
p. cm. – (Ancient world: comparative histories ; 5)
Includes bibliographical references and index.
ISBN 978-0-470-67425-3 (hardback)
1. Roads–Social aspects. 2. Roads–History. I. Alcock, Susan E. II. Bodel, John P., 1957– III. Talbert, Richard J. A., 1947–
HE341.H47 2012
388.1–dc23

2011045992

A catalogue record for this book is available from the British Library.

Set in 10/13pt Galliard by SPi Publisher Services, Pondicherry, India

1 2012

Catherine Julien, distinguished archaeologist and ethnohistorian of the indigenous cultures of the Americas, died prematurely on May 27, 2011. A reflection by her was the inspiration for this volume, and we dedicate it to her memory. The work that she so generously shared will live on.

Contents

Figures and Tables

Figures

Tables

Notes on Contributors

Susan E. Alcock is Director of the Joukowsky Institute for Archaeology and the Ancient World, Joukowsky Family Professor of Archaeology, Professor of Classics, and Professor of Anthropology at Brown University. Her current research interests include the Hellenistic and Roman eastern Mediterranean and southern Caucasus, landscape archaeology, and the archaeology of memory and of imperialism. She received her PhD in classical archaeology at the University of Cambridge.

John Bodel, who received his PhD in classical philology at the University of Michigan, Ann Arbor, is W. Duncan MacMillan II Professor of Classics and History at Brown University. He specializes in the history and literature of the Roman empire, and has specific interests in epigraphy, Roman religion, slavery, funerals and burial customs, ancient writing systems, and the editing of inscriptions and literary texts. Since 1995 he has directed the U.S. Epigraphy Project, which gathers information about Greek and Latin inscriptions in the United States.

Pierre Briant defended his *thèse d'État* in ancient history at the University of Besançon. He holds a professorship at the Collège de France, Paris, focusing on the history and civilization of the Achaemenid world and Alexander's empire. He is also director of the *Persika* series and of the website www.achemenet.com. A related interest is the historiography of ancient Persia and of Alexander, especially in the eighteenth century.

Jennifer Gates-Foster is an archaeologist and Assistant Professor in the Department of Classics, University of Texas, Austin. She received her PhD in classical art and archaeology at the University of Michigan, Ann Arbor. She has worked with pottery and other artifact types to explore material manifestations of cultural interaction between groups, particularly in the context of the Hellenistic and early Roman Near East, especially Egypt.

R. Bruce Hitchner is Professor of Classics and International Relations at Tufts University. He is a Roman historian and archaeologist with special interests in north Africa, southern France, and the Roman economy. He received his PhD in history at the University of Michigan, Ann Arbor.

Catherine Julien is Professor of History at Western Michigan University, Kalamazoo. She received her PhD in anthropology at the University of California, Berkeley. Her work centers on South America during the sixteenth century, before and after the arrival of Europeans, including the transition from Inca to Spanish rule in the Andes, and Inca genres used by Spaniards in narrating the Inca past.

Nanny Kim is a research fellow at the Institute of Chinese Studies, Heidelberg University. She received her PhD in Chinese history at London University's School of Oriental and African Studies. Her current project in the research group "Monies, Markets and Finance in China and East Asia, 1600–1900" (directed by H. U. Vogel) explores transport technologies in the context of changing economic and ecological conditions. It draws upon sources for the transport of mint metals from the mines of southwest China to the Beijing mints. Results are to be published in *Mountain Rivers, Mountain Roads: Transport in Southwest China, 1700–1850.*

Michael Maas is Professor of History and Classical Studies at Rice University. He received his PhD in ancient history and Mediterranean archaeology at the University of California, Berkeley. His areas of research are the Roman empire and late antiquity. He edited *The Cambridge Companion to the Age of Justinian* (2005). Currently he is writing a book about Roman imperial ethnography.

Pekka Masonen is adjunct Professor of History at Tampere University, Finland. His research interests include Africans and the wider world before the nineteenth century; European exploration and images of Africa; and the precolonial history of Sudanic Africa. His book *The Negroland Revisited: Discovery and Invention of the Sudanese Middle Ages* was published in 2000. He received his PhD in history at Tampere University.

Jason Neelis, who received his PhD in Asian languages and literature at the University of Washington, is Assistant Professor for South Asian Religions at Wilfrid Laurier University, Canada. His research focuses on the historical and religious contexts of Buddhist inscriptions and manuscripts. His book *Early Buddhist Transmission and Trade Networks* (2011) retraces artery and capillary routes for Buddhist institutional expansion in the northwestern borderlands of South Asia.

Michael Nylan, who received her PhD in East Asian studies at Princeton University, is Professor of Chinese history at the University of California, Berkeley. Her recent research has focused on the "classical era" in China (304 BCE–316 CE), pursuing such themes as the northwest frontier areas, administration of the family, modes of persuasion in mid-Han (with particular attention to orality and writing technologies), and the thinker Yang Xiong (53 BCE–18 CE). She is currently completing two books, the first on theories of pleasure in early China, the second on the capital of late western Han Chang'an.

Derek Ruths is Assistant Professor of Computer Science at McGill University. He received his PhD in this subject at Rice University. His research focuses on the problems of modeling and predicting the behavior of interconnected living systems, from biological cells to human societies. Recently he has been considering how social groups form, how social media alter human behavior, and how human communities can be detected in online social networks.

Justine M. Shaw is Professor of Anthropology at the College of the Redwoods, Eureka, California. Her primary research areas are Maya *sacbeob*, regional settlement patterns, and water management systems, which she examines as principal investigator for the Cochuah Regional Archaeological Survey. She received her PhD in anthropology at Southern Methodist University. Her book *White Roads of the Yucatan* appeared in 2008.

Adam Silverstein received his PhD in Islamic history at the University of Cambridge, and has been a fellow of Oxford's Centre for Hebrew and Jewish Studies, and university research lecturer in Oriental Studies. In 2011, he moves to King's College, London, as senior lecturer in Jewish Studies and the Abrahamic Religions. He specializes in Near Eastern history and civilization, with particular reference to continuities and discontinuities between periods and peoples. He is the author of *Postal Systems in the Pre-Modern Islamic World* (2007) and *Islamic History: A Very Short Introduction* (2010).

James E. Snead received his PhD in anthropology at the University of California, Los Angeles, and teaches at California State University, Northridge. The pre-Columbian trail and road networks of the American southwest are among his principal research interests. His research is featured in two forthcoming publications, his book *Ancestral Landscapes of the Pueblo World* (2008), and a co-edited volume *Landscapes of Movement: Paths, Trails, and Roads in Anthropological Perspective* (2009).

Richard J. A. Talbert, who received his PhD in classics at the University of Cambridge, is William Rand Kenan, Jr., Professor of History and Classics at the University of North Carolina, Chapel Hill. His recent preoccupations have been mapping, worldview, and travel. He edited the *Barrington Atlas of the Greek and Roman World* (2000), as well as co-editing *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods* (2008), and *Geography and Ethnography: Perceptions of the World in Pre-Modern Societies* (2010). His monograph *Rome's World: The Peutinger Map Reconsidered* also appeared in 2010.

Constantine N. Vaporis, who received his PhD in East Asian studies at Princeton University, is Professor of History and director of the Asian studies program at the University of Maryland, Baltimore County. His books include

Breaking Barriers: Travel and the State in Early Modern Japan (1994); *Tour of Duty: Samurai, Military Service in Edo and the Culture of Early Modern Japan* (2008); *Nihonjin to sankin kôtai* [*The Japanese and Alternate Attendance*] (2010); and (forthcoming) *Voices of the Shogun's Japan. Contemporary Accounts of Daily Life in Tokugawa Japan, 1600–1868.*

Series Editor's Preface

The Ancient World: Comparative Histories

The application of a comparative approach to the ancient world at large has been rare. This series, of which the current volume is the sixth, intends to fill this gap. It pursues important social, political, religious, economic, and intellectual issues through a wide range of ancient or early societies, occasionally covering an even broader diachronic scope. "Ancient" will here be understood broadly, encompassing not only societies that are "ancient" within the traditional chronological framework of ca. 3000 BCE to ca. 600 CE in east, south, and west Asia, the Mediterranean, and Europe, but also later ones that are structurally "ancient" or "early," such as those in pre-modern Japan or in Meso- and South America before the Spanish conquest. By engaging in comparative studies of the ancient world on a truly global scale, this series hopes to throw light not only on common patterns and marked differences, but also to illustrate the remarkable variety of responses humankind developed to meet common challenges. Focusing as it does on periods that are far removed from our own time, and in which modern identities are less immediately engaged, the series contributes to enhancing our understanding and appreciation of differences among cultures of various traditions and backgrounds. Not least, it thus illuminates the continuing relevance of the study of the ancient world in helping us to cope with problems of our own multicultural world.

Earlier volumes in the series are *War and Peace in the Ancient World* (ed. Kurt A. Raaflaub, 2007); *Household and Family Religion in Antiquity* (eds. John Bodel and Saul Olyan, 2008); *Epic and History* (eds. David Konstan and Kurt Raaflaub, 2010); *Geography and Ethnography: Perceptions of the World in Premodern Societies* (eds. Kurt Raaflaub and Richard Talbert, 2010), and *The Roman Empire in Context: Historical and Comparative Perspectives* (eds. Johann Arnason and Kurt Raaflaub, 2011). Other volumes are in preparation, including *Thinking, Recording, and Writing History in the Ancient World* (ed. Kurt A. Raaflaub), and *The Gift in Antiquity* (ed. Michael Satlow).

The current volume has its origin in a workshop held in 2008 at Brown University under the auspices of the Program in Ancient Studies (now the Program in Early Cultures) and the Joukowsky Institute for Archaeology and the Ancient World.

The papers given and discussed there in a stimulating atmosphere and under ideal conditions were later profoundly revised or rewritten and complemented by others that seemed needed to realize the concept and framework of this volume as they emerged during those discussions. I thank the organizers of the workshop and editors of this volume, Susan Alcock, John Bodel, and Richard Talbert, and the contributors for producing another excellent volume in our series.

Kurt A. Raaflaub

Preface

The present volume originates in the first instance from a 2006 workshop at Brown University that resulted in the publication of *Geography and Ethnography: Perceptions of the World in Pre-Modern Societies*, co-edited by Kurt Raaflaub and Richard Talbert for the former's series *The Ancient World: Comparative Histories* (Wiley-Blackwell, 2010). Raaflaub, having taken the lead initially in proposing the geography and ethnography project, then endorsed with alacrity Talbert's subsequent proposal for a related study of highways. The trigger for this suggestion was in fact a passing reference by Catherine Julien (a participant, it would turn out, at both conferences) at breakfast during the 2006 workshop to comparisons that the sixteenth-century Spanish conquerors of Peru made between Roman and Inca roads. The remark sufficed for Talbert to envisage at once how fruitfully such comparisons might be extended to pre-modern societies worldwide which developed overland transport and communication networks.

Raaflaub generously offered to sponsor this second conference, though in the end he could not participate himself. Susan E. Alcock and John Bodel, his colleagues at Brown and his successors as directors of the Program in Early Cultures (formerly Program in Ancient Studies), were pleased to be asked then to become involved.

Alcock and Bodel, following a tradition established by Raaflaub for the Program in Ancient Studies, built this conference into the curriculum of an undergraduate seminar they taught in spring 2008 on "Highways and Byways in Antiquity." The students in this class attended and participated in the conference, and maintained the practice of each student "shadowing" a chosen speaker. The conference was a great success, and we are delighted that all those who presented (or sent) papers are represented in this volume, with the welcome addition of two chapters, one by Jason Neelis exploring the transmission of Buddhism across pre-modern Asia, the other by Justine Shaw on the Mayan *sacbeob* system. The chapter by Pierre Briant was translated from the French by John Bodel.

Gratitude is owed to many people for the productive conversations and smooth running of the event and this subsequent publication. First and foremost, of course, we thank the conference participants for their intellectual investment and good humor. We would like to acknowledge also the members of Alcock and Bodel's undergraduate seminar: Isa Abdur-Rahman, So Yeon Bae, Sarah J. Baker, Joseph Bobroskie, Evan Kalish, Chistopher Kendall, Kathleen Loyd-Lambert, Carissa Racca, Devin Wilmot, and Jose Yearwood. Their dedication to the project enriched the conference for all its participants. For administrative support, thanks are due to Sarah Sharpe of the Joukowsky Institute for Archaeology and the Ancient World, as well as to the event's sponsors at Brown: the Program in Early Cultures, the Joukowsky Institute for Archaeology and the Ancient World, the Department of Classics, the Office of the Dean of the Faculty, the Department of Egyptology and Ancient West Asian Studies, the Department of History, and the Program in East Asian Studies. Finally, we are grateful beyond measure to Lisa M. Anderson for her careful copy-editing of the volume, and to Bryan Brinkman for compiling the index.

Susan E. Alcock
John Bodel
Richard J. A. Talbert

Introduction

A distinctive and exciting feature of *The Ancient World: Comparative Histories* series in general, and of this volume and its predecessor *Geography and Ethnography: Perceptions of the World in Pre-Modern Societies* (Wiley-Blackwell, 2010) in particular, is its expansion of the spatial and cultural scope from the areas traditionally encompassed in studies of western civilization to the entire globe. Pre-modern societies, worldwide, developed systems of overland (and in some cases riverine and maritime) transport and communication: this observation might seem both basic and obvious. Yet we would argue that there has been not only a slowness to enumerate and describe the innumerable "highways" of these societies and their functioning, but even more a failure to evaluate them, and their social, cultural, and even religious importance, in any comparative fashion.

Such is the goal of the present volume. At the outset there appeared to be no comparable work available, although one admirable study has now appeared, *Landscapes of Movement: Trails, Paths, and Roads in Anthropological Perspective*, a 2009 set of twelve contributions co-edited by James Snead (a contributor to the present volume), Clark Erickson, and J. Andrew Darling. Pioneering and invaluable though this work is, it nevertheless focuses primarily on societies within the American continent.

Full, comprehensive global coverage is also, inevitably, beyond the capacity of the present volume in turn. Even so, the range of its fourteen contributions by an international team of scholars is extraordinary – India, China, Japan, the Americas, North Africa, Europe, and the Near East, spanning from the second millennium

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

BCE to the nineteenth century. An early surprise, and challenge, was the repeated difficulty of identifying *any* scholar with the relevant interest in certain likely regions or cultures. In the case of West Africa, for example, all three co-editors' combined efforts ended in failure. We faced the same prospect for Classical Era China. In this instance one possible expert of whom we had hopes, Michael Nylan, assured us that in any case there was next-to-nothing to be said about highways there. When we entreated her to attempt a contribution nonetheless, she kindly consented, and then reported three months later the discovery that there was in fact plenty to say, and of immense value and interest, as her chapter now richly demonstrates. Meantime, the established experts we found with greater ease (for Japan, for example, and the Roman empire) acknowledged that they had never envisaged, much less participated in, a comparative cross-cultural endeavor where the circumstances of the time and place familiar to them were set against those elsewhere. The volume's vital comparative dimension enables it to cohere to a remarkable degree, and should encourage inter-disciplinary research aimed at developing the further potential of such approaches. Even more fundamentally, we hope that the volume will inspire inquiry into the highways of major pre-modern states where these have yet to be studied.

We set no single terminal date for the "pre-modern" period. Rather, the request made to contributors was merely that they should not extend their coverage into the stage at which mechanized forms of land transport, railroads in particular, were introduced. In much of China, for example, that development had still to occur as recently as the 1930s, according to a contemporary report quoted by Nanny Kim (p. 66): "Except where railroads or modern automobile service is available, travel is on foot, by sedan chair, on muleback, in two-wheeled carts, or by boat. Twenty miles a day is a good average."

Even in parts of western Europe conditions might remain pre-modern far into the nineteenth century, as evoked by Giuseppe Tomasi, Prince of Lampedusa (1896–1957; see Gilmour 1988), of a summer journey made by his forbears from Palermo to Santa Margherita Belice in south-west Sicily during the revolution of 1860 (now possible by car in a couple of hours):

> The journey had lasted more than three days and been quite appalling. The roads, the famous Sicilian roads which had cost the Prince of Satriano the Lieutenant-Generalcy, were no more than tracks, all ruts and dust. The first night at Marineo, at the home of a notary and friend, had been more or less bearable, but the second at a little inn at Prizzi had been torture, with three of them to a bed, besieged by repellent local fauna. The third was at Bisacquino; no bugs there but to make up for that the Prince had found thirteen flies in his glass of *granita*, while a strong smell of excrement drifted in from the street and the privy next door, and all this had caused him most unpleasant dreams; waking at very early dawn amid all that sweat and stink he had found himself comparing this ghastly journey with his own life, which had first moved over smiling level ground, then clambered up rocky mountains, slid over threatening passes, to emerge eventually into a landscape of interminable undulations, all the same color, all bare as despair. (Tomasi 1960, 50–1)

The dismissive reference to the nature and state of Sicily's roads in 1860[1] can act as a caution against interpreting the "highways" of the present volume's title at all strictly. "Highways" is intended here as nothing more than an elastic shorthand term. Naturally enough, those of a pre-modern culture may well not match what current western expectations take for granted, let alone even remotely resemble an interstate or transcontinental highway today. Indeed the sheer variety of highways across pre-modern cultures emerges as both remarkable and instructive. At one extreme they may even attain the width of a U.S. Interstate with a total of six lanes, as in the case of the seventy meter-wide grand imperial highways constructed in China's capital regions – so wide, explains Nylan, that scholars disbelieved their recorded dimensions until recent archaeological discoveries confirmed them. Equally remarkable constructions for their deliberate design and obvious high cost are the Maya *sacbeob* causeway roads discussed by Justine Shaw, and the Inca highways discussed by Catherine Julien. Moreover, as both contributors show, in these two instances road construction was clearly only part of a more extensive remodeling of the landscape that served either to impress upon the population the proud grip imposed by a dominant power (Julien) or to unite kin groups and facilitate social integration (Shaw).

At the other extreme, despite the traffic passing between principal settlements, there might even be no road visible at all to the untrained eye – the most obvious cases, in this context, being the Egyptian deserts (the context of Jennifer Gates-Foster's chapter) and the Sahara (discussed by Pekka Masonen), a desert conceived of by Arabic geographers and others as an ocean, with its oases as islands, and camels (only used widely after the Arab conquest) as ships for the perilous two-month crossing. Elsewhere, as the inclusion of "byways" in the volume's title recognizes, a landscape was often more suitably penetrated and traversed by multiple paths rather than by highways. In discussing the diffusion of Buddhism from India to China through the region of the so-called Silk Road, Jason Neelis underlines the need for travelers to vary their routes in the face of "constant shifts in the high mountain terrain caused by the movements of glaciers, avalanches caused by earthquakes, rivers, and streams made difficult to cross by swollen snowmelt in the late summer, and extremely vertical topography" (p. 21). Equally extraordinary for its use of whatever available route might best fit its purpose is the private communication-network maintained for several centuries during the Geonic and Abbasid periods between the principal Jewish centers of learning in Iraq – at Babylon especially – and Jewish communities as distant as Spain and Central Asia. This network is discussed by Adam Silverstein, together with one developed later and operated from Egypt – so efficiently in fact that Egypt's Fatimid rulers, who had no postal system of their own, even employed the Jewish service.

The modern western assumption that a road of any importance would be a state-sponsored, rather than a private, initiative is undercut by the insights into China offered by Nylan and Kim, and into Tokugawa Japan by Constantine Vaporis. In China during both the Classical Era and the Late Imperial period, local communities and prominent individuals can be seen to have played a major role in building roads and maintaining vital infrastructure (bridges especially), while in Japan a network of unofficial byways grew up to allow movement by the many travelers who were liable to face restrictions and delays on the state highways. Undercut, too, by this volume is the further modern assumption that a road will necessarily be constructed to accommodate wheeled traffic. On the contrary, even cultures aware of the wheel might use it little or not at all on their roads. The point applies most strikingly to the Incas (the word "wheel" does not appear in Julien's contribution), and also to Japan. As a result, the gradients on Inca highways could be far steeper than any to be found on a Roman road, and the Japanese Gokaidô did not suffer the damage done to contemporary European roads by carts. Maya *sacbeob* were even spared pack animals, because the Maya had no beasts of burden.

Surprising today – as they would also have been to ancient Romans – are the limitations placed upon the use of highways in several societies. North American drivers are familiar with toll roads and parkways restricted to certain types of vehicles, but in China, the grand imperial highways already noted were reserved for the sole use of the emperor (and were often hidden from view by walls or palisades erected on either side). On other highways in China during the Classical Era, official checkpoints regulated travelers so as (in Nylan's words) "to control the flow of people, things, and ideas as much as possible, lest too much commerce and too much movement disrupt subject populations engaged in sedentary agriculture, the basis of stable rule within civil society" (p. 42). Japan's Tokugawa government established a comparable scheme of regulation on its highways for similar reasons, moreover with a gendered bias that reflected a special concern to keep movement by women to a minimum. The lack of written testimony from the non-literate cultures of the Maya and the Inca makes it impossible to establish just what restrictions, if any, were placed upon use of their *sacbeob* and highways respectively. However, Julien is surely right to see some restrictions as likely in the case of the imperial Inca, and the forms and destinations of the Maya *sacbeob* suggest to Shaw that they were not designed for common uses or users. More broadly, Julien leaves no doubt that residence in the Chinchaysuyu district, through which a highway approached Cuzco, was itself a prestigious reward for loyal service to the Inca.

Regulation of highway users is a matter that leads into the larger issue of what "road systems" in the volume's title may imply. There looms the danger that the modern mind may be unduly quick to perceive a system or network when perhaps none existed. Thus, in Snead's view, improved documentation by archaeologists has now invalidated the notion that the roads of the Chaco Canyon in New Mexico formed a centralized system. There were, rather, many short, separate roads here, whose function often seems by no means, practical or otherwise, obvious; conversely, the roads that must have connected to many areas of critical resources used by the inhabitants of Chaco have yet to be identified.

Where the presence of a system is not in doubt, the modern mind still may too readily take for granted a degree of conscious planning and control. To be sure, several contributions do confirm such an assumption. In Classical Era China, as Nylan stresses, persistent concern with buttressing strong centralized authority made the construction, maintenance, and smooth operation of the road system a priority for the emperor's ministers; standard axle-lengths were even prescribed by Qin's First Emperor "so that the empire's carts and carriages could race along the ruts" (p. 37). The close insight offered by Pierre Briant into the network of Persian "Royal Roads" – with relay stations and royal warehouses sited along them at regular intervals for the benefit of authorized travelers – lends full conviction to his claim that "the road system itself formed an essential feature for military strategy and for the organization of territories" (p. 196). The same can be said of the Gokaidô system built and maintained by the Tokugawa shogunate with the primary aim of keeping Japan's 260 or so local rulers (daimyo) in subjection. Elaborate regulation of route and timing governed the movements of each daimyo – accompanied by an entourage that could number up to several thousand – as he traveled to fulfill his legal obligation to wait upon the shogun at Edo every other year.

The Inca road system in turn bears all the marks of imperial authority and so too, it is commonly thought, does the Roman. In this latter instance, however, Richard Talbert queries whether Roman emperors exploited, or even envisaged, "their" system as an integrated whole. As rulers they exercised authority in a far less proactive manner than, say, their counterparts in Persia or China. If Roman officials were ever instructed to gather comprehensive data for the management and control of the empire's road system, it is hard to detect any such records or maps being put to use.

Even so, whatever the level of the emperor's understanding or of the authority he chose to exercise, there can be no doubt that the far-flung Roman road system did serve as an active force for social, economic and cultural change. Bruce Hitchner's chapter is devoted to this impact, with special reference to urbanization and economic growth in south-east Gaul, as well as in areas of the province of Africa Proconsularis which today lie within Tunisia. The chapter by Michael Maas and Derek Ruths further develops the same theme by underlining the later importance of the road system for the spread of Christianity and pilgrimage, and – even with its upkeep neglected – for holding the empire together in the fourth and fifth centuries. Maas and Ruths propose lines for fresh research dedicated to clarifying the role of the connectivity furnished by Roman roads in fostering cultural, political, and linguistic change during Late Antiquity and beyond. The chapters by Neelis and Masonen offer important reminders that routes linking distinctly different cultures have the potential to influence the spheres at *both* ends, not merely at one. For example, while Arabic sources tend to present the role of black Africans in the trans-Saharan trade as unduly passive, in fact – as Masonen demonstrates – this trade raised the interest taken by the peoples of Sudanic Africa in the wider world, and their knowledge of it, to an impressive level.

A matter of indifference it may have been to Roman emperors that the roads within their empire functioned as a powerful force for change and development. Elsewhere, ironically, it emerges that even repressive efforts to control roads and their use might not succeed in preventing travel or arresting the social consequences of such movement. Tokugawa Japan, again, provides a most striking example. For many common people there, peace and improved economic conditions made travel feasible and attractive, and they typically declared pilgrimage to be their purpose, because the regulations for pilgrims were the least restrictive. If there was strong likelihood of obstruction on the official highways, as women in particular had reason to fear, they could, and did, still resort to the private (and illegal) "side roads" or byways. By the late seventeenth century, commoners' determination on the one hand, and less harsh supervision by the authorities on the other, formed the basis for a "culture of movement" manifested in an extensive and very varied travel literature, as well as woodblock prints and maps. Consequently (in Vaporis' words), "by the end of the eighteenth century travel had developed into what seems like a national obsession" (p. 104). Regarded by the Japanese as a leisure pastime, a liberation from day-to-day restrictions and troubles, travel also unwittingly became as an influential element in the formation of a national identity.

In crossing landscapes, the experience of traversing an age-old route could clearly inspire travelers to articulate their sense of relationship both with the predecessors in whose footsteps they were following, and with the gods. Gates-Foster develops this theme in her treatment of the various types of inscriptions discovered at sites of ritual or topographic importance in Egypt's Eastern desert; the theme recurs in Neelis' chapter with reference to comparable inscriptions and petroglyphs found in the Silk Road region. Classical Era China, however, is the culture where the idea of the highway finds its fullest and most passionate expression. To quote Nylan, "The 'path' or 'way' or 'road' is unquestionably the most important metaphor in the early received writings composed in classical Chinese" (p. 45). Notably, the Chinese perceived roads as a force for evil as well as for good. Road construction (not to mention subsequent maintenance) could only add to the oppression suffered by the countless common people whose labor was required; at the same time it could even ruin the reputation of otherwise distinguished officials whose ambition to build a Straight Road eventually offended the gods of regions disturbed by such large-scale engineering. Roads in China (as everywhere) could bring banditry and disease, as well as extend invaders' reach. For travelers to placate Road Deities was always essential, above all because to die on the road was most inauspicious.

Apart from a broad geographical and chronological scope, we would like to underline another sign of this volume's diversity: the range of data sets employed. Many previous studies on road systems relied heavily on textual sources, be they literary accounts of elite travel, letters conveyed along postal routes, official government accountings, or epigraphic documents such as milestones; all remain essential elements, as the chapters by Briant, Kim, Neelis, Silverstein, and Talbert (just to touch on a few examples) demonstrate. In other cases, archaeological evidence offers the vast majority of what can be recovered and reconstructed of a society's modes of travel (see, for example, Snead on the prehistoric American Southwest, Shaw on the Maya, or Julien for Inca evidence not derived from Spanish colonial sources). Material culture indices, apart from the actual remains of roads themselves, are also periodically invoked, for example with Vaporis' use of woodblock prints and maps, or the petroglyphs and graffiti of Gates-Foster and Neelis. What is encouraging, and common to many of the contributions, is the integration of several strands of data, with text and material evidence collaborating not only to provide specifics on an individual society's "highways and byways," but also to sketch the wider context in which those roadways functioned. Finally, we should note the novel experiment by Maas and Ruths of employing a computer algorithm to explore connectivity and "clusters" in Rome's *Antonine Itinerary*. This work joins a growing body of interest in network analysis, variously defined and variously investigated, in the ancient world (e.g. Isaksen 2008; Malkin et al. 2009; Ruffini 2008; Ur 2003).

One aim of the comparative conferences in early cultures at Brown that give birth to volumes such as this is to stimulate new insights into similarities and differences among civilizations not regularly considered together. The "Highways" conference was no exception in this regard, and prompted the identification of four areas of current interest in research (among many possible others) in which the potential for cross-cultural and interdisciplinary dialogue seems especially rich: connectivity, integration and the landscape, religion and roads, and kings' highways.

Connectivity unites many of the chapters, but four in particular test its theoretical and practical limits. Snead's sharp review of scholarly misreading of poorly archaeologically documented Pueblo trails and Chaco roads in the American Southwest advocates an approach to connectivity that turns the focus away from points and lines toward archaeologies of movement and emplacement. Where the evidence is better and the scale larger, as Maas and Ruths demonstrate in their test-case analysis of the road system of the later Roman empire, the possibility exists of detecting through patterns of connectivity "clusters" of economic, social, or political significance that broadly correspond to the regional divisions (dioceses) of provincial organization at the dawn of late antiquity. No roads connected the North African littoral to Sudanic Africa, but the caravans that traversed the Sahara Desert from the eighth through the nineteenth century conveyed knowledge and goods in both directions. That the reciprocal nature of the exchange has not been better recognized is, as Masonen argues, largely because vectors of connectivity are seen largely from the perspective of the beholder. According to Talbert, Roman emperors and their upper-class subjects showed little awareness of or interest in the much vaunted road network on which their mastery of the world supposedly depended – until it was first conceptualized and graphically represented at precisely the time (ca. 300 CE) when the imperial itinerary on which the analysis of Maas and Ruths is based laid out the patterns of a coherent network largely corresponding to the then existing administrative divisions of empire.

Integration and social organization are less often recognized than travel and transport as essential functions served by many highways and road systems, but, as Hitchner argues, the well-maintained arteries and trunk roads of the western Roman empire during the first three centuries CE accomplished both: they brought provincial towns into the imperial community by stimulating local economic and cultural growth and thus helped them to articulate their local identities against the backdrop of a global Roman culture. "Tawantinsuyu" for the Incas described the union of four conquered territories, the names of each referring simultaneously to an important polity and the road leading to it from Cuzco, the Inca capital. Julien shows how the reshaping of the landscape beside the Chinchaysuyu road as it neared Cuzco defined the concept of Tawantinsuyu for both the Incas and the peoples they annexed as one embracing both control of and respect for local landscapes. In late Imperial China (the focus of Kim's discussion), where private contributions provided essential infrastructure for the imperial road system, euergetism and philanthropy enabled corporate entities and communities as well as individuals to establish both status and relationships with neighboring and distant peoples. The precise purpose of the causeways in the Mayan lowlands (*sacebeob*) analyzed by Shaw is unknown, but their construction, placement, and orientation all point to their symbolic (and possibly religious) function in linking elite clan groups or settlements to the central power.

Roads and pathways, emblematic of travel and journeys, generated their own cults, and they served as conduits and testimonials of religious community in ways that transcended their service as mere routes of pilgrimage. Nylan's discussion of roads in the Classical Era in China begins with consideration of the potency of the road as a metaphor in early Chinese thought and concludes with a remarkable panorama of propitiatory cults to road deities and heroized road-builders, who paradoxically earned semi-divine worship (and social preferment for their descendants) for public benefaction, despite disturbing local gods and wasting human life. In the Egyptian desert, where the harshness of the terrain invited and inspired travelers to inscribe their mastery of it onto the landscape in the form of dedications of thanksgiving to protecting deities, the continuous use of certain roads throughout the Pharaonic, Ptolemaic, and Roman periods created the medium, as Gates-Foster shows, for a community of memory based on a commonality of physical experience. In later periods, religious migrations of persons and beliefs followed private, subsidiary routes that circumvented or superseded the formal public modes of travel and communication: so it was, according to Neelis, that Buddhist pilgrims and itinerant traders of South Asia beginning in the third century BCE left inscribed records in the form of dedicatory offerings at religious shrines (more than 50,000 petroglyphs and 5,000 inscriptions) along the capillary networks of paths by which they traversed the mountain ranges dividing the subcontinent from Central Asia and China; so too, according to Silverstein's analysis, the legal rulings (*responsa*) and circular letters issued by rabbis from the Talmudic academies of Iraq to Jewish followers across Europe and West Asia during the early Islamic period traveled via a private Jewish mail service that was more efficient than the public post.

So-called "royal roads" – kings' highways – stand apart from others in scale of infrastructure and strategic importance, although both may become subverted by the roads' eventual use. Our contributors offer two classic examples, from early modern Japan and ancient Persia, that illustrate both the distinctive commonalities and the peculiar variations of the form. Vaporis traces the rapid devolution of the Gokaidô highway network under the Tokugawa shogunate from a ceremonial military procession route to a popular highway thronged by tourists and "pilgrims" (initially the form of private travel most tolerated the government), despite various official efforts to restrict or to enforce its use. The logistics and administration of the Great Roads of the Persian Achaemenid Empire form the topic of the chapter by Briant. Here the so-called "Travel Rations" texts of the Persepolis Tablets provide a detailed snapshot from around 500 BCE of the elaborate infrastructure set up across the empire to support the King and his royal entourage, which show the local satraps called upon to provide rations and lodging to official travelers from their private resources as well as from the royal supplies.

Where next? Limitations of time and a desire for focus necessitated a minimum of attention to waterways and marine transport, but many overland routes connected with canals and river systems or culminated at ocean ports that themselves formed the major nodes of maritime networks, and much movement of people and goods within the territorial boundaries of the cultures considered in this volume traversed both zones (cf. Horden and Purcell 2000; Zumerchik and Danver 2010; Arnaud 2005). In certain regions where pre-modern civilizations flourished (notably, southern China from the Yangtze River to the borders of Yunnan, northern central Europe, the Danube and Rhone system), intra-terrestrial waterways – the interlinked systems of navigable canals, lakes, and rivers – were essential components, along with the land-based networks, in well integrated communication systems (Braudel 1981, 421–2; McCormick 2001, 77–82, 663–9; Hermon 2010; Campbell 2012). A recent survey of the modern world's "strategic highways" included among the forty-five international and transcontinental routes canvassed rivers, canals, channels and sea passages, as well as railways, air-traffic routes, and oil pipelines (Arnold 2000). If the latter are limited to the modern era, the former were equally important in the pre-modern world: indeed, four of the river systems that rank among today's strategically most important – the Nile, the Tigris-Euphrates, the Indus, and the Yellow River – nurtured four of the world's earliest civilizations and have remained in continuous use as highways of communication for millennia. Several of our contributors remark the integration of waterways with the land-based road systems they discuss (e.g. Nylan and Kim on China, Julien on the Inca; contrast Vaporis (p. 103) on Tokugawa Japan, where restrictions on the use of water routes prevented travelers from bypassing the roads); in ancient Egypt, as Gates-Foster (p. 205) aptly puts it, "all roads led to or from the Nile, both literally and figuratively." A natural meeting place between the two worlds is bridges; the emphasis placed by several of our contributors (e.g. Nylan and Kim, Shaw) on these crucial architectural elements points to one productive area, among several, for future exploration of some of our themes (cf. Holland 1961).

The passage from Lampedusa quoted above reflects the ancient Chinese perception of the road as metaphor for life and its mixed fortunes. In the vivid evocation of the slow, arduous journey from Palermo to Santa Margherita Belice in 1860 is also to be found a brief but valuable counterweight to the focus of the present volume, a reminder of the deprivation and isolation associated with lack of roads. Collectively, the volume's fourteen contributors convey how widely pre-modern road systems vary in character, and in the degree of organization and investment they represent. Also exposed are the multiple ways in which built systems may reflect the ideology of their makers and users. Still more striking perhaps is the contradiction embedded in them all, regardless of their different character: namely that, while agents of conscious change in the first instance, sooner or later these systems are likely to serve in turn as agents of unanticipated and sometimes less welcome change – be it social, economic, linguistic, religious, or other. If this volume can inspire further comparative investigation into the linkage between highways and change, then all those who have contributed to it will be well satisfied.

Susan E. Alcock
John Bodel
Richard J. A. Talbert

Note

1 For conditions in the decades immediately prior to 1860 (when it was still the norm to travel between the island's two principal cities, Palermo and Messina, by ship) and after, see Mack Smith 1968, 428–30, 474–5. No railroad was built in Sicily until the early 1860s. Compare the memorable collection of reports of road and traveling conditions during the seventeenth and eighteenth centuries in Europe, Asia, and the New World in Braudel 1981, 415–19.

References

Arnaud, P. 2005. *Les routes de la navigation antique: itinéraires en Méditerranée*, Paris: Errance.

Arnold, G. 2000. *World Strategic Highways.* London and Chicago: Fitzroy Dearborn.

Braudel, F. 1981. *Civilization and Capitalism 15th–18th Century. Vol. I. The Structures of Everyday Life: The Limits of the Possible*, trans. S. Reynolds. New York: Harper and Row.

Campbell, B. 2012. *Rivers and the Power of Ancient Rome.* Chapel Hill: University of North Carolina Press.

Gilmour, D. 1988. *The Last Leopard: A Life of Giuseppe Tomasi di Lampedusa*. London and New York: Quartet Books.

Hermon, E., ed., 2010. *Riparia dans l'empire Romain: pour la définition du concept* (*Proceedings of the Quebec Seminar/Actes des journées d'étude de Québec, 29–31 Octobre 2009*), BAR Int. Series 2066. Oxford: Hedges.

Holland, L. A. 1961. *Janus and the Bridge.* Rome: American Academy in Rome.

Horden, P. and N. Purcell. 2000. *The Corrupting Sea: A Study of Mediterranean History.* Malden: Blackwell.

Isaksen, L. 2008. "The Application of Network Analysis to Ancient Transport Geography: A Case Study of Roman Baetica." *Digital Medievalist* (2008): www.digitalmedievalist.org/journal/4/isaksen/.

Mack Smith, D. 1968. *A History of Sicily: Modern Sicily after 1713.* London: Chatto and Windus.

Malkin, I., C. Constantakopoulou, and K. Panagopoulou, eds., 2009. *Networks in the Ancient Mediterranean*. London and New York: Routledge.

McCormick, M. 2001. *Origins of the European Economy: Communications and Commerce, A.D. 300–900.* Cambridge: Cambridge University Press.

Ruffini, G. R. 2008. *Social Networks in Byzantine Egypt*. Cambridge: Cambridge University Press.

Snead, J., C. Erickson, and J. A. Darling, eds. 2009. *Landscapes of Movement: Trails, Paths, and Roads in Anthropological Perspective*. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology.

Tomasi, G., Prince of Lampedusa. 1960. *The Leopard*, trans. A. Colquhoun. London: Collins and Harvill.

Ur, J. 2003. "CORONA Satellite Photography and Ancient Road Networks: A Northern Mesopotamian Case Study." *Antiquity* 77: 102–15.

Zumerchik, J. and S. L. Danver, eds., 2010. *Seas and Waterways of the World: An Encyclopedia of History, Uses, and Issues*, 2 vols. Santa Barbara: ABC-CLIO.

1

Overland Shortcuts for the Transmission of Buddhism

Jason Neelis

Introduction: Roads as Ideological Concepts and Everyday Realities

Buddhist discourses on paths of practice and doctrine leading beyond worldly attachments to the "far shore" of Nirvāṇa are grounded in everyday experiences of travel on actual roads.[1] The symbolism of the "Eightfold Path" as the road to the cessation of suffering and the "Middle Way" between extremes of excessive indulgence and ascetic mortification is closely related to the characterization of the historical Buddha Śākyamuni as the re-discoverer of an ancient road. Texts such as Buddhaghosa's *Path of Purification* (*Visuddhimagga*) and Atiśa's *Lamp for the Path to Awakening* (*Bodhipathapradīpa*) demonstrate that Buddhist scholars from various traditions framed methods of reaching religious goals in terms of "paths." Based on the various "*mārga* schemes" for applying meditation techniques and understanding doctrinal positions, Robert Buswell and Robert Gimello argue that "the concept of 'path' has been given an explication more sustained, comprehensive, critical, and sophisticated than that provided by any other single religious tradition" (1992, 2).

The project of finding pathways to escape from suffering in the mundane realm of cyclical existences (*saṃsāra*) is not exclusively Buddhist, but abundant Buddhist tropes drawn from physical journeys reflect an institutional history of dynamic movement. For example, the ideal of Buddhist renunciants who have "gone forth"

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

(*pravrajita*) from domesticity to itinerant wandering is the ostensible basis of monastic dependence on material donations from lay supporters, who receive religious merit in exchange. Epithets of the Buddha as a "caravan leader" (*sārthavāha*) and narratives about Buddhist traders acknowledge the importance of commercial patronage of Buddhist institutions. Differences over the interpretation and application of the Buddha's teachings (*Dharma*) underlie polemical juxtapositions between the "inferior vehicle" (*Hīnayāna*), the "superior vehicle" (*Mahāyāna*), and the "diamond/thunderbolt vehicle" (*Vajrayāna*).

While traditional interpreters and modern scholars have focused considerable attention on mapping systems of Buddhist thought, networks of routes that facilitated processes for the transmission of Buddhist ideas and artifacts throughout and beyond ancient India have not received equal emphasis.[2] Archaeological patterns, inscriptions, images, and other forms of material culture provide evidence of routes traveled by Buddhist monks, nuns, pilgrims, and merchants who acted as agents of transmission. Rather than treating paths as conceptual maps for reaching supramundane goals, in this essay I aim to address a gap in the study of the early movement of Buddhists across pre-modern Asia by examining informal networks of capillary routes that connected the main overland arteries of northern India with the so-called Silk Routes of Central Asia. Epigraphic and visual evidence in the form of graffiti inscriptions and petroglyphs along alternative "shortcuts" through the high mountain valleys of northern Pakistan reveals irregular patterns of long-distance transmission instead of a gradual diffusion of Buddhism from India to China along major highways.

"Northern Route" (*Uttarāpatha*) in South Asia

When Buddhist religious institutions emerged after the fifth century BCE, the "Northern Route" (a literal translation of Sanskrit *Uttarāpatha*) served as a major network for administrative control, commercial traffic, and cultural exchange between northern India and the northwestern border regions (Figure 1.1). Rather than a single highway with a fixed itinerary, the Northern Route was a broad collection of flexible arteries on a loosely defined northwest–southeast axis intertwined with multiple feeder routes (Lahiri 1992, 401). However, references to the Northern Route in literary texts and inscriptions more commonly indicate a region or country located relatively to the north rather than a precise set of routes or a definite geographical area. The Sanskrit grammarian Pāṇini's use of the Northern Route as a grammatical example is probably the earliest literary reference.[3]

Buddhist narrative literature in particular includes many episodes of Northern Route merchants engaged in long-distance trade, such as the story of two merchants named Trapuṣa and Bhallika who became the first lay followers by offering alms to the Buddha just after he attained awakening (*Lalitavistara* 381.4; *Mahāvastu* 3.303). According to cosmographic traditions of Sanskrit Purāṇas, the Northern Route (designated as *udīcya-* or *uttarāpatha*) comprising the northern and

Figure 1.1 Nodes of the *Uttarāpatha*.

northwestern borderlands of the "Āryan heartland" (Ā*ryāvarta*) was inhabited by various peoples localized in geographical areas extending from parts of Rajasthan and the Punjab to Afghanistan, Iran, and Central Asia (Sircar 1971, 29–36). The second century BCE grammarian Patañjali and the authors of highly normative Dharmasūtras and Dharmaśāstras regarded areas to the west of "where the Sarasvatī [River] disappears" (*Baudhāyana Dharmasūtra* 1.2.9 [trans. Olivelle 1999, 134]) in the Thar desert of Rajasthan as outside of the narrower boundaries of Ā*ryāvarta* and the "Middle Country" (*Madhyadeśa*). From the viewpoint of orthodox Brahmins, inhabitants of the Northern Route were stigmatized as impure due to foreign contact.

In contrast to the ambivalent perspectives towards the Northern Route in some textual traditions, epigraphic sources indicate that road networks played significant roles in political administration, military conquest, and contact among Buddhist religious communities. The extensive distribution of rock edicts and pillar inscriptions of the third century BCE Mauryan ruler Aśoka at important junctions of routes and in border regions indicate that his domain encompassed most of the Indian subcontinent.[4] In versions of the second major rock edict issued in about the thirteenth year of his reign, Aśoka emphasized the importance of maintaining road networks: "On the roads wells were excavated and trees were planted for the use of men and animals."[5] In the seventh pillar edict (preserved only on the pillar from Toprā in Haryana) issued during his twenty-seventh regnal year, Aśoka lauded facilities available for travelers along imperial roads:

> On the roads I have had banyan trees planted, which will provide shade for men and animals. I have had mango groves planted, and every eight *kos* I have had wells excavated and rest houses built. I have had numerous watering places made here and there for the use of men and animals.[6]

References to the establishment of provisions along roads lend support to the reports of Megasthenes, a Seleukid envoy to the Mauryan court around 300 BCE, about a "royal road" leading to the capital city of Palibothra (Sanskrit: Pāṭaliputra, modern Patna) and other roads with pillars to mark distances and junctions with byways (McCrindle 1877, 50, 86).[7] Rather than proclaiming a "conquest of the directions" (*digvijaya*) as became standard in the inscriptions of later South Asian rulers, Aśoka advised his subjects to "consider the conquest of *Dharma* the real conquest" (Hultszch 1925, 67). Although it is clear from inscriptions at Buddhist shrines and addressed to Buddhist monastic communities that Aśoka was a lay follower (*upāsaka*), the "*Dharma* conquest" was not an effort to propagate Buddhism as an imperial religion (although Buddhist literary traditions make this claim), since he also encouraged patronage of other religious communities (including Jains, Ājīvikas, and Brahmins) and attempted to synthesize their moral principles in his official messages. Nevertheless, the Mauryan road network maintained and improved by Aśoka certainly facilitated the movement of Buddhist monks within the Indian subcontinent during the third century BCE.

South Asian rulers attempted to emulate the accomplishments of Aśoka by claiming control or conquest over rival kings of the Northern Route. The earliest attested epigraphic reference to the Northern Route appears in the Hāthīgumphā inscription of the Mahāmeghavāhana King Khāravela, who claimed to have "terrified the kings of the *Uttarāpatha*" (Banerji and Jayaswal 1929–30, 88; Sircar 1965, 217).[8] Due to the poor condition of the inscription, the identity of the "kings of the *Uttarāpatha*" remains unclear, but since Khāravela ruled Kalinga (modern Orissa in eastern India) perhaps during the late first century BCE (his dates also remain disputed), contemporary northwestern rulers may have been intended. From the first to third centuries CE, rulers belonging to the Kuṣāṇa dynasty gained control of cities on routes between Bactria and northeastern India. A Bactrian inscription from Rabatak in northern Afghanistan issued during the first year of the reign of Kaniṣka (127 CE)[9] proclaims the extension of Kuṣāna dominion over India:

> In the year one it has been proclaimed unto India, unto the whole realm of the *Kṣatriya*s, that (as for) them – both the (city of) [Ujjain] and the (city of) Sāketa, and the (city of) Kauśāmbī, and the (city of) Pāṭaliputra, and as far as the (city of) śrī-Campā – whatever rulers and other important persons (they might have) he had submitted to (his) will, and he had submitted all India to (his) will (Cribb and Sims Williams 1995–6, 78).

By dominating the capitals of the ancient "Great Countries" (Sanskrit: *Mahājanapada*) – Kośala (Sāketa), Vatsa (Kauśāmbī), Magadha (Pāṭaliputra), and Aṅga (ŚrīCampā) – Kaniṣka and his predecessors not only "submitted all India to their will" but also insured that movement along the Northern Route from Bactria to the Bay of Bengal was unhindered (Fussman 1998, 602). Kuṣāṇa consolidation of control over the primary channels for overland travel and cultural transmission between South Asia and Central Asia had significant implications for long-distance trade and the expansion of Buddhist institutions beyond the Indian subcontinent.

Alfred Foucher (1942–7) proposed that an "Ancient Route" (*vieille route*) extending the Northern Route from Taxila through the Hindu Kush to Bactria was the primary artery for foreign invasions and the spread of Buddhism. Excavations of archaeological sites in Afghanistan have yielded important results that confirm many of Foucher's statements about intercultural exchanges between India, Iran, Central Asia, and the Hellenistic world. However, the model of a gradual diffusion of Buddhism in a sequential pattern along hypothetical highways from the north-western Indian subcontinent to the Oxus Valley in western Central Asia, the Tarim Basin in eastern Central Asia, and eventually to China is overly simplified. Instead, Buddhist missionary monks, nuns, and merchants utilized a much more extensive network of routes to travel beyond the borderlands of South Asia.[10]

Capillary Networks as Shortcuts for Buddhist Transmission

More than 50,000 petroglyphs and 5,000 inscriptions demarcate a network of interconnected passageways that directly connected the Northern Route of South Asia with branches of the Silk Routes in eastern Central Asia. Despite the obvious difficulties of crossing the Himalaya, Hindu Kush, and Karakorum mountains, Karl Jettmar noted that "A shortcut between Central and South Asia was possible, partly compensating for the dangers and strains" (1989, xxvii). Routes through the mountain passes and river valleys of the Upper Indus and its tributaries linked Buddhist centers in Gandhāra, Kashmir, and the Swat Valley (ancient Uḍḍiyāna) with the southern Tarim Basin of Xinjiang in western China. Unlike modern traffic restricted to the Karakorum Highway between northern Pakistan and China, ancient travelers could choose their itineraries based on environmental, economic, political, and religious considerations. Marc Bloch made a similar observation about travel in medieval Europe: "from the beginning of his journey to the end, the traveler had almost always the choice of several itineraries, of which none was absolutely obligatory"

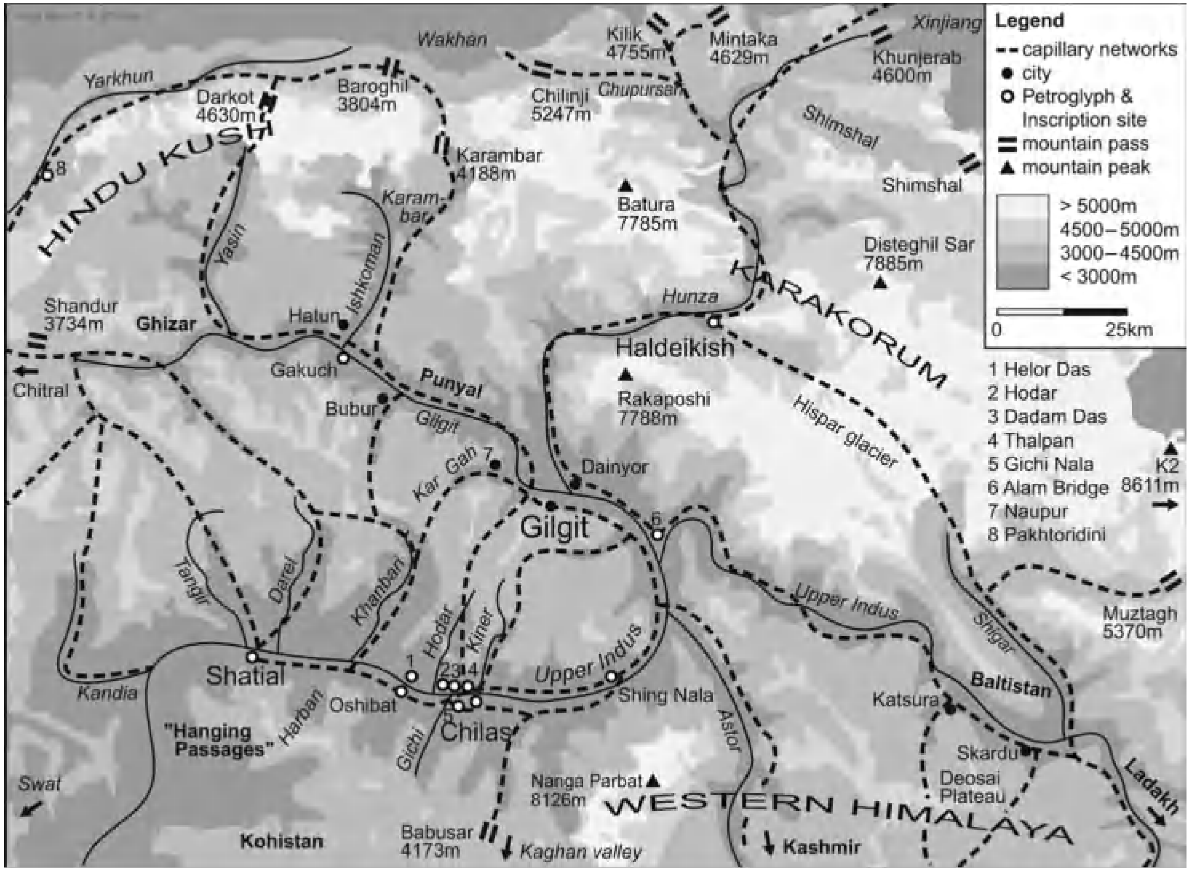


Figure 1.2 Petroglyph and graffiti complexes in northern Pakistan.

(1961, 1.64). Although topographical features constrained the choice of routes, the vast collection of graffiti and petroglyphs demonstrate significant mobility across the high mountain terrain (Figure 1.2). While these informal capillary networks did not replace or substitute for the Northern Route and the Silk Routes of Central Asia as the primary arteries for long-distance trade, they served as alternative pathways for trans-Asian movement across permeable geographical and cultural boundaries.

Informal graffiti inscriptions written by travelers and local residents on rocks located at river crossing places, wayside shrines, village settlements, and hunting trails record temporary visits, religious donations of petroglyphic images, and a vast corpus of personal names reflecting patterns of transregional cultural history. Although the inscriptions are generally brief and formulaic and are often fragmentary, they serve as valuable written evidence for the use of various scripts and languages in a multilingual crossroads during the first millennium. The earliest graffiti inscriptions from the first to third centuries are written in the Kharoṣṭhī script, which was used almost exclusively for writing Gāndhārī, a regional Prakrit of the northwest widely adopted for Buddhist inscriptions and manuscripts (Salomon 1998, 42–56; 1999). Kharoṣṭhī graffiti record numerous personal names formed with components of the Buddhist "three jewels" (*triratna*): Buddha- (*budha*), Dharma- (*dhama*), and Saṃgha- (*sagha*). Onomastic patterns in graffiti clearly indicate that a significant proportion of early visitors and local devotees explicitly identified themselves as Buddhists before the use of Kharoṣṭhī declined in the fourth century.

Most graffiti (about 80 percent) are in varieties of Brāhmī used for writing Sanskrit and hybrid Sanskrit between the fourth and seventh centuries. A transition from Kharoṣṭhī to Brāhmī corresponds with the adoption of Sanskrit as the primary language of Buddhist transmission. Buddhist titles indicate that some writers were Buddhist monks, but since non-Buddhist titles also appear, "not all who traveled along the Indus were necessarily Buddhists" (Hinüber 1989, 52). In addition to Indic inscriptions, a large corpus of Middle Iranian inscriptions (Sims-Williams 1989–92), and smaller numbers of Chinese, Tibetan, Hebrew, and Syriac inscriptions reflect diverse linguistic backgrounds of travelers on these routes.

Petroglyphs from prehistoric periods to the present time represent a wide spectrum of styles, motifs, and images ranging from very common simplified drawings of mountain goats (*caprini*) to skillful renderings of Buddhist *stūpa*s, portraits, and narratives. Graffiti and petroglyphs were abraded into the desert varnish covering the surface of the rocks, resulting in different levels of patination, which, along with paleographic analysis of any accompanying graffiti, iconographic features, and superimpositions, can serve as a relative chronological guide. Each site has its own distinctive characteristics: concentrations of zoomorphic petroglyphs may indicate hunting grounds or trails into the mountains where game was available, while drawings and inscriptions at complexes located near settlements were more likely to have been produced by local inhabitants than visitors. Although Buddhist images are less numerous than other types of drawings at most sites, they provided a locative focus of veneration at outdoor shrines, and attracted travelers and local devotees, who added their names in proximity to the drawings, and can therefore indicate routes of transmission. Such visual "relics of instruction" (*uddeśika dhātu*) in the form of drawings of *stūpa*s, Buddhas, Bodhisattvas, and narrative scenes established a Buddhist presence by creating sacred geographies in areas without the resources (at least initially) to support monumental *stūpa*s or residential monasteries. My focus on Buddhist petroglyphs and graffiti located at important river crossings is intended to demonstrate links between capillary routes used for trade and cross-cultural transmission without implying that graffiti written by travelers outnumber inscriptions of local residents or that Buddhist images dominate the repertoire of petroglyphs.

Shatial

Over 1,000 inscriptions and 700 petroglyphs located at Shatial Bridge on the upper Indus River mark an especially significant junction of ancient byways used by long-distance traders and Buddhist missionaries and pilgrims (Fussman and König 1997). Shatial functioned as an important "transit station" (*Durchgangsstation*) on routes connecting the upper Indus to the Swat Valley and Gandhāra via the infamous "Hanging Passages" (*xuan du*) described in Chinese accounts (Jettmar 1987). Across the Indus River from Shatial, pathways through the Darel and Tangir valleys lead northwards to Gilgit and Chitral, with further links to Badakhshan and the Oxus watershed in northeastern Afghanistan. From Shatial to the east, the Karakorum Highway follows the course of the Indus River upstream to the Chilas plain. Shatial is unique for a collection of several hundred Iranian visitors' inscriptions dating from the third to seventh centuries, which were primarily written by Sogdian merchants who controlled a triangular network of trade routes between their homeland in Central Asia, the upper Indus River valley extending to Ladakh (between Kashmir and western Tibet), and China (Sims-Williams 1996, 45–67; Vaissière 2005, 79–81). The longest inscription at Shatial was written by a Sogdian traveler on his way to Tashkurgan in southwestern Xinjiang:

> (I), Nanai-vandak, the (son of) Narisaf, came (here) on the tenth (day/year) and have requested the favor from the soul of the holy place Kārt (that) I reach Kharvandan [Tashkurgan] very fast and see (my) dear brother in good (health). (Fussman and König 1997, 208, no. 36: 38; Sims-Williams 1989, 23)

Buddhist veneration of images at Shatial focused on a large triptych with an intricate drawing of a *stūpa* and an illustration of the Śibi-Jātaka (in which the king of the Śibis holds a bird which he has saved by cutting off a piece of his own flesh).[11] Densely written Sogdian, Brāhmī, and Kharoṣṭhī graffiti and portraits of devotees prostrating themselves below the images indicate that Shatial was not only a significant node for long-distance trade, but also served as a Buddhist shrine where devotional practices associated with this narrative were localized.

Chilas-Thalpan

Proceeding upriver from Shatial on the upper Indus, several graffiti and petroglyph complexes are located at crossing points, but many of the most impressive Buddhist petroglyphs are concentrated near the modern bridge between Chilas and Thalpan. Paths from Chilas across the Babusar Pass provided limited access during the summer months to the Kagan Valley, which was linked via the Jhelum Valley to Kashmir to the east, while another ancient route to the west through Mānsehrā, where a set of Aśokan edicts was inscribed in Kharoṣṭhī, eventually connected with branches of the "Northern Route" after passing through Hazāra. Routes through Thalpan belonged to a capillary network of mountain trails connecting the tributaries of the upper Indus and Gilgit rivers. At the site of Chilas II (a short distance downstream from Chilas Bridge), about sixty Kharoṣṭhī graffiti belonging to periods from about the first to third centuries accompany petroglyphs of Buddhist monks and dismounted horsemen venerating *stūpa*s, images of Kṛṣna and Balarāma, and the goddess Hārītī(Fussman 1989). Iconographic motifs connected with Buddhist, Hindu, and indigenous traditions shed light on the multiple religious proclivities of visitors to this encampment, which was apparently not an exclusively Buddhist shrine.

Donative inscriptions in Brāhmī frequently identify Buddhist petroglyphs of *stūpa*s, narrative scenes, and portraits of Buddhas and Bodhisattvas as "religious offerings" (*devadharma* or *deyadharma*). Epigraphic formulae of donation and veneration commemorated gifts of rock images, which created opportunities for other devotees to worship. By writing their names in inscriptions next to images, visitors and local devotees insured that merit continued to accumulate for themselves and for the beneficiaries of their acts. At sites around Thalpan and Chilas, a local patron named Kuberavāhana donated several ornate *stūpas* as well as visual narratives of Śākyamuni Buddha's religious biography and a drawing of the Vyāghrī Jātaka in which a Bodhisattva (labeled *Mahāsattva*) makes a gift of his own body to save a hungry tigress and her cubs.[12] Another prominent local patron named Siṇhoṭa donated "religious offerings" (*devadharma*) of petroglyphs depicting the Bodhisattvas Avalokiteśvara and Maitreya along with *stūpa* drawings at Chilas Bridge. Other inscriptions denote homage to Buddhas and Bodhisattvas associated with Mahāyāna, such as Amitābha, Akṣobhya, Prabhūtaratna, and Ratnaśikhin (Hinüber 1989, 101–2). While designs of elaborate *stūpa*s with profuse architectural details and decorative elements and other complex Buddhist drawings are relatively scarce outside of Chilas, Thalpan, Shatial, and Shing Nala (which may have been the site of Buddhist hermitage),[13] rudimentary images of *stūpas* with only the most basic features show that patronage was not restricted to elite donors. In lieu of erecting *stūpas* and supporting residential monasteries for Buddhist monks and nuns, local donors and travelers along the network of routes established wayside shrines by drawing images on rocks and writing their names in graffiti inscriptions.

Gilgit-Alam bridge

Kharoṣṭhī and Brāhmī graffiti written on rocks near the confluence of the upper Indus and Gilgit rivers close to Alam Bridge reflect patterns of long-distance travel and Buddhist transmission (Fussman 1978; Humbach 1980a; 1980b). This complex is located at an important junction of regional routes connecting Gilgit with Baltistan via pathways through deep gorges of the Indus River (still used as the main road to Skardu in Baltistan) and with Kashmir across the Deosai plateau or through the Astor Valley (roughly following the "Gilgit Transport Road," which is no longer used due to border disputes between India and Pakistan). While there are very few petroglyphs of *stūpa*s or other images to indicate that this site functioned as a Buddhist shrine, personal names and titles clearly indicate that many visitors were Buddhist travelers or local devotees. Approximately 20 percent of the personal names in Kharoṣṭhī and Brāhmī graffiti at Alam Bridge are composed of Buddhist naming elements. Examples of Buddhist titles in Brāhmī graffiti include a novice (*śrāmaṇera*) named Asokakṣema, a "Master of Monastic Law" (*vinayadhara*) named Ratnarakṣita, and a "Śākya monk" (*śākyabhikṣu* often indicates Mahāyāna affiliation) named Satyaśreṣṭhi. Brāhmī graffiti recording the visits of *Palolajo Bhikṣu*s were written by Buddhist monks with regional ethnonyms, since Gilgit and the surrounding valleys were ruled by the Palola Ṣāhis until the early eighth century (Hinüber 2004, 58–9). A Buddhist traveler named Saṃgha-buddhi declared that he came for the "Thousand Buddhas,"[14] which suggests that his destination was a shrine of the thousand Buddhas (*Qianfodong*) at Mogao outside of Dunhuang (Fussman 1978, 41–2) or another site in the Tarim Basin of Xinjiang (see below, pp. 22–5). Since epigraphic formulae of arrival are quite common in Kharoṣṭhī and Brāhmī graffiti at Alam Bridge, these inscriptions serve as valuable written records of the journeys of agents of Buddhist transmission.

Hunza-Haldeikish

The northernmost major site of graffiti inscriptions and petroglyphs at Hadeikish in the Hunza Valley also functioned as a significant way-station on the network of capillary routes through the Karakoram Mountains. The Hunza Valley is directly connected to Gilgit to the south by a relatively easy path now followed by the Karakorum Highway, and the Mintaka, Kilik, and Khunjerab passes to the north lead to pathways to the headwaters of the Oxus (in the Wakhan corridor of north-eastern Afghanistan) and to the southern Tarim Basin. More difficult trails over the Shimshal pass and the Hispar glacier have also served as minor feeder routes to the Hunza Valley from the Tarim Basin and Baltistan. Due to constant shifts in the high mountain terrain caused by the movements of glaciers, avalanches caused by earthquakes, rivers, and streams made difficult to cross by swollen snowmelt in the late summer, and extremely vertical topography, the Hunza Valley routes did not necessarily serve as the most practical itineraries, but over 100 Kharoṣṭhī, Brāhmī, Sogdian, Bactrian, Chinese, and Tibetan inscriptions at Haldeikish provide irrefutable written evidence for the movement of long-distance travelers during the first millennium.[15] Haldeikish is predominated by petroglyphs of mountain goats (the name of Haldeikish is derived from *haldén*, the Burushaski word for a male ibex or a domesticated male goat), which may indicate a connection with hunting expeditions. Four large rock outcroppings form a conspicuous natural landmark near an important ford and provide a convenient resting place for visitors who drew zoomorphic designs and abraded graffiti into weathered patches of desert varnish covering the sandstone and shale surfaces. Since graffiti at Haldeikish primarily record the arrival of visitors in epigraphic formulae similar to those used at Alam Bridge and there are very few Buddhist petroglyphs, this site probably functioned as a transit station for long-distance travelers rather than a shrine for local devotees. Nevertheless, Buddhist personal names (appearing in a relatively higher proportion of the Kharoṣṭhi inscriptions, which outnumber other inscriptions at this site) indicate that Haldeikish belonged to the capillary network of long-distance routes of Buddhist transmission between South Asia and Central Asia.

Buddhist graffiti and petroglyphs along this network of capillary routes show that the early movement of monks and other travelers through this mountain region preceded the erection of *stūpa*s or the construction of monasteries with royal or imperial patronage. Instead of using surplus resources to build monumental structures and to support residential communities of monks and nuns, local devotees such as Kuberavāhana and Siṅhoṭa commissioned Buddhist images to be drawn on rocks at wayside shrines (*caitya*s). Although there is no clear evidence of Buddhist *stūpa*s of monasteries in this region of the upper Indus, Gilgit, and Hunza valleys before the fifth century, elite patronage of Buddhist art, literature, and monastic institutions by the Palola Ṣāhi dynasty, which ruled Gilgit from the end of the sixth to the beginning of the eighth century, is apparent in royal inscriptions, colophons of a large cache of Buddhist Sanskrit manuscripts found near Naupur in the Kargah Valley west of Gilgit, and exquisite bronze sculptures inscribed with donative inscriptions and produced by a local atelier (Hinüber 2004). During the latter half of the first millennium, "the combination of international trade and agriculture could have produced a period of prosperity which permitted the flourishing of an active Buddhist culture" (Klimburg-Salter 1990, 817).

Central Asian Transit Zones

Capillary networks in the mountain valleys of northern Pakistan provided shortcuts for the passage of monks, merchants, and other travelers between the northwestern frontiers of South Asia and branches of the "Silk Routes" in the southwestern Tarim Basin. In the broadest sense, the network of overland routes termed the "Silk Road" (*Seidenstraße*) by Ferdinand von Richthofen in the late nineteenth century encompassed many regional itineraries that connected the Mediterranean with East Asia. In eastern Central Asia, northern and southern routes around the Tarim Basin connected Dunhuang with the Chinese capitals at Chang-an (modern Xian) and Loyang. According to a standard model of diffusion, Buddhist missionaries gradually spread the Dharma beyond the Indian subcontinent to the Silk Routes of Central Asia and eventually to China by moving from one center to another along major trade and travel routes.[16] This process, whereby economically parasitic monks and nuns moved out along major routes in order to establish residential monasteries near cities or prosperous agricultural areas where surplus resources were available for making donations, was termed "contact expansion" by Erik Zürcher (1990, 181; 1999, 9). However, Zürcher recognized that contact expansion does not adequately explain the early stages of Buddhism in the Tarim Basin and China, because Buddhist communities began to flourish in several Chinese centers before *stūpa*s and monasteries were established in eastern Central Asia (modern Xinjiang), which prior to ca. 250 remained a "Buddhological vacuum" (Zürcher 1990, 172). To account for this chronological discrepancy between early manifestations of Buddhism in China during the first two centuries and the late appearance of Buddhist institutions in the Tarim Basin, Zürcher proposed that Xinjiang remained a "transit zone" (1999, 13) until economic conditions allowed residential monasteries to flourish after the third century. Zürcher juxtaposed the model of diffusion by contact expansion to an alternative theory of "long-distance transmission" (1990, 182) in order to clarify early patterns in the cross-cultural movement of Buddhism to China, despite an absence of monastic institutions in intermediate transit zones. A brief survey of a few

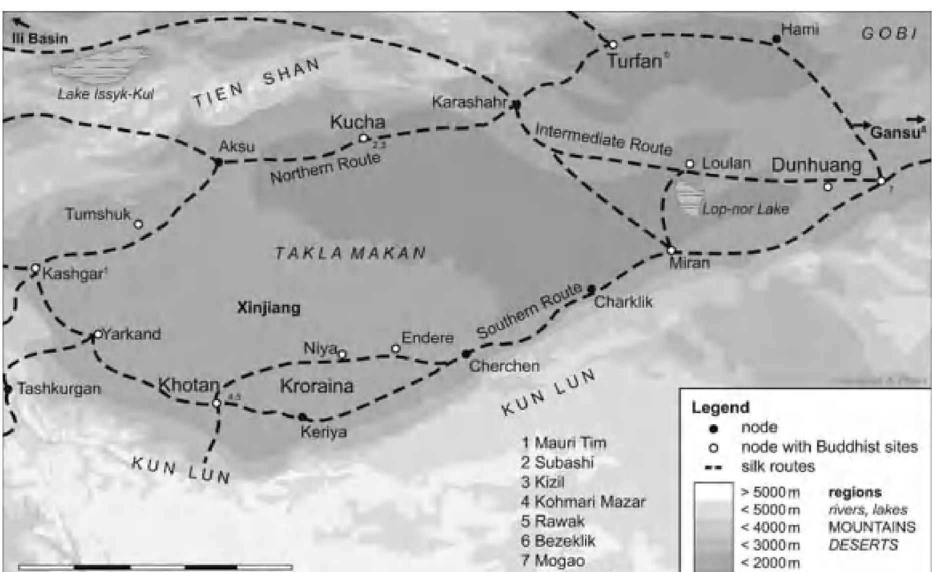


Figure 1.3 Tarim Basin silk routes.

nodes in the Tarim Basin demonstrates intersections between South Asian, Iranian, and Chinese economic and cultural spheres in eastern Central Asia (Figure 1.3).

Khotan

Khotan, the major city of the southern Silk Route for most of the first millennium, maintained economic and religious connections with the northwestern frontiers of the Indian subcontinent and tribute relationships with China (Whitfield 2004, 34–42, 133–68). Bilingual coins of Indo-Scythian (Saka) and Kuṣāṇa rulers from South Asia and coins issued by Khotanese kings with legends in Chinese and Kharoṣṭhī suggests ties between Khotan and Gandhara via capillary routes across the Karakoram in the first century. An incomplete manuscript of a Gāndhārī version of the *Dharmapada* found in a cave at Kohmārī Mazār (Brough 1962) may have been brought from Gandhara to Khotan, which was visited by Chinese monks in search of texts in Indian languages. Small Gandharan stone sculptures, including an image of emaciated Siddhārtha belonging to a portable diptych (Härtel and Yaldiz 1982, 61–2), and molded terracotta figures of Herakles/Serapis with Harpocrates (Rhie 1999, 265–6) arrived in Khotan via long-distance networks for trade and cultural transmission. While Khotan flourished as a regional commercial and religious center of the southwestern Tarim Basin and served as a connecting point between China, India, western Central Asia, and Iran, *stūpa*s and monasteries were not apparently constructed before the third century. M. Rhie tentatively concludes that "Buddhist establishments may have been rather well established in Khotan by 200 A.D." (1999, 322), but she dates sculptures from the Rawak *stūpa* located northeast of Khotan in the late third to early fourth centuries. Thus, Zürcher's model of initial long-distance transmission of Buddhism through Khotan, which later became a major Buddhist center on the southern Silk Route, accords with a lack of archaeological evidence for residential Buddhist monasteries before the late third century.

Silk Route oases of Kroraina: Niya, Endere, Miran, and Loulan

Oases located east of Khotan along branches of the southern Silk Routes in the Tarim Basin functioned as nodes in regional trade networks and as centers for Buddhist art and architecture. Close to 1,000 Kharoṣṭhī documents in the Niya Prakrit dialect of Gāndhāri from sites around Niya, Endere, and Loulan provide interesting snapshots of commercial relationships involving administrative officials, local merchants, and Buddhist monks in the southern Tarim Basin during the third to fourth centuries. An epithet of a Kroraina/Shan-shan king (probably Aṃgoka) describing him as a Mahāyāna devotee (*Mahayana-[saṃ]prasti[da] ṣa*) in a recently discovered Kharoṣṭhī inscription from Endere provides epigraphic evidence for Mahāyāna patronage sometime in the middle of the third century (Salomon 2002, 10).

Buddhist paintings from Miran in the fourth and fifth centuries display stylistic similarities with the artistic traditions of Gandhara, Swat, and Kashmir in the northwestern Indian subcontinent but also reflect ties with the art of Iran and western Central Asia (Rhie 1999, 385). At least five *stūpa*s in the Loulan area on the northern shore of Lake Lop Nor, including a very large monumental *stūpa* within the city walls, reflect the roles of Loulan as the capital of the Kroraina kingdom, a prosperous commercial center on an intermediate route through the Tarim Basin, and the headquarters of the regional Buddhist *saṅgha* (Rhie 1999, 402).

Kucha

Mural paintings in cave monasteries, Buddhist manuscripts, and archaeological remains of *stūpa*s from sites around Kucha in the northwestern Tarim Basin display various continuities with Buddhist artistic and literary cultures. Buddhist paintings from the Kyzil caves, the earliest of which may belong to the fourth and fifth centuries, demonstrate stylistic affinities with artistic traditions of Swat, Gandhara, Sassanian Iran, and China (Härtel and Yaldiz 1982, 47; Rhie 2002, 719). Collections of Buddhist Sanskrit manuscripts (including some Kharoṣṭhī fragments) from the second to sixth centuries suggest links with centers of Sarvāstivādin Buddhist scholasticism in Kashmir, Gandhāra, and possibly Mathurā. Graffiti and caravan passes written in Tocharian (or Kuchean) testify to long-distance travel by Buddhist monks and merchants during the seventh century. Among the archaeological remains at Subashi, the ancient urban center of Kucha, are two large monastery sites with small circular *stūpa*s encased within larger *stūpa*s, which Rhie attempts to date from the second or third centuries "if not earlier" (2002, 644), but the arguments for such early dates are inconclusive.

Turfan

While northern routes through the Turfan oasis probably eclipsed southern routes around the Tarim Basin by the fifth century (Rhie 1999, 392), local Buddhist communities flourished prior to changes in itineraries. A local dynasty patronized Buddhism in Turfan by the end of the fourth century, and the earliest literary evidence for local Buddhism is a translation by Dharmarakṣa dated to 296 (Hansen 1998, 40–1). Buddhist manuscripts from monasteries in and around Turfan and cave paintings from Bezeklik provide ample evidence of Buddhism "above the ground," but there is little evidence for Buddhist items in tomb inventories "below the ground" until the sixth century (Hansen 1998, 50). Early evidence for Buddhism in Turfan supports Zürcher's hypothesis of long-distance transmission, since "Monasticism seemingly leaped across an underdeveloped Central Asia to the wealthy cities of China, only filtering back to Central Asia when economic conditions allowed it" (Hansen 1998, 38).

Paths of Buddhist Transmission to China

This survey of routes of Buddhist transmission in the Tarim Basin indicates that Buddhist institutions in the transit zone of eastern Central Asia did not precede the first manifestations of a lasting Buddhist presence in China during the later Han period. An imperial edict issued in 65 provides the earliest "hard evidence" for "hybrid court Buddhism" at Pengcheng (Zürcher 1990, 159–60). Later in the second century, foreign translators associated with the "Church of Loyang" transplanted an "embryo of metropolitan, 'ecclesiastical' Buddhism" (Zürcher 1990, 163). The earliest foreign translators were not Indian, but bore Iranian ethnonyms.[17] Since Parthians such as An Shigao (who arrived ca. 150 in Loyang) and Sogdians like Kang Senghui (deceased by 280) were not from the Tarim Basin, they present a "…curious situation [in] that the earliest Buddhist missionaries going to China did not come from the oasis states of 'Serindia' but all the way from western Central Asia, crossing the immense vacuum of Sinkiang, and settling in China at the other end of it" (Zürcher 1999, 14). Other eminent translators, including Lokakṣema (active ca. 180–190 in Loyang) and Dharmarakṣa (active ca. 284 in Dunhuang), were described as Yuezhi, an ethnonym connected with either the southeastern Tarim Basin or the Kuṣāṇas in Bactria and South Asia (see above, p. 15). Kumārajīva was born in Kucha in the fourth century, but his father was Indian and he traveled to Kashmir with his mother before returning to Central Asia and China. Although traditional biographies claim that Dharmarakṣa and Kumārajīva came from the Tarim Basin in the third and fourth centuries, there is surprisingly little archaeological evidence for Buddhist monasticism in eastern Central Asia prior to periods when they began their extraordinary careers as prolific translators of Mahāyāna *sūtras* and other Buddhist texts from Indic languages into Chinese.

Routes of eminent monks from South Asia

Many, if not most, eminent Indian Buddhist monks in Chinese hagiographies compiled by Sengyou (ca. 515), Huijiao (ca. 530), and Daoxuan (664) either came from the northwestern frontiers of South Asia or traveled through this region on their overland journeys to Central Asia and China (Bagchi 1927–38; Shih 1968; Zürcher 1999, 30–2). Several figures are associated with the region of Jibin, which is often translated as Kashmir and sometimes as Kapiśā (located near Begram outside of Kabul in Afghanistan), but the term often refers more generally to the northwestern regions of South Asia, including areas of northern Pakistan. While literary accounts specify that monks from Jibin – such as Buddhayaśas, Dharmayaśas, Dharmamitra, Vimalākṣa, and Puṇyatara – traveled overland to Chinese centers via the Tarim Basin, other eminent figures, including Buddhabhadra, Guṇavarman, and Buddhajīva, followed circuitous maritime itineraries. Several sixth century Indian monks (Narendrayaśas, Vinītaruci, and Vimokṣasena) came from Uḍḍiyāna, which is localized in the Swat Valley of northwestern Pakistan.

Certain hagiographical accounts provide information about the itineraries of monks who traveled through northwestern India to Central Asia to China. For example, a Gandhāran monk named Jinagupta from ancient Peshawar (*Puruṣapura*) traveled through Afghanistan (Kapiśā) and the Pamir range to Tashkurgan, via the southern Tarim Basin to Khotan, and through the Gansu corridor to Xian (Bagchi 1927, 276–9; 1938, 446–57). An eminent western Indian monk named Dharmagupta also traveled though Afghanistan (Kapiśā), across the Hindu Kush, and via Tashkurgan, Kashgar, and Kucha to Xian and Loyang (Bagchi 1938, 464–7). Dharmakṣema, a master of protective spells (*dhāraṇī*s) from the "Middle Country" (*Madhyadeśa*), studied in Jibin before going to Kucha and the court of the northern Liang ruler at Lanzhou, where he was murdered in 433 (Bagchi 1927, 212–23; Zürcher 1999, 42–3).

Chinese Buddhist travelers to India

Accounts of Chinese pilgrims supply geographical details and information about Buddhist communities and shrines on long-distance routes used by other Buddhist travelers as well as merchants, diplomatic missions, and sometimes soldiers who traveled to and from South Asia. The famous Chinese traveler Faxian described a shrine to Maitreya in the vicinity of the upper Indus around 400, but archaeological evidence has not been found to confirm his report. Zhemong and other fifth century Chinese pilgrims traveled via similar routes to worship the relic of the Buddha's bowl at Nagarahāra (Jalalabad in eastern Afghanistan), but many details of their itineraries between Central Asia and northwestern India remain unclear (Kuwayama 1987, 711–13; Shih 1968, 144–5). In the beginning of the sixth century, Song Yun and Huisheng travelled through the southern Tarim Basin to Tashkurgan, crossed the Pamir Mountains to northeastern Afghanistan, and continued via Chitral to the Swat Valley. Xuanzang provides a detailed report of his journey from China to India from 627 to 645, although his information about Buddhist communities on the northwestern frontiers (such as the Maitreya shrine visited earlier by Faxian) is sometimes based on secondhand reports rather than firsthand observations. Zürcher cautioned that Chinese pilgrims, Indian missionaries, and translators memorialized in hagiographies represent only "the tiny tip of the iceberg, the élite of scholar monks" (1999, 18) and suggested that many more anonymous foreign monks fulfilled roles as *thaumaturges*, meditation teachers, and ordination experts (1999, 52–7). Like the more famous figures whose long-distance journeys are sometimes outlined in religious biographies, these itinerant monks followed overland networks which connected the Tarim Basin to the northwestern frontiers of South Asia.

Conclusions

Journeys of eminent missionaries and pilgrims, itinerant traders, travelers, and other agents of Buddhist transmission who are memorialized in literary hagiographies, graffiti inscriptions, and images drawn on rocks attest to the use of networks of ancient paths that connected South Asia, Central Asia, and China. Their pursuit of worldly goals of economic profit through trade in precious commodities overlapped with the generation of religious merit, which was accumulated by making donations and performing acts of devotion at shrines along the way. Monks and merchants followed flexible itineraries that changed according to shifting economic, political, and environmental conditions. The movements of various groups (like the Kuṣāṇas) migrating into the Indian subcontinent, missionaries exporting the *Dharma* beyond South Asia, Sogdian traders establishing a triangular network extending from western Central Asia to the upper Indus and China, and Chinese pilgrims visiting shrines on routes to India demonstrate that cultural transmission flowed in more than one direction. Rather than adhering to a regular pattern of diffusion from one monastic center to another on major routes where sufficient economic surpluses were available, the transmission of Buddhism across pre-modern Asia was largely due to travelers who took shortcuts in a decentralized network of capillary byways.

Notes

1 Except where otherwise indicated, all dates are CE. Versions of this essay were presented in 2008 at an American Oriental Society panel on cross-cultural transmission of Buddhism between South and East Asia, and in a lecture for the Center for Buddhist Studies and Silk Road Initiative at the University of California, Berkeley. I thank Phillip Green (University of Florida) for comments.

2 In Neelis 2011, I examine connections between patterns of early Buddhist transmission and networks of trade and travel routes in significant detail.

3 *Aṣṭādhyāyī* 5.1.77: *uttarapathenāhṛtm* "brought from the Northern Route" or "one who has come via the Northern Route" is used as a synonym for **uttarapathika* to explain the application of *–ka* and *–ika* suffixes (*ṭhañ* in Pāṇini's terminology).

4 Falk 2006 is a very useful guide to new discoveries and publications of inscriptions from the reign of Aśoka (ca. 272–232 BCE) with a thorough bibliography and numerous maps. Fussman comments on the distribution of Rock Edicts "near road junctions and important sites on the perimeter of the Empire, often even on the frontier" (1987–8, 68).

5 The translation is based on the Girnar version of the second major rock edict (Hultszch 1925, 3). Other versions (Hultszch 1925, 186) have *magesu* instead of *paṃthesū* for "roads" but the terms are synonymous.

6 This translation follows that of Thapar (1997, 265), based on the edition by Hultszch (1925, 132). Thapar's translation of *niṃsi[d]iyā* as "rest houses" is preferred to Hultszch's "flights of steps (for descending into the water)" (1925, 135).

7 Megasthenes Fragment 4, referring to a royal road 10,000 *stadia* in length, is preserved by Strabo, *Geography* 15.1.11, who further quotes details about the construction of roads with pillars set up every ten *stadia* "to show the byways and distances" (*Geography* 15.1.50 = Megasthenes Fragment 34). According to P. H. L. Eggermont (1966, 277) the account of Megasthenes was the partial basis for a description of stages in the route from Peucolatis (Sanskrit: Puṣkalāvatī, modern Charsada) to the Ganges delta by Pliny the Elder (*Natural History* 62.1–4), which may have also shared a common source with a more detailed list of Indian cities preserved in Ptolemy's *Geography* (7.1.42–81).

8 Although the condition of the inscription is poor, the reading *vitāsayati utarāpadha-rājāno* is clear.

9 The initial date of the continuous era initiated by Kaniṣka is still disputed, although arguments in favor of a separate era from the "Śaka era" beginning in 78 are strengthened by the dynastic genealogy of the Bactrian inscription from Rabatak. Falk (2001) has attempted to establish that the "Kuṣāṇa era" of Kaniṣka was initiated in 127 based on a passage in an astronomical text (*Yavanajātaka*) for calculating dates according to separate eras. See Neelis 2007 for a detailed treatment of Kuṣāṇa and Saka migration routes.

10 See Neelis 2006 for a re-assessment of Foucher's "Vieille Route."

11 Fussman and König 1997, 178–9, Scene 34:A, pl. Vb, refer to previous publications. Based on paleographic analysis of graffiti, Fussman (1994, 43) dates the drawing to ca. 300–350. The Śibi Jātaka is also illustrated in a set of petroglyphs at Thalpan which includes a depiction of the Ṛsipañcaka Jātaka (Bandini-König 2003, 118–22, Scenes 30:D, 30:X). Thewalt (1983) compares and evaluates petroglyphs of Buddhist Jātakas from the upper Indus in relation to other Indian Buddhist artistic and literary traditions.

12 The petroglyph of the Vyāghrī jātaka at Chilas was initially published by Stein (1944, 20–1). Now see Bandini-König 2003, 43–9, Ensemble 30, Scenes 30:A–B, pl. 41, IVa–c, Va, for updated readings of Brāhmī inscriptions that identify Kuberavāhana and his teacher Mitragupta with figures kneeling in prostration.

13 Bandini-König and Hinüber (2001) analyze and catalog inscriptions and petroglyphs from Shing Nala (upstream from Chilas and Thalpan) and Gichi Nala (between Chilas and Shatial).

14 The original Brāhmī (with *sandhi* indicated by "=") is quite clear: *buddhasahasrakāraṇam=saṅghabuddhir=abhyāgatam=āsi* (Fussman 1978, 41, no. 22, 12; Humbach 1980a, 108). The use of three different forms of *s-* and a complex periphrastic past tense (*abhyāgatam=āsi*) displays Saṃghabuddhi's paleographic skill and grammatical talents.

15 Initial readings of inscriptions by Dani 1985 have been revised by this author in his Ph.D. dissertation (Neelis 2001).

16 For example, E. Zürcher states that Buddhism "must have slowly infiltrated from the northwest, via the two branches of the continental silk road which entered Chinese territory at Tunhuang, and from there through the corridor of Kansu to the 'region within the Passes' and the North China plain" (1959, 22–3).

17 For biographical information and dates of early foreign translators, I rely on Nattier 2008.

References

Bagchi, P. C. 1927–38. *Le canon bouddhique en Chine, les traducteurs et les traductions*, 2 vols. Paris: Paul Geuthner.

Bandini-König, D. 2003. *Die Felsbildstation Thalpan*, 4 vols. (Materialien zur Archäologie der Nordgebiete Pakistans 6–9). Mainz am Rhein: Philipp von Zabern.

Bandini-König, D. and O. von Hinüber. 2001. *Die Felsbildstationen Shing Nala und Gichi Nala* (Materialien zur Archäologie der Nordgebiete Pakistans 4). Mainz am Rhein: Philipp von Zabern.

Banerji, R. D. and K. P. Jayaswal. 1929–30. "The Hathigumpha Inscription of Kharavela." *Epigraphia Indica* 20: 71–89.

Bloch, M. 1961. *Feudal Society*, trans. L.A. Manyon. Chicago: University of Chicago Press.

Brough, J., ed., 1962. *Gāndhārī Dharmapada* (London Oriental Series 7). London: Oxford University Press.

Buswell, R. E. and R. Gimello, eds., 1992. *Paths to Liberation: The Mārga and Its Transformations in Buddhist Thought* (Studies in East Asian Buddhism 7). Honolulu: University of Hawaii Press.

Cribb, J. and N. Sims-Williams. 1995–6. "A New Bactrian Inscription of Kanishka the Great." *Silk Road Art and Archaeology* 4: 75–142.

Dani, A. H. 1985. "The Sacred Rock of Hunza." *Journal of Central Asia* 8.2: 5–124.

Eggermont, P. H. L. 1966. "The Murundas and the Ancient Trade-Route from Taxila to Ujjain." *Journal of the Economic and Social History of the Orient* 9: 257–96.

Falk, H. 2001. "The *Yuga* of Sphujiddhvaja and the Era of the Kuṣâṇas." *Silk Road Art and Archaeology* 7: 121–36.

Falk, H. 2006. *Aśokan Sites and Artefacts: A Source-Book with Bibliography*. Mainz am Rhein: Philipp von Zabern.

Foucher, A. 1942–7. *La Vieille Route de l'Inde de Bactres à Taxila*, 2 vols. (Mémoires de la Délégation Archéologique Française en Afghanistan 2). Paris: Les Éditions d'art et d'histoire.

Fussman, G. 1978. "Inscriptions de Gilgit." *Bulletin de l'Ecole Française d'Extrême Orient* 65: 1–64.

Fussman, G. 1987–8. "Central and Provincial Administration in Ancient India: The Problem of the Mauryan Empire." *Indian Historical Review* 14: 43–72.

Fussman, G. 1989. "Les inscriptions kharoṣṭhī de la plaine de Chilas." In Jettmar, 1–39.

Fussman, G. 1994. "Une peinture sur pierre: le triptyque au stūpa de Shatial." In G. Fussman and K. Jettmar, eds., *Antiquities of Northern Pakistan*, vol. 3, 1–55. Mainz am Rhein: Philipp von Zabern.

Fussman, G. 1998. "L'inscription de Rabatak et l'origine de l'ére Śaka." *Journal Asiatique* 286: 571–651.

Fussman, G. and D. König. 1997. *Die Felsbildstation Shatial* (Materialien zur Archäologie der Nordgebiete Pakistans 2). Mainz am Rhein: Philipp von Zabern.

Hansen, V. 1998. "The Path of Buddhism into China: The View from Turfan." *Asia Major*, 3rd ser., 11.2: 37–66.

Härtel, H. and M. Yaldiz. 1982. *Along the Ancient Silk Routes: Central Asian Art from the West Berlin State Museums*. New York: Metropolitan Museum of Art.

Hinüber, O. von. 1989. "Brāhmī Inscriptions on the History and Culture of the Upper Indus Valley" and "Buddhistische Inschriften aus dem Tal des Oberen Indus." In Jettmar, 41–106.

Hinüber, O. von. 2004. *Die Palola Ṣāhis: Ihre Steininschriften, Inschriften auf Bronzen, Handschriftenkolophone und Schutzzauber* (Antiquities of Northern Pakistan 5). Mainz am Rhein: Philipp von Zabern.

Hultzsch, E. 1925. *Inscriptions of Aśoka*, new edn. (Corpus Inscriptionum Indicarum 1). Oxford: Clarendon Press.

Humbach, H. 1980a. "Hybrid Sanskrit in the Gilgit Brāhmī Inscriptions." *Studien zur Indologie und Iranistik* 5/6: 99–121.

Humbach, H. 1980b. "Die Kharoṣṭī-Inschriften aus Gilgit." *Münchener Studien zur Sprachwissenschaft* 39: 53–8.

Jettmar, K. 1987. "The 'Suspended Crossing' Where and Why?" In G. Pollet, ed., *India and the Ancient World: History, Trade and Culture before A.D. 650*, 95–102. Leuven: Department Oriëntalistiek.

Jettmar, K. ed. 1989. *Antiquities of Northern Pakistan*, 1: *Reports and Studies.* Mainz am Rhein: Philipp von Zabern.

Klimburg-Salter, D. 1990. "The Gilgit Manuscript Covers and the 'Cult of the Book.'" In M. Taddei and P. Callieri, eds., *South Asian Archaeology 1987*, part 2, 815–30 (Serie Orientale Roma 66.2). Rome: Istituto Italiano per il Medio ed Estremo Oriente.

Kuwayama, S. 1987. "Literary Evidence for Dating the Colossi in Bāmīyān." In G. Gnoli and L. Lanciotti, eds., *Orientalia Iosephi Tucci Memoriae Dicata*, 703–27 (Serie Orientale Roma 56.2). Rome: Istituto Italiano per il Medio ed Estremo Oriente.

Lahiri, N. 1992. *The Archaeology of Indian Trade Routes up to c. 200 BC: Resource Use, Resource Access and Lines of Communication.* Delhi: Oxford University Press.

McCrindle, J. W. 1877. *Ancient India as Described by Megasthenes and Arrian.* London: Trübner.

Nattier, J. 2008. *A Guide to the Earliest Chinese Buddhist Translations: Texts from the Eastern Han and Three Kingdoms Periods* (Bibliotheca Philologica et Philosophica Buddhica 10). Tokyo: Soka University International Research Institute for Advanced Buddhology.

Neelis, J. 2001. "Long-distance Trade and the Transmission of Buddhism through Northern Pakistan, Primarily Based on Kharoṣṭhī and Brāhmī Inscriptions." PhD diss., University of Washington.

Neelis, J. 2006. "*La Vieille Route* Reconsidered: Alternative Paths for Early Transmission of Buddhism beyond the Borderlands of South Asia." *Bulletin of the Asia Institute* 16: 143–64.

Neelis, J. 2007. "Passages to India: Śaka and Kuṣāṇa Migration Routes in Historical Contexts." In D. M. Srinivasan, ed., *On the Cusp of an Era: Art in the Pre-Kuṣāṇa World*, 55–94. Leiden: Brill.

Neelis, J. 2011. *Early Buddhist Transmission and Trade Networks: Mobility and Exchange within and beyond the Northwestern Borderlands of South Asia* (Dynamics in the History of Religions 2). Leiden: Brill.

Olivelle, P. 1999. *Dharmasūtras: The Law Codes of Āpastamba, Gautama, Baudhāyana, and Vasiṣṭha.* Oxford: Oxford University Press.

Rhie, M. 1999. *Early Buddhist Art of China & Central Asia*, 1: *Later Han, Three Kingdoms and Western Chin in China and Bactria to Shan-shan in Central Asia.* Leiden: Brill.

Rhie, M. 2002. *Early Buddhist Art of China & Central Asia*, 2: *The Eastern Chin and Sixteen Kingdoms Period in China and Tumshuk, Kucha and Karashar in Central Asia.* Leiden: Brill.

Salomon, R. 1998. *Indian Epigraphy: A Guide to the Study of Inscriptions in Sanskrit, Prakrit, and the Other Indo-Aryan Languages.* Oxford: Oxford University Press.

Salomon, R. 1999. *Ancient Buddhist Scrolls from Gandhāra: The British Library Kharoṣṭhī Fragments.* Seattle: University of Washington Press.

Salomon, R. 2002. "A Stone Inscription in Central Asian Gāndhārī from Endere (Xinjiang)." *Bulletin of the Asia Institute* 13: 1–13.

Shih, R. 1968. *Biographies des moines éminents de Houei-kiao (Kao seng tchouan)* (Bibliothèque du Muséon 54). Louvain: Institut Orientaliste.

Sims-Williams, N. 1989–92. *Sogdian and Other Iranian Inscriptions of the Upper Indus*, 2 vols. (Corpus Inscriptionum Iranicarum 3.2). London: School of Oriental and African Studies.

Sims-Williams, N. 1996. "The Sogdian Merchants in India and China." In A. Cadonna and L. Lanciotti, eds., *Cina e Iran: Da Alessandro Magno alla Dinastia Tang*, 45–67 (Orientalia Venetiana 5). Florence: Leo S. Olschki.

Sircar, D. C. 1965. *Select Inscriptions Bearing on Indian History and Civilization*, vol. 1, 2nd rev. edn. Calcutta: University of Calcutta.

Sircar, D. C. 1971. *Studies in the Geography of Ancient and Medieval India*. 2nd rev. edn. Delhi: Motilal Banarsidass.

Stein, M. A. 1944. "Archaeological Notes from the Hindukush Region." *Journal of the Royal Asiatic Society* 1: 8–24.

Thapar, R. 1997. *Aśoka and the Decline of the Mauryas*, rev. edn. Delhi: Oxford University Press.

Thewalt, V. 1983. "Jātaka-Darstellungen bei Chilas und Shatial am Indus." In P. Snoy, ed., *Ethnologie und Geschichte: Festschrift für Karl Jettmar*, 622–35. Wiesbaden: F. Steiner.

Vaissière, É. de la. 2005. *Sogdian Traders: A History*, trans. J. Ward. Leiden: Brill.

Whitfield, S., ed., with U. Sims-Williams. 2004. *The Silk Road: Trade, Travel, War and Faith.* London: British Library.

Zürcher, E. 1959. *The Buddhist Conquest of China: The Spread and Adaptation of Buddhism in Early Medieval China*, 2 vols. Leiden: Brill.

Zürcher, E. 1990. "Han Buddhism and the Western Region." In W. L. Idema and E. Zürcher, eds., *Thought and Law in Qin and Han China: Studies Dedicated to Anthony Hulsewé, on the Occasion of his Eightieth Birthday*, 158–82. Leiden: Brill.

Zürcher, E. 1999. "Buddhism Across Boundaries: The Foreign Input." In J. McRae and J. Nattier, eds., *Collection of Essays 1993: Buddhism Across Boundaries – Chinese Buddhism and the Western Regions*, 1–59. Taipei: Fo Guang Shan Foundation.

2

The Power of Highway Networks during China's Classical Era (323 BCE–316 CE): Regulations, Metaphors, Rituals, and Deities

MICHAEL NYLAN

The main thrust of most secondary scholarship on early roads in China has been to demonstrate that the Qin and Han system of roads was comparable in length to, if not greater than, the system of Roman roads (Figure 2.1).[1] Reliable figures for comparative purposes cannot establish the truth of such claims, however, because the early empires in China built mostly roads of tamped earth (*hangtu* 夯土), rather than of stone, stone being in short supply across much of the North China plain. As a result, the secondary literature seldom attempts proof of this ambitious claim, even if the more responsible scholars delve into the difficult question of what precisely constitutes a "road" during the classical era. Some scholars, among them Wang Zijin (1994a) 王子今 and Robin D. S. Yates (personal communication), argue that the road system in China included not only the major pounded-earth highways connecting major cities within and beyond the empire, but also the raised paths between agricultural plots, estimated to be approximately three paces wide, as roads large and small contributed to the same communications network.[2] Obviously, the adoption of such an expansive definition of "roads" greatly inflates present guesstimates for the number of miles of roads in use during the classical era, and since the early laws treat the maintenance of roads and paths quite separately, this essay employs the more restrictive definition of "road" as "highway." This decision by no means denies the great sophistication of the road system in China then. Lao Gan, a superb scholar disinclined to exaggerate, opined, "Land transportation in north China was probably as good during Eastern Han [the first two centuries CE] as it was in any period before modern times" (Lao Gan 1947, 69).

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

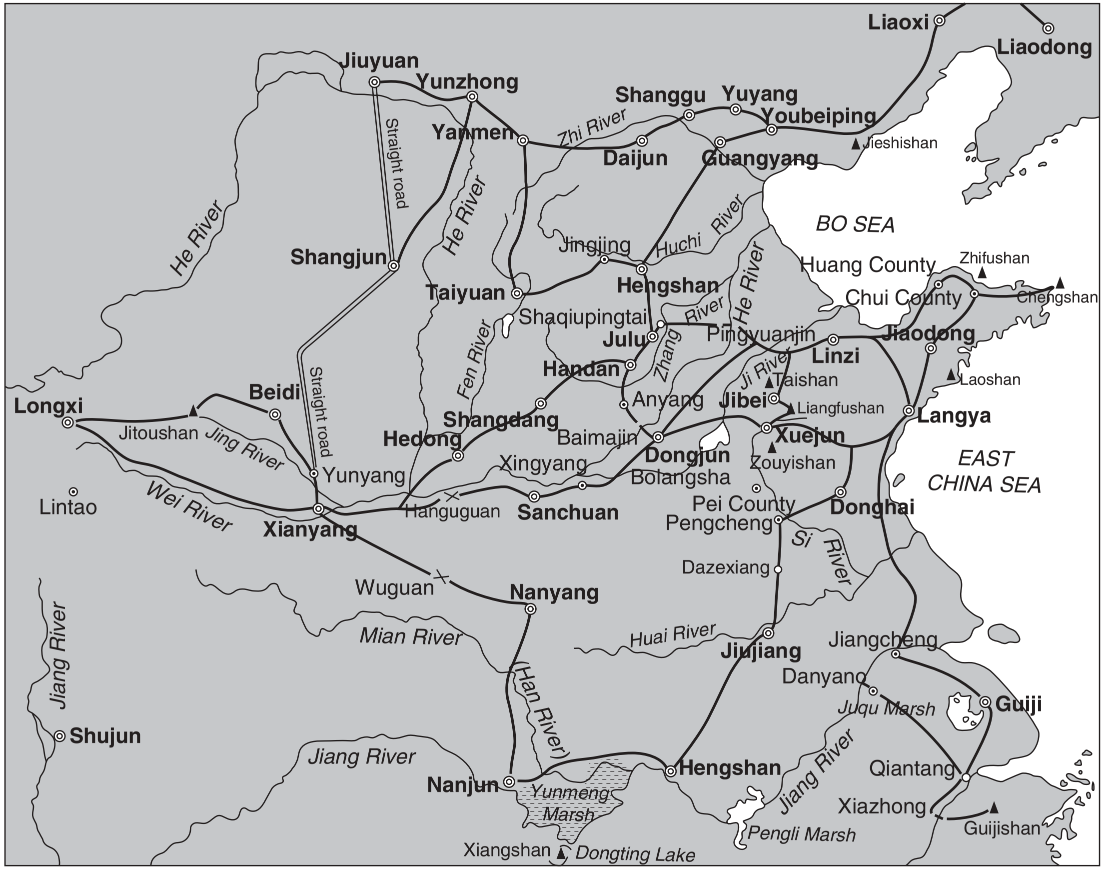


Figure 2.1 The classical road system in China.

Source: Reproduced by kind permission of Wenwu Press, Beijing.

Certainly, the accuracy with which early road maps laid out the topographic features of the land nearly equals that achievable today, as noted in the authoritative multi-volume *History of Cartography*.[3]

Six aspects of roads during the early empires command attention: (1) the basic structure of the road network itself, as revealed in newly excavated documents and sites; (2) the regulations for road-building, maintenance, and use; (3) the hierarchical road network as a key instantiation of political power; (4) the various metaphorical constructions placed on "paths" and "the Way" in political and moral treatises, with talk of infrastructure generally leading to discussions of communication and communicativeness vs. rebellion, prestige vs. exploitation and downfall, and long-term investment vs. short-term profit; (5) the consequent perception of roads as forces for good or ill in society; and (6) the many shrines erected to road builders (also to bridge- and canal-builders, given that roads and waterways are conflated in the Han sources) and the sacrifices offered to road gods.

These six topics are seamlessly related in the sources, excavated and received, but the evidence to date for each of these topics is very unevenly distributed within the archaeological and received records, making it impossible for us to precisely reconstruct all the networks of meaning once attached to highways and byways, or the probable links between the ethical implications of road metaphors and the road cults that dotted the vast territory now known as "China."[4] To take but one example, whereas Roman historians routinely make use of some 416,000 Latin inscriptions listed at the Clauss–Slaby site (www.manfredclauss/de), barely 400 inscriptions in Chinese date to the classical era, and many of these are known solely through rubbings produced over six hundred years after the fourth century CE, when recarvings and forgeries were becoming common.[5] From the last two centuries BCE, aside from brief notices about road markers at boundary lines, there survives but a single inscription relating to roads (see below). For Eastern Han (25–220 CE), a total of nineteen stone inscriptions commemorate the construction of roads and bridges and none, so far as I know, mentions road deities. This ratio of 1:1000 or less means that either the Chinese, who now regard themselves as a people uniquely in thrall to the written word, were long ago not much concerned to produce inscriptions for a wider viewing public, or they have shown remarkable energy in destroying inscribed memorial sites. However, as the number of early archaeological sites keeps accelerating at a breakneck pace, with some 30,000 Han sites discovered in the years 1949–95 and an additional 60,000 sites since the mid-1990s, we should expect breakthroughs in research on road networks and their associations. At present, sweeping generalizations about the rapidly changing field of early China studies frequently mask fragile hypotheses likely to be overturned by the next major archaeological find. That caveat must be kept in mind as we turn to our current evidence for history, philosophy, and literature (not yet separate genres in the classical era), which suggests that the early Chinese road system represented a unique network of meanings not entirely commensurable with the Roman highways.

As is well known, the early sources at our disposal invariably presuppose, if they do not explicitly mention, close connections between the body and land. Not only is the human body construed as a discrete territory, but analogies are also constructed between the territory in the realm and the king's body or the entire body politic (Nylan 2001). All fails to function, if there is insufficient proper provision of communication lines. A further intriguing feature of roads as an ideal organizing tool of classical-era society cannot go unnoticed: in theory, males were to walk on the right side of the road, while females took the left. Had this rule been enforced, roadways would have reinforced strict gender constructions in public places. However, few historians today believe that this rule was observed, adjudging it nearly impossible for imperial officials, even those operating at the local level, to mandate significant forms of gender segregation in times of rule by powerful women at court and in private life, when many women were designated heads or effective heads of households of every status (Nylan 2010a).

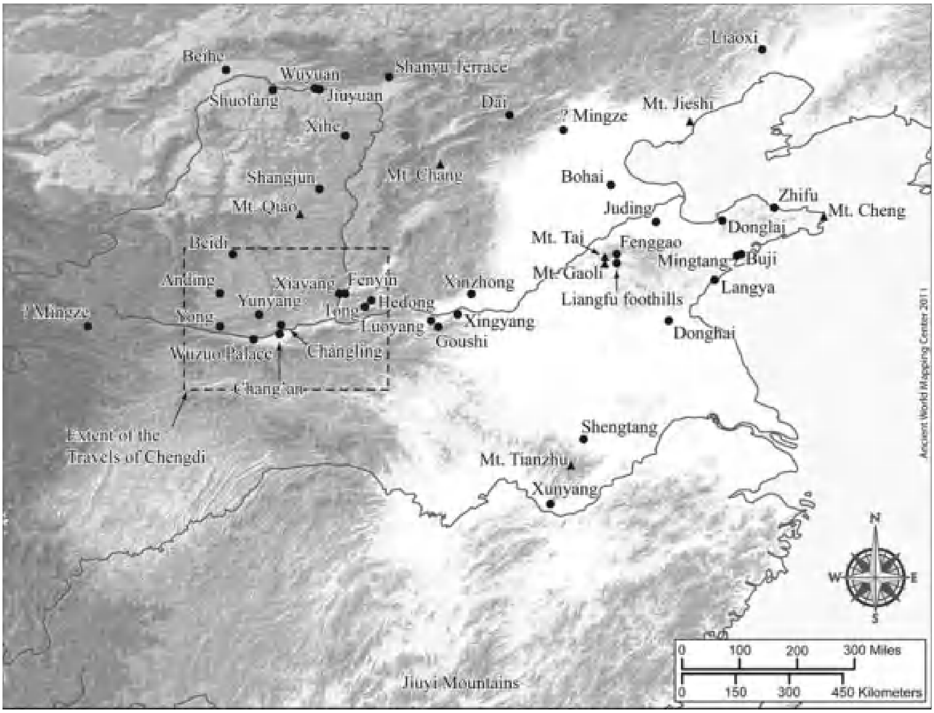
On Early Road Building and Aspirations for Centralized Order

In treatises planning the full integration of the disparate parts of the realm under the court's supervision, the two most important factors making for dynastic strength were identified as population growth and improvements in transport facilities. To conquer and to civilize a vast area required road-building on an unprecedented scale. Some historians, early and modern, have believed that the main factor in the pre-dynastic Qin state's eventual success over six rival kingdoms was the set of roads it laid out in Shu (modern Sichuan) during the late fourth century BCE, which allowed the efficient exploitation of the area's minerals and foodstuffs by the Qin court at Xianyang hundreds of miles away.[6] Then, in 135 BCE, generals and envoys were dispatched once more to impress the locals into corvée service throughout Shu and to secure the southwest as a launching pad for further conquest out to Kangju 康居 (Bactria?). In one effort reported in the first standard history, a "labor force of twenty to thirty thousand men were put to work building a road" that was still not completed after two years of grueling work. Shortly thereafter a second sustained effort yielded a long road through the Ling 零 Pass plus a bridge spanning the broad Sun 孫 River.[7] This sort of effort – fiercely debated in the histories and philosophical texts of the period – tended to mark centralizing processes in the classical era, for it enabled the forced migrations of up to 100,000 people at a time to the outlying areas.[8]

As the historian Sima Qian (ca. 145–ca. 86 BCE) noted, since the fourth century the conscious goal of centralizing states had been to increase "the multitudes of the subject populations and the numbers of carriages and horses" so that "night and day, there would be ceaseless travel."[9] Qin's First Emperor, for example, when battling the nomadic peoples, ordered the transport of basic commodities to the northern loop of the Yellow River at a cost of 30 *zhong* of grain for one peck delivered (a ratio of 192:1).[10] Given the expense involved in transport, that same First Emperor mandated that standards be used not only for weights and measures for grain but also for axle-lengths, so that the empire's carts and carriages could race along the ruts. This imperially mandated standardization of axle-lengths in 221 BCE, celebrated as an unambiguous sign of progress in the twentieth and twenty-first centuries, doubtless represented to many groups in earlier empires an expensive imposition specifically designed to expedite troop movements into recently conquered areas.

Suspiciously exact figures exist for the total of roads built during Qin (but, strangely enough, not for either Zhanguo or Han). The Qin reportedly constructed some 4,225-50 miles,[11] although it is not clear whether this figure includes all the roads built by the Qin state during the period before unification in 221 BCE.[12] Those pre-unification Qin roads would include in Sichuan alone extensive *ge dao* (閣道 or "mountain roads") and *zhan dao* (棧道, roads cut into the sheer rock face) (Figure 2.2).[13] The *Zhanguo ce* talks of the Qin extending such "trestle roads" for 1,000 *li* into the southwest.[14] At best, such seemingly precise Qin figures represent but rough estimates devised by historical geographers. After all, over long centuries many "reliable" early sources were repeatedly "corrected" in light of more modern topographical knowledge (Nylan 2010b). Furthermore, except for passages in the specialized "Treatises on Geography," the received literature prefers to talk in terms of "hundreds," "thousands," or even "myriads" of leagues, whenever great distances are involved. Still, some idea of the magnitude of the early road system

Figure 2.2 Stretch of trestle road (*zhan dao*) cut into the rock face, Sichuan.
Source: Photograph courtesy of Robert E. Harrist, Columbia University, New York.



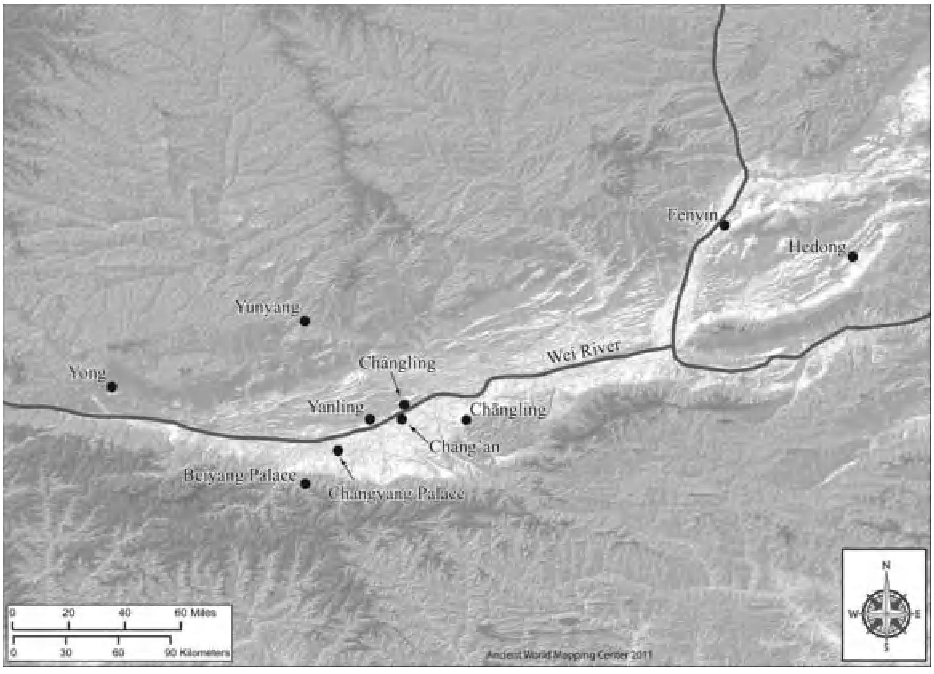


Figure 2.3 The progresses of Han Wudi (r. 141–87 BCE) (above) and Chengdi (r. 33–7 BCE) (below). Note that all of the latter's travels are well within the greater metropolitan area of the Western Han capital (indicated by the box in the upper map). *Source*: M. Nylan with the assistance of the Ancient World Mapping Center, University of North Carolina, Chapel Hill.

linking the administrative seats and economic centers of the day can be gained by marking on a map the routes of successive imperial progresses outside the capital (some of which traveled to the frontiers in the northeast and southeast), as well as the postal, relay, tally, and passport systems (Figures 2.3a and 2.3b).[15]

By design, the stepped hierarchy of the classical-era roadways reflected the supposedly "natural" hierarchies prevailing in human society, with the Middle Path of the widest and most level "highways" (*chidao* 馳道) reserved for the sole use of the emperor, the political and religious "center" of the realm and the physical embodiment of the Middle Path.[16] An early account ascribed to the official Jia Shan 賈山 (ca. 175 BCE) claims that these imperial roads of tamped earth – tamped absolutely smooth with metal or wooden pestles – were faced with dressed stone in many areas and 50 Han paces wide (or 69.3 m.).[17] The sides of the *chidao* were lined at regular intervals with pine trees, valued both as auspicious evergreens and for the welcome shade they afforded. Purportedly, these grand imperial roadways extended far into the areas now known as Shandong and Zhejiang. Modern historians used to scoff at Jia Shan's account, until sections of such impressive roads were found at several places in the capital regions.[18] Recent excavations show that the main thoroughfares in the two Han capitals averaged between 45 and 70 m wide in Chang'an and 40 m in Luoyang (Wang Zijin 1994a, 256–8). Presumably the locals dismantled many of the best roads during periods of disorder so as to retrieve the dressed stones, because permanent building materials were in short supply across much of the North China plain.

In addition to the *chidao*, a great number of elevated enclosed roads and roads between high palisades or palace walls (*fudao* 復道 and *yongdao* 甬道, respectively)[19] were built for the exclusive use of the First Emperor and the members of his inner circle. In 212 BCE, some 200 of these were consolidated into a single system in the capital district and its immediate environs, so that the emperor's movements could go undetected (SJ 6.257; Nylan 2007). The attention garnered by such a spectacularly secret network of roads merely heightened the sharp contrast that the imperial network presented to the lesser roads of the empire, especially as the steeply graded hierarchy of roads paralleled the strict urban hierarchy outlined in Qin and Han policy statements, which envisioned the capital region looming above the capitals of kingdoms, commanderies and local centers at the county level (Pirazzoli-t' Serstevens 2010). Evidence that the full integration of the empire was nonetheless a slow and painful process comes from casebooks from early Western Han, which plainly allude to barriers and checkpoints at the borders between "kingdoms" in the empire (i.e., units under indirect rule) and the commanderies and counties under the court's direct rule.[20] Apparently, distinct legal systems were employed in the two sorts of units, at least during the early decades of the dynasties.[21]

On Road Regulations

Though generally perceived as natural and organic systems, the roads, like the waterways, presumably required constant human intervention and adjustment to insure their functioning. Hence the imposition of an unambiguous hierarchy of main thoroughfares to secondary paths, as well as routine checks on the number and quality of contacts between units. In this life and the next, there were to be passports, tallies, rations for official travelers, regular checks at passes, boundaries, relay stations, and so on.[22] Figure 2.4 shows one Zhanguo example of a decorative tally awarded to a merchant by the pre-unification Thane of Chu. Nor can one over-estimate the role of the road system within the sumptuary regulations (called "carriages and robes" for short) so dear to state planners and well-born families in society. Under the old aristocratic system inherited by the early empires, nobles had proudly displayed themselves in outings, excursions, and progresses to demonstrate their awesome authority to "those below"; under the imperial administration, the road system continued to support the ties between sumptuary regulations and display culture (Figure 2.5), even as new elaborations and refinements were continually added (Nylan 2005).[23] The regulations required high-ranking officials and members of the nobility to travel on the main highways in carriages, whenever possible, rather than on horseback, in order to uphold the graded system of ranks and honors.[24] And chariots remained one of the key status-indicators in death, even as in life.[25]

Figure 2.4 Zhanguo example of a decorative tally awarded to a merchant by the pre-unification Thane of Chu.
Source: Photography courtesy of Lothar von Falkenhausen, from von Falkenhausen 2005.

Judging from an edict of 21 BCE, those of ministerial rank were specifically charged with the duty to see that the empire's primary system of roads remained at all times "passable," for unless grain and cash crops moved swiftly along the arteries of empire, the central government's efforts encouraging agriculture would likely come to naught. In particular, the Minister of Agriculture was to oversee the speedy transport of grains and provisions, guaranteed by continual road maintenance, in the provinces outside the central part of the empire, and especially in frontier zones.[26] Small wonder that various laws of the classical era cast road maintenance, along with wall-building and repair, as part of the "routine [corvée] work" (SHD A 64), for which the local Controller of Works and the Builder together annually estimated the size of the conscript labor levies needed. Regular clearing of the roads, as well as the dangerous passages, was to occur every year in the ninth month (i.e., early winter), while re-tamping and facing occupied farmers during much of the tenth and last month in the calendar year (SHD section G). By statu-

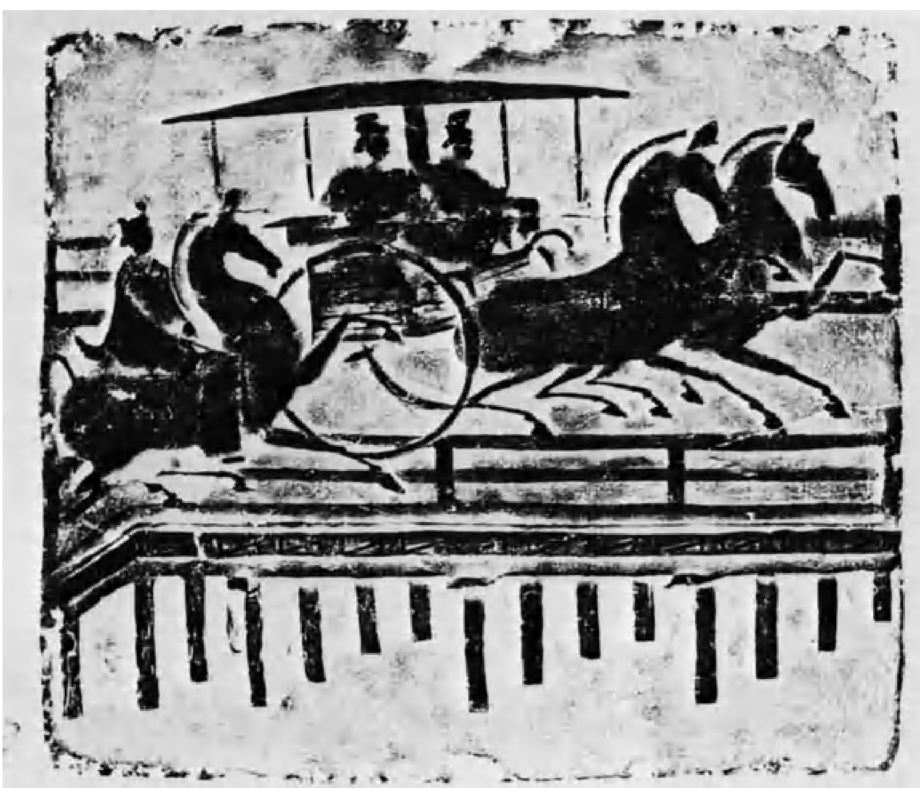


Figure 2.5 Rubbing of a typical pictorial stone showing a carriage procession, excavated in 1956 at Chengdu Tiaodenghe and now in the Sichuan Provincial Museum (41 cm high × 47.3 wide). Second century AD (Eastern Han) date.
Source: Author's personal collection.

tory law, road maintenance had also to be carried out whenever "holes and bad places" made it "impossible to proceed" (SHD section G).

Thanks in large part to several caches of finds of legal documents, the most important being those from Shuihudi 睡虎地 (*terminus ad quem* 217 BCE) and Zhangjiashan 張家山 (*terminus ad quem* 186 BCE),[27] modern historians can be sure of the intensity of the elite's preoccupation with roads, communication, and transport as vital to the "great enterprise" (*da ye* 大業) of empire. Those laws of the classical era carefully defined the meaning of "travelers," in contrast to "people of the house" or "householders" (*shiren* 室人, *hu ren* 戶人) (SHD D 180–1). As noted below, even the gods were divided into parallel categories of traveling gods and those staying at home. The extant strips from Shuihudi and Zhangjiashan make continual reference to these two opposing categories, because travelers were exempt from the mutual responsibility laws, so long as they were away from home when criminal plots were hatched.

Detailed stipulations specified the duties, rations, and acceptable limits of travel for coachmen, guards, messengers, envoys on official business, and even for horses and oxen as the two main draught animals besides humans.[28] The laws gave elaborate provisions for the state guest houses placed at intervals along the major highways.[29] Obviously, the dynasty hoped to control the flow of people, things, and ideas as much as possible, lest too much commerce and too much movement disrupt subject populations engaged in sedentary agriculture, the basis of stable rule within civil society. Statutes covered conduct at the passes (*guan* 關), formal city markets, and "control points" between administrative units, and moreover the infantry conscripts guarding posts and passes.[30] Border marks (*feng* 封) between fields (apparently small mounds of earth about 1 m high and 1 m per side) and large tracts of land could not be moved on pain of severe punishment for "thievery" (*zei* 賊), a category of crimes comprising all "violent and destructive behavior."[31] As guarantees were required to do business and tallies or passports to pass through established barriers, many statutes deal with how to detect and then dispose of counterfeit documents. For an officer to accept them as genuine merited heavy fines.[32]

Predictably enough, the regulations for an elementary postal or courier system in Qin and Han (called *you* 郵 or *zhi* 置) are equally detailed. One sample law from Shuihudi reads:

> When horses of the courier service are used, they are given one feeding of grain; when they return, they are again given one feeding. Always eight horses are to be [fed or kept (?)] together. When used repeatedly, the horses should be given one feeding without letting a day [of rest] go by. When [an officer of the central government] uses horses from the prefecture, and these have done heavy work, they should again be given one additional feeding of grain.[33]

Such courier horses, used singly or as teams in relays, could cover long distances in no time. One figure for Han times says that a relay sent at noon from Chang'an would arrive at Dingtao (a distance of 135 *li* or some 40 miles) somewhere between 3:00–5:00 p.m. Six hundred *li* (i.e., some 200 miles) in one day was the norm for special delivery items.[34] But in a major crisis, three different sets of relay riders were expected to cover 1,000 *li* in twenty-four hours.[35] Post-horses (*teng* 腾, literally "racers") were "warranted" when they carried legal documents and the sealed evidence for criminal cases, and possibly for important civil suits as well.[36] One extant Statute on Agriculture decreed that local officials must quickly alert the court to news of local disasters (especially rains, droughts, violent winds, or hordes of insects or rats), presumably to co-ordinate famine relief. Rebellions and upheavals were reported promptly. Prefectures near the capital were to have special runners deliver this sort of information while the outlying prefectures used the courier service.[37] Unfortunately, neither the standard histories nor the excavated sources allow us to surmise whether and to what degree this system could be utilized for private purposes. A single early statement says that during the first years of Eastern Han, private use of this service was forbidden, but since that prohibition was announced during a civil war, it may have had little force in peacetime.

Similarly precise rules governed the transfer of goods (not documents) from one office to another. Large shipments of grain, silk, and metal – the primary currencies of the time – were constantly being shipped from one part of the empire to another, and certain regions within the empire had to deposit quotas of specialty items at designated sites as well.

> When offices transfer goods to one another, they are to report in writing the year for which these goods were canceled in the accounts. The recipient [office meanwhile] accounts it as entered. When there are transfers during the eighth and ninth months [of winter], the distance of the place where they are transferred is to be calculated. If it is not possible to arrive there before [the closing date of] the accounts of the place where the goods are transferred, shift the account to the next year. The accounts must not be confused with one another. (SHD A 36)

Meanwhile, officials conducting public business away from their posts could always avail themselves of government transport or draught animals, so long as they provided the proper tallies and credentials for inspection as they passed through a territorial unit.[38]

> Officials of the general offices, rank-holding officials, as well as Overseers of detached offices, each have one cook … For ten men, there will be one carriage and an ox, with one oxherd. Assistant Clerks who have been assigned to the general offices have one cook for ten men; for fifteen men one carriage and an ox, with one ox herd … Minor officers that have no overseer will be given a servant, a carriage, and an ox, based on this rule. (SHD A37)

In severe crises officials might sometimes be reduced to hiring private carriages (*si che* 私車), which practice they later had to justify in order to receive reimbursement. In mundane matters, officials used their allotted carriages and oxen to pick up their monthly food allowances from state granaries and storehouses, as well as the rations allotted for the draught animals in their service. The laws provided for the regular upkeep of carriages and animals, with one law stipulating even the amount of grease and glue to be used on government property,[39] and a second, the leathers and textiles suitable for replacement parts.[40] A regular allowance for grease and glue was made to local officials for just such purposes. But woe betide the unlucky official whose borrowed carriages sustained some damage, regardless of the reason,[41] for if a borrower failed to repair a damaged cart or a carriage, not only he but also "the [lending] official and the head of office" were all derelict in their duties, according to the laws.[42] A worse fate, if possible, awaited the official whose assigned horses or oxen died while in his care. The hides, horns, and bones had then to be handed over to a superior officer for inspection, along with detailed reports on the incident.[43] Wounds to horses belonging to the dynasty (literally, "the ruler's horses") were punished with great severity also, with each tear in the animal's hide calling for a fine somewhere between one metal shield and one full suit of armor.[44]

Lest the foregoing leave readers with the mistaken impression that all or nearly all roads were publicly built and maintained during the Qin and Han empires and that all transport systems were maintained under the direction of the imperial administration, the present evidence suffices to posit a mixed public/private system for road construction, road maintenance, and haulage during the early empires in China, as well as a mixed public/private postal service. Despite the truculent attitude that succeeding realms adopted toward merchants and other itinerant professions, by the fourth century BCE the regional economies in the area we call "China" today were so densely connected that the so-called great families could make hefty profits by setting up private courier stations and transport services, if they were careful not to abuse their statutory privileges.[45] Already in Qin times (221–210 BCE), for example, Xiahou Ying 夏侯嬰 owned and operated a private haulage service (Loewe 2000, 596–7). Far from jeopardizing his status, Xiahou Ying was then named Superintendent of [Imperial] Transport early in Western Han. The Han dynasty yielded to the inevitable when it put an end to taxes at barriers and bridges, prompting the rapid rise of rich traders and great merchants travelling all around the empire distributing their wares to every corner so that everyone could buy what he wanted (SJ 129.3254, 3279). Quite plainly, the empire did not want its subjects living deep in river valleys to be cut off from the officials to whom they owed their taxes (HHS 76.2549), even if the imperial system tried its best to minimize the transportation costs of grain and other bulky items.

The complexities of trying to conform to and promote the imperial will explain the continual references in the early standard histories to the problems of constructing space, reconfiguring alien territory, and disciplining its peoples, so that an orderly, profitable range of exchanges could take place between groups and regions. The poetry and prose of the period often emphasize the loss of life and the other resources expended in building roads whose repair then took up two to three months of the poor farmer's time during winter. Corvée units labored under the supervision of low-ranking local officers in charge of carriages, horses, feed, protection, postal servants, and other transport, while the unenviable task of maintaining the roads as a visible symbol of the sociopolitical hierarchy fell to their superiors in the counties and commanderies.[46] At the same time, real enthusiasm for directing such back-breaking work left local officials liable to criminal indictments as "harsh officials." As time went on, the grave difficulties associated with the maintenance and extension of the road system came to symbolize the inherent difficulties of instilling a semblance of justice and public order within the empire-at-large. The excavated text *Wei li zhi dao* ("How to be a Good Official") talks of working night and day (興之必疾, 夜以接日) on this very kind of project, in the hopes of securing timely recognition for one's efforts (SHD 288).

Meanwhile, bureaucrats at every level were ever mindful that religious movements and local rebellions threatening the ruler's sway (not to mention epidemics) utilized the same highways, as suggested by the following passage on Xiwangmu 西王母 (the deified Queen Mother of the West):

> In the first month of the fourth year of the Establishing Peace era (Jianping, 3 BCE), the population was running around in a state of alarm, each person carrying a manikin of straw or hemp. People exchanged these emblems with one another. … Large numbers of persons, amounting to thousands, met in this way on the roadsides, some with disheveled hair or bare feet. … That summer the people came together in meetings, both in the capital city and in the commanderies and kingdoms. … They also passed around a written message, saying, "The Mother tells the people that those who wear this talisman will not die. Let the unbelievers look below the pivots of their gates, where there will be white hairs to show that this is true." (Wang Xianqian 1900, 27C(a)/22a)

Therefore numerous laws regulated the types and conditions of exchanges in places where travelers tended to congregate, in support of the fine web of surveillance measures engendered by the formal "mutual responsibility groups" that functioned mainly outside the walled cities and the established checkpoints. In a concerted attempt to turn a potential liability into a strength, the rulers, by one idealized account, ordered the promulgation of new edicts, ordinances, and statutes to take place during the first ten days in every month in public places (i.e., outside administrative offices, on major highways and crossroads, at the gates before administrative seats, and so on), with the result that even casual passersby, literate or not, might be alerted to the reach of the state.[47] Perhaps not surprisingly, then, the earliest Daoist religious organizations, those of the Celestial Masters in Sichuan ca. 150 CE, set up parallel organizations modeled on the government-run highway hostels (*ting*), even as they challenged the final authority of the Han state power.

Moral Associations of Highways and Byways

The "path" or "way" or "road" is unquestionably the most important metaphor in the early received writings composed in classical Chinese (Graham 1989, passim).[48] With life conceived as a journey, the Dao/Tao was defined as a set of orientations toward the social roles and more theoretical issues which a person brought to and then acquired in life, orientations that could become "second nature" to the mature person and perhaps also persist into the afterlife, there being no consensus on whether the living and the dead traveled distinct paths.[49] A major thinker, by definition, proposed to rulers and peers a distinctive Way, an artful "technique" fashioned to supplement a person's natural defenses against ill-conceived initiatives and time's relentless depredations.[50] Each Way called for a thoroughgoing conversion of the person's entire being and bearing, achieved through single-minded dedication to employing the existentially appropriate modes of operating in the social world.[51] And since human beings either acquired true humanity or descended into bestiality because of the quality of such interactions, with each strengthening certain proclivities, success in nearly any sort of endeavor was equated with "getting through" (*tong* 通 or *da* 達), while "failure" and "incomprehension" represented "coming to a dead end" (*qiong* 窮).[52] Significantly, classical Chinese does not distinguish between the verb "to be lost" and the verbs "to suffer loss," and "to die" (*sang* 喪). To talk of wayfarers and sojourners, then, was to conjure alienation and sorrow, diminishment and befuddlement. Moreover, the ancient script preserved the notion that each choice in action was a virtual crossroads, as seen in the form ╬ for the word *xing* 行 ("behavior" or "deed"). Legend had Yang Zhu 楊朱 (370?–319? BCE), an articulate proponent of the proposition "every man for himself," weeping loudly when he came to such a crossroads, since Yang, as a sage, knew better than most that the most minor divergences from the straight and narrow can prevent people from finding the shortest path to their chosen destinations.[53]

Supposedly, when the gods favored a person, they "cleared the way" for him and his adherents, removing all obstacles in his path (*Zuozhuan,* Xiang 31.9). Thus the "straight road" functioned as metaphor for all blessings (Lewis 2006, 101). The most authoritative writings won praise precisely for never "swerving aside" from the true path of cultivation, learning, and knowledge. By a well-worn pun, the *jing* 經 ("classics" or "canons") became the *jing* 徑 ("shortest routes") to those valuable ends. In matters pertaining to health and sexuality, road metaphors were scarcely less ubiquitous. Proper circulation of blood and *qi* within the body, conceived as a transport system of roads and waterways facilitating exchanges between different organ systems, supposedly insured health by promoting a balance among and interplay of forces, on an analogy with interstate diplomacy in the body politic (Nylan 2001).[54] Accordingly, the main goal of medical practice was to "keep the roads of communication between domains open" via techniques like acupuncture and moxibustion (*Zuozhuan*, Xiang 31.9). Sexual contact also represented "communication" (*tong* again), as did penetration of any sort (e.g., percepts and insights). Indeed, the five senses of vision, hearing, taste, smell, and touch were dubbed the "Five Roads" (*wu lu* 五路). As ill-health (mental or physical) resulted from "leakage" of the vital fluids departing from assigned routes, medical tracts sought to ascertain the correct pathways of blood and *qi* in the belief that they were ultimately not only intelligible but also amenable to human intervention.

While many road metaphors conveyed the advantages to be had from traveling a well-planned or well-trodden path, those same metaphors acknowledged the

Figure 2.6 The Straight Road (still in use today) near the old Qin capital of Xianyang and Western capital of Chang'an.
Source: Photograph by M. Nylan.

potential for roads in life to be either good or bad, depending on whether benefits or disadvantages came in their wake. Good roads, by definition, were roads whose construction and upkeep required relatively few outlays, typically because they conformed to the natural lay of the land. A prime example of a bad road was the infamous Straight Road – whose auspicious name mocked the awful reality – linking the capital with the northern frontiers (Figure 2.6) along a route some 1,800 *li* or 600 miles long. That road, in cutting through mountain ranges, had exacted a terrible toll on human life, not to mention disturbing the homes of the gods.[55] Roads had the potential to confer great benefits on rulers and the people, moving scarce goods to once isolated communities. At the same time, they could bring contagion and a host of social ills, including mass hysteria, banditry, and marauding troops.[56] Relay stations and state guest houses were known to be places where ghosts, as well as strangers, assembled (HHS 81.2680–81; FSTY 9/10a-b), and roads built mainly to facilitate trade in exotic luxuries signaled the court's excesses and the corrupt conflation of public and private interests (Chin 2005).[57] This fact notwithstanding, the steady extension of road networks during the early empires meant the salutary transfer of ever more areas from the category of dangerous "wilds" (*ye* 野 or *xing* 行, on the road) to that of "domesticated" spaces (*gong* 宫) in both the spirit and human realms.

The figure of Great Yu (tradit. third millennium BCE) looms large in the world of roads. Yu is the primeval flood-queller, but Chinese mythology also portrays him as the culture hero who first laid out the major roads in the Nine Provinces in China, establishing precedents for all later polities. Here is a standard description of Yu's role drawn from the *Zuozhuan*, one of the Thirteen Classics associated with Confucius (551–479 BCE) as author or editor:

> Far-flung were the tracks of Yu
> Charting out Nine Regions.
> He laid out and opened up Nine Routes.
> For mankind, beds and temple chambers [for repose],
> And for the beasts, luxuriant grasses:
> Each and every one got their place of abode,
> Because their qualities and functions were not confused.
> (Lord Xiang, year 4)

Since a culture hero's provision of roads created civilization itself, and the roads and footpaths in the early empires often formed striking rectilinear grid patterns running north–south and east–west,[58] the system of primary and secondary roads – like the patterns in woven cloth – stood in for any notable regularities executed on a grand scale by worthy powers-that-be, who were themselves deemed to be in communication with the unseen powers.

On Road Deities and Road Cults

Since 1976, more than twenty sites have yielded what are known as Almanacs or Daybooks (*rishu* 日書).[59] These daybooks list the auspicious and inauspicious days for many activities, especially travel outside one's own county; stipulate the directions a traveler should avoid on a particular day; detail the magic rites designed to insure a safe journey; and list the names of sacrifices to be offered to local deities and those higher in the pantheon. For example, Strip 31 from Jiudian 九店 gives the "outside sunny days," days described as "favorable for going out to do business, going out to the four quarters and into the wilds to hunt." Strip 32 cites the "outside harmful days" on which the traveler meets with "rebels and thieves" or wars. Strip 33 lists the "outside cloudy days" deemed good for offering sacrifices and receiving goods from abroad, but inauspicious for trading and long distance trips (Lai Guolong 2005; Kalinowski 1998–9). With the rites and sacrifices, the longer were the distances, the more elaborate the rituals and sacrifices conducted at one of several locations: "outside of the gates" (*bangmen* 邦門), meaning, at the passes or walls; at a gate of a town or city (*yimen* 邑門), or at major boundaries of any sort, including at mountains and rivers. These sacrifices were offered at the liminal points of departure, in other words, wherever the domesticated spaces began to yield to the wild.

The daybooks offer indisputable proof that travel was terrifying to those of the time: although the sixteen published excavated daybooks do not all adhere to a single system, altogether they proscribe travel on a stunning 355 days out of 365 days in the calendar year. A typical almanac entry reads, "On a day of 'outside harm' (*waihai* 外害), you should not travel. When going to the countryside [on

Figure 2.7 Wooden tablets (ca. 300 BCE) representing road deities, as identified by the grave inventory, from Baoshan, tomb 2, strip 249.

such a day], you certainly will meet bandits or encounter military actions."[60] Merely to take to the road – then quite rightly associated with infectious diseases, bandits, the long arm of the law,[61] and all manner of unforeseen calamities – was to confront, if not actually to embark upon the arduous journey toward the realm of the dead.[62] Notably, offerings to the road gods were included in some healing ceremonies, and exorcism was required before setting out on a trip. The para-canonical *Kong congzi* likewise instructs travelers to offer libations to the tablets (of deceased ancestors) before proceeding into the residences or inns where they will stay the night. It mentions additional "shrine tablets" on the left of the road, in juxtaposition with the altars to the earth located on the right. Clearly, travelers had to propitiate a host of different powers, if they hoped to avoid disastrous encounters on the road, all the more so because it was highly inauspicious to die on the road (*Zuozhuan*, Zhao 4.6).[63] So far as we know, the very first literary pieces to celebrate the joys of travel and sightseeing appear in the post-classical era, during the fourth century CE.[64]

In this connection, a particularly interesting item is a classical-era grave inventory from Baoshan 包山, Tomb 2, strip 249, listing as "travelling implements" (*xingqi* 行器) the ritual paraphernalia needed to make the Five Offerings (*wuji* 五祭) (Figure 2.7), since that tomb inventory probably alludes to everyday practices involved in equipping the tomb occupant for travel to his afterlife abode. The very shape of the tablets, as well as the script used on them, made the wooden tablets the instantiation or temporary seat of the deities to whom the offerings were made (Yang Hua 2007, 118–34).

The sources describe several procedures used in such road offerings. In one account, a local dignitary, the commandery head, offered a sacrifice to the Road on

Figure 2.8 The apotropaic Pace of Yu diagram.

behalf of an honored guest in the following way: his men saw to it that the soil was piled on the road to signify a hill, presumably since mounds served as boundary markers and signified obstacles, and a tablet to represent the spirit was then made of straw and thorns (why thorns we do not know). After wine and dried meat were offered to the god, a farewell feast was held at the roadside for all who came to see the traveler off. Finally a carriage or cart was run over the mound and driven an unspecified distance in the direction of the intended journey, acts which indicated that no impediments would stand in the traveler's way. A second account, from an Almanac, describes a more mundane version of the send-off (this time without a farewell party): the traveler, after leaving the city gates, is to stop and perform the apotropaic Pace of Yu that inscribes at once the North Star and a magical diagram (Figure 2.8). Then the traveler is to call upon the same great demi-god Yu[65] and draw five lines on the ground. Finally, the traveler picks up consecrated soil from the center of these lines to put inside his robes, so as to safeguard him on his way. A third-century text dating to just after the Han collapse would have the traveler instead use a sword to mark out a square in the earth; miniature walls surround that square, which are then secured with metal bars (*Baopuzi,* "Wai" 3/43). In nearly all the cases that specify a sacrificial animal for the offering, a dog was slaughtered, perhaps because dogs guard the house. Sometime during such ritual processes, a prayer was intoned to seek the blessings of various gods for a safe journey. We are fortunate that there survives one splendid example of prayers for the road, composed by a high official who earned extra money by composing eulogies and prayers for his peers. Here is how the prayer (in slightly abbreviated form) reads:

> In a felicitous year and a good month, an auspicious day and a fortunate hour, may you be very happy when you set out in the light of dawn … May you mount the chariot, and have the road open out before you. May the Wind Monarch and the Rain Legions wet down the road [reducing the dust]. May the "sun-catching mirror" seek blessings. May Chi You [the god of war] ward off any weapons [you may encounter]. May the Green Dragon travel at your side. May the White Tiger help you advance. May the Vermillion Bird [the sun] lead you. May Xuanwu [a god of night and darkness, which takes the form of a snake wrapped around a turtle] be your companion. May Gouchen [the North Star] reside in the middle [of the sky] and subdue the four quarters. You now go to a neighboring land. May you have joy without end. (Cai Yong, "Prayer")

Received and excavated, the extant sources raise quite as many questions as they answer. Do the road deities occupy two separate, if parallel, levels in the pantheon, as astral deities and as household deities? This might have been the case because, while the road deities are worshipped annually by the emperor at the New Year's exorcism, they are also worshipped by local householders as the occasion demanded; moreover, in one excavated manuscript the household road deities are definitely grouped with the gods of earth. The denizens of the human and divine realms alike are divided into "travelers" and those of fixed abode. Even the dead ancestors, at least for some purposes, fall into two categories: those who died at home (*shi gui* 室鬼 or "house ghosts"), and those who died outside (the *wai gui* 外鬼), with special propitiations due to the ancestors unlucky enough to die and be encoffined far from home.[66] A related question arises: what is the relation between the road deities and the Director of Fate, if the first are usually described as earth gods and the latter a sky god? One passage at least, that from Ying Shao's *Fengsu tongyi* (comp. ca. 203 CE), links the Director with travel:

> Now some among the people only sacrifice to the Director of Fate (*Siming* 司命). They carve a piece of wood into a human form 1.2 Han feet in length [i.e., the size of an imperial rescript]. *When they go on a trip, they pack it in the case; and when they are at home, they make a special room for it alone.* In the Qi territory [modern Shandong], they especially honor it. In Yujun 餘郡, Runan 汝南 [modern Anhwei], this god also has many devotees. In each place they offer cult to this deity with a pig, and they perform the sacrifices in the spring and autumn months. (FSTY 8/9b)[67]

Nor can we be confident in the modern day of the identity of those allowed to make offerings to road gods. On the one hand, the excavated Almanacs were all made for officials, but their prescriptions seem so generic that it is hard to imagine the powers-that-be in the classical era actually proscribing participation in these cults by commoners (especially merchants). For who else but merchants would be likely to consult the "Instant Guide for the Great Yu" (*Yu xuyu* 禹須臾) before making short business trips? The most important philosophical Qin and Han compendia speak casually of "the people" setting out offerings in spring and autumn to the Spirit of the Road (HNZ, vol. 1, 161). The problem is that the identity of "the people" shifts over the course of the classical era from the king's men to commoners, leaving the proper connotations of the term in considerable doubt. Countering these excavated and received materials, the received recensions of the *Rites* classics insist – perhaps in defiance of prevailing custom – that no commoner has the requisite standing ever to offer sacrifices to the Road.

Two unanswered questions are still more fundamental: why do road offerings appear under so many different names in the early sources? and, who are these road deities anyway? The early sources supply at least eleven different names for road offerings, names that almost certainly are more than dialectical variants: *lei* 類 (literally, "[by] type"); *chu* (出, literally, "going out"; *zu* 祖 (usually "ancestor"), *shi* 釋 ("deposit," "release," or "cleansing"), *ba* 軷 ("crossing the mountain"), *dao* 道 ("road"), *xing* 行 ("travel"), *lü* 旅 ("travel"), *yin* 禋 ("burnt offering"), *jiao* 郊 ("extra-mural suburbs"), and *ma* 馬 ("horse").[68] To these, one must add sacrifices like the *luo* 駱 ("sacrifices to mark boundaries") and the names of specific practices in the popular liturgies, such as the aforementioned Pace of Yu (Schindler 1924; Xu Zhigang 1984). The sources also list at least two deified humans who became major objects of cult, each a son of a ruler or minister.[69] Other traditions, as we have seen, speak instead of sets of two deities, one administering the tame spaces and a partner overseeing the wilds.[70] And then there is the range of local gods who must be appeased whenever roads are built and, apparently, whenever a traveler crosses into a local god's assigned territory.[71] Always, these local gods who are objects of road cults included among their numbers hungry ghosts, since "When a ghost has a place to return to [to be fed], it does not become a baneful demon" (*Zuozhuan*, Zhao 7). Nor should we forget that the local officials who built local roads, especially in hazardous areas, were likely to become gods themselves for one of two reasons: either because they did the community so much good or because they inflicted so much harm.

I will now briefly discuss three inscriptions commemorating famous road-builders, who quickly became recipients of cult, as the early gazetteers attest.[72] Over the course of Eastern Han, several styles of eulogies developed in tandem with inscribed memorial stones. The extant examples, perhaps not coincidentally, are concentrated in Yizhou (i.e. modern Sichuan) or its environs, and quite a few are dedicated to men who built or repaired roads and bridges (Meng Mo et al. 1989, 57). Two of the nineteen extant Eastern Han stele inscriptions I give below; both, despite having somewhat lengthier contents than most, are entirely typical of the genre. One of the two (Table 2.1) describes a fairly low-ranking army officer, one Zhao Menglin 趙孟麟, who improved the area's roads and consequently the local population's standard of living.[73] Note that the man who commissioned the inscription seeks to be commemorated along with Zhao since he has brought to the viewer's mind the deeds of the honored dead.

A second example, which details events in 63 CE in the Hanzhong area (modern southwestern Shaansi), demonstrates the scale that such an undertaking could

Table 2.1 Stele commemorating Zhao Menglin.

羊竇道	The Yangdou road
舊故南上高山下	formerly ascended in a southern direction and descended from the high mountain
入深谷	And entered a deep valley;
危駿[峻]回遠	Dangerous and steep, winding and distant.
百姓患苦	The common people suffered greatly.
永初六年	In the sixth year of the Yongchu [112 CE] reign period,
青衣尉南安趙孟麟更易	The Commandant of Qingyi, one Zhao Menglin of Nan'an, modified the road
由此道濱江	He led this road to the border of the big river.
平澤無道賊	To the even marsh, there were no robbers on the road.
差近廿里	The distance of the road was almost 20 *li*.
騎馬儋負	Those on horseback, those carrying loads on both shoulders,
[老][74]弱得過	and those old or weak were able to cross,
除去危難	after the peril was eliminated.
行人萬姓	Among the travelers and the myriad surnames
莫不蒙恩	there were none not indebted to the gentleman
傳于無窮	whose [reputation] will be transmitted without end
维世青衣尉趙君	In our age, the Guard of Qingyi, one gentleman Zhao,
故治所書佐郡督郵	Who formerly had served as an Accessory Clerk of Documents and as a Commandery Investigator.
随牒除到官六日	On account of his receiving his assignment, he had been promoted to and arrived at the bureau [in Qingyi] for six days
郡召守蜀鐵官長	When the commandery appointed him as the brevet head of the Iron bureau in Shu,
積四月	After accumulating four months of service there,
治狀分明	the effectiveness of his rule became evident.
徙守成都	He was then transferred to another brevet post in Chengdu.
今復還歸	At present, he has returned
尉官羊竇	to his original post as Guard of Yangdou.
故道高危	The old road was high and dangerous.
君虔穿崖易道	The gentleman valiantly bored a tunnel through the precipice to move the road,
盜賊徽止	and the thieves were then stopped.
老弱往來無患	The old and weak were able to come and go without calamity.
時典主通道者	At that time, those charged with connecting the road,
[積谿]故吏梁[氵 + 巴]	The former officer [of Jixi ?], one Liang Fei (?)
捕盜賊王留	and the officer for catching malefactors, Wang Liu,
百姓過者	along with the commoners who passed by,
皆蒙恩君	were all indebted to our fine gentleman,
延壽萬年	whose name will extend for ten thousand years.
書此盛巨	The one who wrote this was Sheng Ju.
元十一月九日造	[The inscription] was made in the Yongyuan reign period [89–105 CE]; eleventh month, ninth day.

reach. As the inscription says, local officials, under central government orders, repaired the old Bao–Xie Road, connecting it across the Qinling mountain range to the capital through extremely difficult terrain by tunneling through a wall of solid rock near the Bao River, thereby making a "Stone Gate." At one point some 2,690 anonymous conscripts were opening the Bao–Xie Road. Those conscripts worked for three consecutive years to produce 623 trestle roads cut into the mountainsides, five major bridges, 258 *li* of roads (or nearly 100 miles); 64 buildings, including rest houses, and courier and relay stations.[75] The stele inscriptions memorialize by name and title the officers who supervised the work (most especially one Yang Mengwen), and such inscriptions show the rewards that could come to officials who built roads, either on their own initiative, or when obeying orders in the imperial rescripts. A third, shorter inscription, which happens to be the first stele inscription dedicated to road building, tells of a construction project of much smaller scope:

> In the sixth month of the fifth year of the Establishing Peace era (Jianping, 2 BCE), the general purpose officer of Bi county, one Fan Gongping, sent stone masons and convict laborers to build the present road [near Chengdu], a width of 25 *zhang* (2.13 m), at a cost of 25,000 *cash*.

Even this small a construction project could end with the solemn dedication of a cult to the good official during his own lifetime (*sheng ci* 生祠). After death, of course, the official would continue to live on in local memories, thereby promoting the interests of his descendants, his relatives, and his clients, given that entry into the imperial bureaucracy typically required local input on a family's past merits and present connections when vacancies were to be filled.

As implied earlier, extraordinary deeds transformed people into gods in the classical era, no matter whether they were good or bad; a candidate for cult had made notable contributions to the welfare of the local populace or had inflicted great harm, rending the social and cosmic fabrics binding the living to the dead, and humans to the gods. Through rites of propitiation thanks could be rendered to the good and the "sting" removed from past misdeeds of the wicked. And so monumental road-builders who wasted human life and disturbed the dwellings of the local gods frequently became objects of cult soon after their deaths. History condemned General Meng Tian, who directed the building of the infamous "Straight Road" under orders from the First Emperor of Qin of terracotta warrior fame, for unwarranted intrusion in the natural conformation of the land and rhythms of the cosmos. Meng Tian commanded some 300,000 workers in the harshest of terrains, and for every man assigned to building a precursor to today's Great Wall, dozens would have been employed in building service roads and transporting supplies for the workers. Meng sought to impose upon the land the iron hand of imperial power, exemplified in the cities by the grid formed by the avenues and secondary streets and in the countryside by slicing through the veins of earth. According to the moralists, the hubris shown in Meng's determination to "fix the shape of the land" for all time merited public execution, even if Meng, ironically enough, was eventually forced to commit suicide for his commendable loyalty to an heir apparent right then out of favor. The violence of Meng's death merely strengthened his renown and the belief that major cults should be established in his name. The same could be said for the Qin Shihuangdi himself, whose Jieshi 碣石 inscription had him boasting of his "destroying walls, cutting through embankments to open the courses of rivers, and leveling steep defiles to eliminate obstructions [in the roads]." Cult sites dedicated to that tyrannical emperor quickly grew up at every major stopping point on the route taken during his tours of inspection (i.e. royal progresses) before and after unification, in response to the power of his perceived malevolence. So while having "no straight road to walk" was a common enough poetic trope portending individual and imperial collapse, the decision to build "straight roads" could imperil dynastic leaders, even as it generated cults.

Conclusion

This essay on roads has demonstrated some of the ways in which the concentration of state power in a carefully articulated hierarchy of urban or semi-urban spaces was supported by an impressive material and metaphoric network meant to supplant the more diffuse spatial orders of power devised by earlier polities in the vast area we now call "China." Modern nationalism pits history in China against the histories of other early great civilizations in the world arena, which often prompts misleading formulations, especially in the case of comparisons to states nearer the Mediterranean (e.g., Egypt, Mesopotamia, Persia, and Rome). Apparently, this sort of competition has driven at least one modern scholar to regard the extensiveness of the courier and postal systems, public and private, as solid "proof" for widespread literacy during Qin and Han, as compared with the classical Mediterranean world.[76] Given the lacunae in the extant records and the probability that many communities relied on professional letter-writers to facilitate unofficial exchanges, we find ourselves on far surer ground when it comes to noting the other aspects of the road networks for which the present evidence suffices for the first three centuries BCE and CE.

Notes

1 In contrast to Roman historians, few scholars of China have devoted much attention to roads. A classic work on the economy of the period (Yu Ying-shih 1967) fails even to list roads as a topic in its index.

2 Wang Zijin 1994a, 38–9. According to the regulations, in the eighth month, in the fall, these paths (called *qian mo* 阡陌 or *feng* 封) were to be weeded; in the ninth month, maintenance work on the regular roads (*dao* 道) was scheduled; and in the tenth month, bridges and dikes were to be built. Cf. the *Shuihudi* regulations on land (*tian ling* 田令).

3 Harley and Woodward 1994, passim; Hsu Mei-ling 1978, esp. 49, n. 13; He Shuangguan 1992. As the three sources show, scale mapping was a routine exercise, judging from the astronomico-mathematical classic entitled *Zhoubi suanjing* (comp. ca. 200 BCE). The excavated maps from Fangmatan, Mawangdui, and other sites show "remarkably small" errors. Best preserved are the maps from Fangmatan and Mawangdui (both second century BCE) at approximately 1:300,000 scale in the former instance and 1:150,000–200,000 in the latter. But scale mapping was not always the goal.

4 Despite the monumental losses over time, the canonical literature is relatively intact, though the texts in our hands today are hardly verbatim copies of the manuscripts in circulation before printing. Martin Kern estimates that only about one out of 1,000 Han *fu* survive today, though this was the major poetic form of the day (personal communication). For other losses, consult Dudbridge 2000; Drège 1991. The second problem is that the editions we have today have been heavily edited by centuries of well-meaning activist editors. See Kalinowski 2005; Nylan 2008. Major changes include Zhu Xi's rearrangement and emendations to the "Doctrine of the Mean" and the rearrangement of the *Zuozhuan* by Du Yu.

5 The figures are twenty-five from Western Han, and 253 inscriptions for Eastern Han; some 153 are undated (and so dated by analogy to dated inscriptions); see Harrist 2008, 61, n. 105. The problems presented by stele rubbings have been the subject of many recent works, including Liu et al. 2005; Abe 2002; Starr 2008.

6 E.g., Bagley 2001, 40, 212, 217, 311. Elvin 1973, ch. 1, points to three main factors that allow for the creation and destruction of empires: (1) size of the political unit; (2) productivity of its economy; and (3) the proportion of total output which has to be spent on defense and administration. "Size" (prior to modern times) refers mainly to the *burden* defined in terms of time and cost of communications over vast distances.

7 See SJ 117.3046–7, for a summary of both the Qin and Han efforts to set up roads prior to setting up administrative units.

8 For the discussion of forced migrations as one part of the four-part plan to secure the agricultural resources necessary for stable empire, see Shanghai Academy of Sciences, 1989, ch. 5, esp. 84–9. For the forced migrations of the noble and rich, see Xu Tianlin 1972a, ch. 49, esp. 499; Wang Zijin 1994a, ch. 13; Swann 1950, 249, citing HS 24B/7a.

9 SJ 69.2253. An advisor to would-be centralizers, he specifically mentions the prestige and strategic advantages to be gained by states whose roads allow carts to go two abreast and horsemen to ride in pairs (SJ 69.2258). Cf. HNZ, vol. 2, 586. Roads and maps are major topics in the *Guanzi* as well, a lengthy text translated by Rickett 1985, vol. 1, 229 (59.13).

10 See Elvin 1973, 27. Water transport was always much cheaper than land transport. According to SJ 129 and *Shuijing zhu*, the Yellow and Wei Rivers attracted merchants. The main commodities transported over long distances, aside from supplies for the military, were salt, iron, silk, lacquer, and wood.

11 Lewis (2006, 55) gives the figure of 4,250 miles for the Qin's imperial highways; he also says that the mileage for Han roads was greater, but he fails to give precise figures for Han mileage. The larger figure appears in Twitchett and Loewe 1986, 61.

12 Gibbon's estimate for the length of the Roman road system was 3,740 miles (ca. 150 CE).

13 For an eighth-century CE description of building *jiandao*, see Harrist 2008, 11.

14 *Zhanguo ce*, 5/37/19.

15 A simplified map of Qin Shihuangdi's imperial progresses in the late third century BCE is given in Wang Zijin 1994a, 29.

16 Next to some *chidao* were also built the *yongdao* ("palisaded roads"), which were reserved for the emperor and his relatives. Nienhauser 1994, vol. 1, 138, calls the *chidao* a "speedway," but privilege, rather than speed, was the essential feature of the road, though this type of road was free of obstructions. For further information, see Chen Zhi 1982, 15–18.

17 See HS 51.2328 and 2329, n. 10. The Wei River bridges leading to the capital were another of its spectacular features. According to the *Shuijingzhu* and other early sources, the most famous of these bridges was 526.88 m long and 13.8 m wide. The Wei River bridges are frequently depicted in Han tombs; see further Wang Xueli 1985, 114–15. Twitchett and Loewe (1986, 101) dispute the possibility of imperial roads this wide, but their conjecture must now be emended in light of excavated roads. In Shaanxi, remnants of the Qin-Han road seem to be 45 m wide and more. In several places, the road seems to be 50–60 m, as reported by Wang Zijin (1994a, 33). However, Wang suspects, probably correctly, that "this distinction between imperial and non-imperial lanes probably petered out some distance from the capital."

18 E.g., a section of the Straight Road exists in present-day Inner Mongolia, as reported by Shi Nianhai 1975.

19 The latter type is often called "corridor roads." See SJ 6.241 for an example of a *yongdao* built by the First Emperor of Qin to connect the palaces at Mt. Li to the capital some miles away.

20 SHD section D 159 makes it perfectly clear that kingdoms are more like "outer vassal states" than commanderies and counties, according to the laws. Cf. SHD section D 183–4.

21 All criminal activities committed "within the passes" received stiffer sentences if those criminal activities then extended beyond the passes. See SHD section D118.

22 Safe spaces, including forts, were created to protect and control the key nodes of trade, as well as to limit the indigenous peoples' direct access to the Chinese and foreign markets (thereby quite intentionally impoverishing them in the process). A memorial about the Xiongnu advised the emperor to quit the border passes but to retain within the central states the *guan liang* ("passes and checks at city gates") in order to regulate the nobility. See HS 94B.3803; Loewe 2000, 159 (for Hou Ying).

23 As seen below, this display culture precluded the sharp distinctions between the public and private to which moderns were accustomed, if not those between official and unofficial business.

24 Lü Simian 1962, 587–94. Sedan chairs hitched to horses or oxen was another dignified possibility where roads were not broad enough to admit carriages. The more impoverished and low-ranked probably rode on oxen, judging from anecdotes, if they were not forced to walk. For an overview of carriages as status- and virtue-markers in the sumptuary regulations, see Xu Tianlin 1972a, ch. 9: Xu includes the major references in the standard histories to tallies, seals, passports, and so forth (the other paraphernalia of the government-controlled roads).

25 See Thote 1999; Jiang Shaoyuan 1937. The latter tries to retrieve the deeper apotropaic significance of such quotidian objects.

26 See HS 24B, translated in Swann 1950, 308.

27 These two finds were excavated in 1975 and 1981 respectively. However, the full text of the Zhangjiashan laws was only published in 2001, prompting numerous specialized studies, the best being those by Lau 2002, Oba Osamu 1991, and various legal scholars working in Chinese. For Shuihudi, see Hulsewé 1985.

28 See, e.g., SHD sections A68, D 18, and E10. Rations for horses and cattle are mentioned in SHD sections A5, A37, and A75. Rations for messengers are specified in SHD section A 93. Males assigned to hard labor (a category that included construction work, escorting prisoners, or being posted to a resthouse for the courier service) received rations of half a bushel of grain in the morning and one-third at night, whereas those who stayed put, like the females engaged in hard labor, were given only one-third a bushel at the two meals of the day: SHD section A15–18, also Hulsewé 1985, 14–15, and 32, n. 2. In these same Shuihudi laws, a bushel of grain is reckoned to be worth 30 *cash*: see SHD section A66.

Note the numerous references in the early sources, however, to carts pulled by humans, either because they were more reliable than oxen and horses or because they represented the safest way, especially in mountainous regions of the frontiers. Sedan chairs were also employed in such circumstances, as well as for the sick. Horses were graded into three sorts: (1) those with the longest limbs were used for carriages of a certain type; (2) those with limbs of middling length, for the "highways;" and (3) those with the shortest, for transport. The Han continued the old Qin transport system (漢初秦不改).

29 Several anecdotes from Han discuss the government guest houses provided at the commandery and county levels, perhaps the most famous being that recorded in FSTY 9/10a–b.

30 SHD section C 21. Markets were held at many, if not all the passes, especially at the frontiers, as we know from commentaries to the standard histories. For two examples, see Wang Xianqian 1900, 94A/15b, 95/8a.

31 SHD section D 136; cf. G (no number), which defines the border-mound's size.

32 See, e.g., SHD section D 46.

33 SHD section A10. Cf. A12, A15, and A16, for rations for hard-labor convicts engaged in government business.

34 For further information, see Lü Simian 1962, 569. The transportation system included rest houses where travelers could eat and sleep, in addition to relay buildings and post stations where messengers exchanged exhausted horses for fresh ones. Shuihudi documents show that Qin set up checkpoints along the roads where travelers had to pay a tax and show passports in order to continue.

35 The Juyan slips talk of night journeys (e.g., strips 285.5 and 163.5); see Wang Zijin 1994a, 263.

36 SHD section E 4, 5. Prior to the Shuihudi and Zhangjiashan finds, it was assumed that civil law did not exist in China; that notion is manifestly untrue, as Zhaoyang 2008 now demonstrates. For more information on postal and relay services, see Loewe 2006, 79–81, 109–10.

37 SHD section A1.

38 Officials who did not use the carriages that marked their ranks were punished, as noted in the anecdote about Wei Xuancheng: Wei was accused of riding one rainy day on horseback, rather than in a carriage, and was thus demoted to *guan nei hou*. Nobles were not to demean their positions by foregoing the use of carriages: see Loewe 2000, 579–80.

39 SHD sections A 74–76. Apparently, according to the Preface to the Wei Statutes 魏律序, sometime in Eastern Han (25–220 CE) the imperial government, while maintaining the system of relay stations, decided *not* to maintain the old system of "public carriages and horses." Unfortunately, the wording of the Preface is none too clear on the scope and date of the change(s).

40 SHD section A 48. Permission was granted to repair or replace wheels, as needed, for the courier service and the carriages of high government officials.

41 See, e.g., SHD section A 73, which mentions four reasons for damage: "if the cart was neglected, or the cart's shafts become crooked; if the cart was left uncovered, or if its hood or canopy is broken or torn."

42 SHD sections D 138–9, E10.

43 Were there time and space enough in this volume, this essay could examine the range of issues and changing regulations relating to the government pastures for horses and oxen.

44 SHD section C 17.

45 For example, the minister Sang Hongyang reputedly set up such a for-profit service. When Wang Wenshu was governor of Henei, the commandery officials used altogether fifty government horses on private relay services, going from Henei to Henan to Chang'an, and run by the big families in the commandery; Wang was therefore executed for corruption. See Loewe 2000, 554–5, for Wang. Merchant status did not disqualify a man from office (as it would have in late imperial China). The famous official Diwu Lun was once engaged in the transport business: see Loewe 2000, 65–66. Already by Zhanguo times (475–222 BCE), the transport business was important. One description, recorded in *Zhanguo ce*, 22/5b, says that merchants are as busy as troops in traveling all day long, night and day (*ri ye xing bu xiu yi* 日夜行不休已), and they also use as many draft animals as the troops.

46 For example, Huang Ba, Intendant of the Capital Region, was charged with the crime of mistreating his subordinates because he requisitioned so many laborers for this task. Xue Hui, as prefect of Pengcheng, and Xue Xuan, his father, faced similar problems. In another example, Liu Bei, who went from Chengdu to Baishui, was charged with wasting corvée labor, since he built many postal stations (more than 400). For further information, see Loewe 2000, 165 (for Huang), 627 (for Xue Hui); de Crespigny 2007, 479–84 (for Liu Bei).

47 The promulgation of new laws in public places is mentioned in the *Zhouli* several times. As in our own day, ignorance of the law did not excuse members of society from obeying it, so whether a Han subject was illiterate or not was of no consequence to the government.

48 Classical Chinese is the pre-modern *lingua franca* for formal occasions.

49 HHS 81.2676–7; cf. *Qijia Hou Hanshu* (*Xie Cheng Hou Hanshu*) 5.12a/159. Cf. also the tale of Chen Pingzi 陳平子 in HHS 81.2678, which is analyzed in Brown 2007, 101.

50 For techniques as roads, see *Cang Jie pian*, in Ma Guohan 1967, vol. 4, 2196–7.

51 Cf. Hadot 2002.

52 The metaphors of blockage and circulation even preoccupy the poets (many of whom, of course, were also officers of the realm); see Owen 2006, esp. 133–4.

53 For example, one traditional interpretation of the *Odes* classic said of it that it did not "swerve aside" (*si wu xie* 思無邪), i.e., deviate from the correct path; however, the classical scholar Achilles Fang denounced this reading. There come to mind the two paths, one of carelessness and one of virtue, associated in Pythagorean traditions with the Greek letter Y. Many texts cite Yang Zhu's story, including FSTY 1/1a.

54 As rivers go toward the sea, roads go toward the land (with lands likened to "seas" in some late Zhanguo texts).

55 See the example of Meng Tian cited below.

56 An example of mass hysteria would be the spread of the Xiwangmu faith-healers along the major arteries of the Han system in the third century CE; see below.

57 E.g., the transport of *longyan* or "dragon eyes" and lichees from the far south. Under Zhaodi, a complaint alleged that the relay stations were giving out meat, wine, horses, and other lavish items to their guests.

58 Certain large-scale topographical maps in modern times show this regularity of roads and footpaths. However, LANDSAT satellite images are difficult for researchers on roads to use because the size of their standard pixel (i.e., a single unit of the picture) is such (30 m to a side) that few objects on the ground can be charted with sufficient clarity. High-resolution satellite images retain 2 to 5 m resolutions; aerial photographs normally range from 0.5 to 2 m in pixel size.

59 Furthermore, of the 452 slips of the daybook from Shuihudi, 151 strips (over 35 percent) relate directly to travel: see Wang Zijin 1994b, 45.

60 SHD strip 738.

61 Laws were posted at roads, streets, crossroads, gates, and markets.

62 Part of the fear recorded in our early sources may be fear of government impositions, as well as fear of the unknown, expressed as fear of wild beasts; and then there is fear of plague and epidemics.

63 Cf. *Zuozhuan*, Lord Xiang 10.9.

64 For road offerings used in healing cults, see Yang Hua 2007, 117. The Han laws closed the passages at times of eclipses, as well as during times of civil unrest. See Xu Tianlin 1972b, 414. Excavated Chu strips mentioning the so-called Five Offerings (one of which is to the Road Deity) come from Xincha Geling 新察葛陵 (not quite 100 years before Baoshan), 8 strips altogether. A1-2 speaks of a dog being offered and "at the gate a sheep." A3-56 speaks of a dog being offered to the road deity. A3-213 says that if there are evil influences, they may be traced to certain lords and (one lad), and then one prays (possibly to the road god); B1-28 speaks of offering a dog to the road cult. Cf., e.g., SHD 203; Huang 2010; Strassberg 1994. Hargett 1989, 925, discusses the early development of travel literature; for the Xiongnu gods of the routes and roads, see Bujard 2008, 789–90.

65 The text says, "I dare to make a declaration. Let so-and-so [i.e., the traveler] travel and not suffer blame; he first acts as Yu to clear the road."

66 The Yunmeng Shuihudi finds make this very clear. For further information, see Yang Hua 2007, 24–7.

67 In this description of local cults, the italics are mine. The reference to the "special room" may mean that these people do not offer cult to their ancestors.

68 Schindler 1924, 632, takes the suburban sacrifices as a "boundary sacrifice" as well. The *yin* sacrifice, a burnt offering of faggots, is offered in autumn after the harvest; also in spring "in order to consecrate/bring on the coming year" (*yi xing cisui* 以興嗣歲). (The word *yin* is related both to "swallow" and "smoke," a fact noted by commentators.) The *yin* sacrifice was also offered by rulers before they undertook tours of inspection or punitive campaigns going outside of the capital region; according to legend, it was also performed by sage-rulers in the second, fifth, eighth, and eleventh months, when the rulers held audience for the Si Yue 四岳 ("Four Marchmounts"), conceived both as gods of the four directions and as human ministers. The *lei* and *ma* sacrifices were offered at battle sites. The *ma* is a sacrifice to the equine-formed deity of the Earth. Probably *zu* means *wang* 往 ("to depart").

69 Xiu 修, son of Gong Gong 共工, was the spirit worshipped, according to FSTY 8. However other authors identify the spirit as Leizu 纍祖, son of Huangdi. See Yan Kejun 1958, 47/7a; HS 53/3a.

70 SHD mentions "Yedizhu" 野地主 (strip 207) and "Gongdizhu" 宫地主 (strips 202 and 207); Houtu (strips 213, 215, 237, and 243) vs. Gong Houtu (strips 214 and 233); and Xing (strip 208) vs. Gong Xing (strip 210). That these are pairs of deities (not different names for the same deity) is suggested by the pairs of names found on a single strip. The same *gong/ye* distinction occurs in Wangshan tomb (strips 28, 109, and 115).

71 E.g., HYGZ, 207. *Guanzi*, 16/17a–b, says that when Duke Huan of Qi went on a northern expedition against Guzhu 孤竹, he came upon a Spirit of Climbing the Mountain. The same story told in *Shuoyuan*, 18/13a, calls this local deity the "Spirit who knows the Road."

72 E.g., see HYGZ; SGZ.

73 *Lishi* 4:2b–3a; cf. Ye Chengyi 1997, vol. 1, 72. I thank Miranda Brown for sending me the transcription shown in Table 2.1.

74 Reading *shui* 水 for *lao* 老 (elderly), given the context. A similar reading appears in a Sichuan inscription dated 212 CE.

75 See *Jinshi cuibian* 5/12b–17a. At courier stations, messengers exchanged exhausted horses for fresh ones.

76 Yates 2007. His body of evidence consists mainly of two wooden boards from a single tomb 4 at Yunmeng Shuihudi (board A, M4:11 and board B, M4:6); they mention three family members involved in letter-writing, two male siblings and a mother. Presumably because the tomb occupant received the letters shortly before his death, they were included among his grave goods. Juyan also includes some private letters (labeled 10.16A, B). See Wang Zijin 1994a, 470–4. *Yiwen leiju* 31, contains a letter supposedly written by the famous scholar Ma Rong. For a slightly later period, see Richter 2006. As Richter notes, a whole range of mail-related issues had already become a set literary topos by Eastern Han, with the unlikelihood of safe and speedy delivery in the absence of a modern postal system a major theme. But this topos may well have been confined to the governing elites, while ordinary people employed scriveners. The high rate of urbanization given in the census of the second century CE may have been a factor in high literacy rates.

References

Primary sources, single texts, and compendia

Baoshan erhao Chumu jian 包山楚墓, ed. Hubei sheng Jingsha tielu kaogu dui. Beijing: Wenwu, 1999, 2 vols.

Baopuzi: Ge Hong 葛洪, 抱朴子, 蔡邕. All references are to *Siku quanshu* (electronic database).

Cai Yong 蔡邕 (132–92), "Prayer." In *Erxi tangwen ji* 二希堂文集10/4a–4b. All references are to *Siku quanshu* (electronic database).

FSTY: Ying Shao 應劭, *Fengsu tongyi* 風俗通義 (compiled before 204 CE). All references are to *Siku quanshu* (electronic database).

Guanzi 管子: All references are to *Siku quanshu* (electronic database).

HS: Ban Gu 班固, *Hanshu*. Beijing: Zhonghua shuju, 1962, 8 vols.

HHS: Fan Ye 范曄 (398–446) et al., *Hou Hanshu* 後漢書. Beijing: Zhonghua shuju, 1965, 12 vols.

HNZ: Liu An 劉安, *Huainanzi* 淮南子. All references are to Liu Wendian 劉文典, annot., *Huainan Honglie jijie* 淮南鴻烈集解. Beijing: Zhonghua, 1989, 2 vols.
HYGZ: *Huayang guozhi* 華陽國志. All references are to Ren Naiqiang 任乃強, *Huayang guozhi jiao bu tuzhu* 華陽國志校補圖注. Shanghai: Shanghai guji, 1987.
Jiangling Jiudian Dongzhou mu 江陵九店東周墓. Beijing: Kexue, 1995.
Jinshi cuibian 金石萃編, comp. Wang Chang 王昶 (1725–1806). In *Shike shi liao xin bian* 石刻史料新編, vols. 1–4. Taipei: Xinwen feng, repr. 1977.
Lishi: Hong Gua 洪适 (*jinshi* 1167). *Lishi* 隸釋. All references are to the *SBCK* edn.
Qijia Hou Hanshu (*Xie Cheng Hou Hanshu*) 七家後漢書（謝承後漢書）, ed. Wang Wentai 汪文臺. Taipei: Wenhai, 1972.
SGZ: *San guo zhi:* Chen Shou 陳壽 (233–97). *San guo zhi* 三國志. References are to the punctuated edn. Beijing: Zhonghua shuju, 1959.
SHD: *Shuihudi Qin mu zhu jian* 睡虎地秦墓竹簡 (1990), ed. Shuihudi Qin mu zhu jian zhengli xiaozu 睡虎地秦墓竹簡整理小組. Beijing: Wenwu chubanshe, 1990, repr. 2002.
SJ: Sima Qian 司馬遷 et al., *Shiji* 史記. References are to the punctuated edn. Beijing: Zhonghua shuju, 1959, 10 vols. For translations, see Nienhauser 1994.
Shuoyuan: Liu Xiang 劉向, *Shuoyuan* 說苑 [or *Shuiyuan*]. All references are to *Siku quanshu* (electronic database).
"Wei li zhi dao" 為吏之道 ("How to be a Good Official"). See SHD strips 167–73.
Yan Kejun 嚴可均, *Quan Hou Han wen* 全後漢文, in *Quan Shanggu Sandai Qin Han Sanguo Liuchao wen* 全上古三代秦漢三國六朝文. Beijing: Zhonghua, comp. 1836, repr. 1893. All references are to the 1958 repr.
Ying Shao, *Fengsu tongyi*. All references are to *Siku quanshu* (electronic database).
Zhanguo ce 戰國策, as compiled by Liu Xiang 劉向 (79-78 BCE). All references are to *Siku quanshu* (electronic database).
ZJS: *Zhangjiashan Han mu zhu jian (247 hao mu)* 張家山漢墓竹簡〔二四七號墓〕2001, ed. Zhangjiashan ersiqi hao Han mu zhujian zhengli xiaozu 張家山二四七號漢墓竹簡整理小組. Beijing: Wenwu chubanshe.
Zuo zhuan 左傳. All references are to *Chunqiu Zuozhuan zhuzi suoyin/*A concordance to the Chunqiu zuozhuan 春秋左傳逐字索引. Hong Kong: Commercial Press, 1995.

Secondary sources

Abe, S. K. 2002. *Ordinary Images.* Chicago: University of Chicago Press.
Bagley, R. W. 2001. *Ancient Sichuan: Treasures from a Lost Civilization*. Seattle and Princeton: Seattle Art Museum and Princeton University Press.
Brown, M. 2007. *The Politics of Mourning*. Albany: SUNY Press.
Bujard, M. 2008. "State and Local Cults in Han Religion." In Lagerwey and Kalinowski, 777–812.
Chen Zhi. 1982. 陳直, annot., *Sanfu huangtu jiaozheng* 三輔黃圖校正. Xi'an: Shaanxi Renmin.
Chin, T. T. L. 2005. "Savage Exchange: Fighting the Foreign in the Early Han Dynasty." PhD diss., University of California, Berkeley.
de Crespigny, R. 2007. *A Biographical Dictionary of the Later Han to the Three Kingdoms (23–220 AD)*. Leiden: Brill.
Drège, J.-P. 1991. *Les bibliothèques en Chine au temps des manuscrits (jusqu'au X^{e})*. Paris: École Française d'Extrême-Orient.
Dudbridge, G. 2000. *Lost Books of Medieval China*. London: British Library.

Elvin, M. 1973. *The Pattern of the Chinese Past*. Stanford: Stanford University Press.

Graham, A. C. 1989. *Disputers of the Tao: Philosophical Argument in Ancient China*. La Salle: Open Court.

Hadot, P. 2002. *What Is Ancient Philosophy?*, trans. M. Chase. Cambridge, MA: Harvard University Press.

Hargett, J. M. 1989. *On the Road in Twelfth Century China: The Travel Diaries of Fan Chengda (1126–93)*. Wiesbaden: Franz Steiner.

Harley, J. B. and D. Woodward, eds., 1994. *The History of Cartography,* 2.2: *Cartography in the Traditional East and Southeast Asian Societies.* Chicago: University of Chicago Press.

Harrist, R. E. 2008. *The Landscape of Words: Stone Inscriptions from Early and Medieval China*. Seattle: University of Washington Press.

He Shuangguan. 1992. "Ancient Maps Unearthed from Qin Tomb of Fangmatan and Han Tomb of Mawangdui: Comparative Research." *Journal of Chinese Geography* 3.2: 39–50.

Hsu Mei-ling. 1978. "Han Maps and Early Chinese Cartography." *Annals of the Association of American Geographers* 68: 45–60.

Huang, H. 2010. "Excursion, Estates, and the Kingly Gaze: The Landscape Poetry of Xie Lingyun." PhD diss., University of California, Berkeley.

Hulsewé, A. F. P. 1985. *Remnants of Ch'in Law: An Annotated Translation of the Ch'in Legal and Administrative Rules of the 3rd century B.C. Discovered in Yün-meng Prefecture, Hu-pei Province, in 1975.* Leiden: Brill.

Jiang Shaoyuan 江绍原. 1937 [repr. 1989]. *Zhongguo gudai lüxing zhi yanjiu* 中國古代旅行之研究. Shanghai: Shanghai wenyi chubanshe.

Kalinowski, M. 1998–9. "The Xingde 刑德 Texts from Mawangdui." *Early China* 23–4: 125–205.

Kalinowski, M. 2005. "La production des manuscrits dans la Chine ancienne." *Asiatische Studien/Études Asiatiques* 59.1: 131–68.

Kern, M., ed. 2005. *Text and Ritual in Early China*. Seattle: University of Washington Press.

Lagerwey, J. and M. Kalinowski, eds. 2008. *Early Chinese Religion,* 1: *Shang through Han (1250 BC–AD 220)*. Leiden: Brill.

Lai Guolong. 2005. "Death and the Otherworldly Journey in Early China as Seen through Tomb Texts, Travel Paraphernalia, and Road Rituals." *Asia Major*, 3rd ser., 18.1: 1–44.

Lao Gan 勞榦. 1947. "Lun Handai zhi luyun yu shuiyun." 論漢代之陸運與水運, *Zhongyang yanjiu yuan* 中央研究院 16: 69–91.

Lau, U. 2002. "Die Rekonstruktion des Strafprozesses und die Prinzipen der Strafzumessung zu Beginn der Han-Zeit im Lichte des Zouyanshu." In R. Emmerich and H. Stumpfeldt, eds., *Und folge nun dem, was mein Herz begehrt: Festschrift für Ulrich Unger zum 70. Geburtstag*, 343–95. Hamburg: Hamburger Sinologische Gesellschaft.

Lewis, M. E. 2006. *The Construction of Space in Early China*. Albany: SUNY Press.

Lewis, M. E. 2009. *China Between Empires: The Northern and Southern Dynasties.* Cambridge, MA: Harvard University Press.

Liu, C. et al. 2005. *Recarving China's Past: Art, Archaeology, and Architecture of the "Wu Family Shrines."* New Haven: Yale University Press.

Loewe, M. 2000. *A Biographical Dictionary of the Qin, Former Han & Xin Periods (221 BC–AD 24)*. Leiden: Brill.

Loewe, M. 2006. *The Government of the Qin and Han Empires, 221 BCE to 220 CE.* Indianapolis: Hackett.

Lü Simian. 呂思勉. 1962. *Qin Han shi* 秦漢史. Taipei: Kaiming shudian.

Ma Guohan 馬國翰. 1871 [repr. 1967]. *Yu han shan fang ji yi shu* 玉函山房輯佚書, 6 vols. Taipei: Wenhai.

Meng Mo 蒙默 et al. 1989. *Sichuan gudai shigao* 四川古代史稿. Chengdu: Sichuan renmin.

Nienhauser, W. et al., trans. 1994–. *The Grand Scribe's Records*, 8 vols. to date. Bloomington: Indiana University Press.

Nylan, M. 2001. "Boundaries of the Body and Body Politic in Early Confucian Thought." In D. Miller and S. Hashmi, eds., *Boundaries and Justice*, 112–35. Princeton: Princeton University Press.

Nylan, M. 2005. "Toward an Archaeology of Writing, Ritual, and Public Display in the Classical Era." In Kern, 3–49.

Nylan, M. 2007. "Empire in the Classical Era in China (323 BC–AD 316)." *Oriens Extremus* 46: 1–36.

Nylan, M. 2008. "Classics without Canonization. Reflections on Classical Learning and Authority in Qin (221–210 BC) and Han (206 BC–AD 220)." In Lagerwey and Kalinowski, 721–77.

Nylan, M. 2010a. "Administration of the Family." In M. Nylan and M. Loewe, eds., *China's Early Empires: A Reappraisal*, 266–95. Cambridge: Cambridge University Press.

Nylan, M. 2010b. "Wandering in the Ruins: The *Shuijing zhu* 水經注 (River Classic Commentary) Reconsidered." In A. K. L. Chan and Y.-K. Lo, eds., *Interpretation and Literature in Early Medieval China*, 63–102. Albany: SUNY Press.

Oba Osamu. 1991. *Qin Han fazhi shi yanjiu* 秦漢法制史研究. Shanghai: Shanghai Renmin. Repr. of Japanese original, *Shin Kan hōseishi no kenkyū*.

Owen, S. 2006. *The Making of Early Chinese Poetry.* Cambridge, MA: Harvard East Asian Monographs.

Pirazzoli-t'Serstevens, M. 2010. "Urbanism." In Nylan and Loewe, 169–85.

Richter, A. 2006. "Letters and Letter Writing in Early Medieval China." *Early Medieval China* 12: 1–29.

Rickett, W. A. 1985. *Guanzi: Political, Economic, and Philosophical Essays from Early China – A Study and Translation*. Princeton: Princeton University Press.

Schindler, B. 1924. "On the Travel, Wayside, and Wind Offerings in Ancient China." *Asia Major* 1: 624–56.

Shanghai Academy of Sciences. 1989. *Qin Han jingji sixiang shi* 秦漢經濟思想史 ("History of Economic Thought in Qin and Han"). Beijing: Zhonghua.

Shi Nianhai 史念海. 1975. In "Qin Shihuang zhidao yiji tansuo" 秦始皇直道遺跡探索, *Wenwu* 文物 10, 44–54.

Starr, K. 2008. *Black Tigers: A Grammar of Chinese Rubbings.* Seattle: University of Washington Press.

Strassberg, R. E. 1994. *Inscribed Landscapes: Travel Writing from Imperial China*. Berkeley: University of California Press.

Swann, N. L. 1950. *Food and Money in Ancient China*. New York: Paragon.

Thote, A. 1999. "Continuities and Discontinuities: Chu Burials during the Eastern Zhou Period." In R. Whitfield and Wang Tao, eds., *Exploring China's Past: New Discoveries and Studies in Archaeology and Art*, 189–204. London: Saffron Books.

Twitchett, D. and M. Loewe, eds. 1986. *The Cambridge History of China*, vol. 1. Cambridge: Cambridge University Press.

von Falkenhausen, L. 2005. "The E Jun Qi Metal Tallies: Inscribed Texts and Ritual Contexts." In Kern, 79–123.

Wang Xianqian 王先謙. 1900. *Hanshu buzhu* 漢書補注. Repr. Taipei: Yiwen chubanshe, 1955, and Beijing: Zhonghua shuju, 1983.

Wang Xueli 王學里. 1985. *Qindu Xianyang* 秦都咸陽. Xi'an: Renmin.

Wang Zijin 王子今. 1994a. *Qin Han jiaotong shigao* 秦漢交通史稿. Beijing: Zhonggong zhongyang dangxiao chubanshe.

Wang Zijin 王子今. 1994b. "Shuihudi Qin jian rishu suojian xinggui yiji" 睡虎地秦簡日書所見行歸宜忌. *Jiang Han kaogu* 江漢考古 2: 45–49.

Xu Tianlin 徐天麟. 1972a. *Dong Han huiyao* 東漢會要. Taipei: World Press.

Xu Tianlin 徐天麟. 1972b. *Xi Han huiyao* 西漢會要. Taipei: World Press.

Xu Zhigang 許志剛. 1984. "Zu dao kao" 祖道考, *Shijie zongjiao yanjiu* 世界宗教研究1: 131–35.

Yang Hua 楊華. 2007. *Xinchu jianbo yu lizhi yanjiu* 新出简帛與禮制研究 (Ding Yuanzhi 丁原植, series chief ed.). Taipei: Taiwan guji chuban youxian gongsi.

Yates, R. D. S. 2007. "Soldiers, Scribes, and Women: Literacy among the Lower Orders in Early China." Unpublished draft dated July 18, 2007.

Ye Chengyi 葉程義. 1997. *Hanbei shike wenxue kaoshi* 漢魏石刻文學考釋. Taipei: Xinwenfeng chubanshe gongsi.

Yu Weichao. 1977. *Journey into China's Antiquity*, 4 vols. Beijing: Morning Glory Publishers, with the National History Museum.

Yu Ying-shih. 1967. *Trade and Expansion in Han China: A Study in the Structure of Sino-barbarian Economic Relations.* Berkeley: University of California Press.

Zhaoyang, Z. 2008. "A Note on Civil Cases in Early China." *Journal of the American Oriental Society* 128.2: 121–30.

3

Privatizing the Network: Private Contributions and Road Infrastructure in Late Imperial China (1500–1900)

NANNY KIM

Transport systems of late imperial China, whether roads or waterways, are an elusive subject.[1] Great differences in natural conditions and economic systems across the empire require a regional perspective, while scanty sources often permit no more than the reconstruction of general outlines. Descriptions of road traffic by western travelers to China, which become numerous towards the late nineteenth century, mostly paint a picture of medieval stagnation. George Cressey's excellent geographic overview of China summarizes transport conditions:

> Inaccessibility and poor communications have handicapped China for centuries. Except where railroads or modern automobile service is available, travel is on foot, by sedan chair, on muleback, in two-wheeled carts, or by boat. Twenty miles a day is a good average, and in place of a journey of a few hours as by rail one spends days jolting along in a two-wheeled cart. (1934, 24–5)

Some writers provide more differentiated observations. For example, F. E. Forbes, who traveled in the Lower Yangzi area in the 1840s (before the mid-nineteenth-century rebellions), wrote:

> In each province there is generally a paved highroad from one Foo [*fu*, prefectural city] to another, and sometimes, but not often, to a Hëen [*xien*, district city]; these roads are in good order and about six feet broad, besides these there are the footpaths, which skirt the fields as boundaries, but are sometimes very inconvenient to the traveler from the tortuous courses they take, as sometimes you start off at right angles

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

> from the object of your journey; besides these and the canals, a stone often divides two properties. In this way the country is perfectly open, save where here and there dotted with picturesque farm-houses, joss-houses, and bosquets of bamboo. (1848, 90)

While highly valuable for precise descriptions of local conditions and technologies, an extrapolation of western descriptions back in time or across other parts of the empire is almost bound to lead to distortion. Figure 3.1 provides a rough overview of the differences between the transport systems of China proper. Evidently, roads and road transport in the almost stone-less North China plain and the loess regions of the northwest were unlike those of southern China, a landscape composed of small alluvial plains and steep hills. Furthermore, agricultural regimes shaped the roads. For example, roads in the north could encroach upon adjacent millet and wheat fields, hence lines of trees and mud walls were measures to protect the fields as much as to stabilize the roads. In the south, by contrast, roads often fulfilled a second function as dikes; here it was irrigation systems that dictated their course, and rice paddies might reduce a path to the narrowest dike a man could walk on. Conditions in mountain areas were again vastly different. Here, horses, mules, and donkeys were more available, since less intensive agricultural use meant more pastures. In the extremely rugged Qinling Ranges, which separate the old capital area of modern Xi'an from the Sichuan basin, and along the eastern slopes of the Himalayas in the southwest, major connections were articulated by precarious sections of wooden gallery roads built into cliffs and trestle roads in gorges.

As for deteriorating conditions in the late nineteenth century, there is no doubt that they were widespread. This is unsurprising in view of the devastating civil wars of the mid-nineteenth century. The largest of these, the Taiping rebellion (1850–64), was the war that cost the largest number of human lives throughout human history prior to the twentieth century. An additional factor that influenced western views on non-western roads was the shift in the standard of comparison: with the spread of macadamization in Europe from the 1830s onwards, roads in all other parts of the world were bound to appear backward, hence the imagery of medieval stagnation.

In Chinese sources, the picture becomes highly macroscopic. Sources directly concerned with road infrastructure provide only skeletal information. Thus, regulations concerning the courier network and merchant route books list the stage points, but tell nothing about the roads that linked them.[2] Maps give some indication of bridges and ferries, but very little of terrain and distances. Local gazetteers usually list courier stations, military stations, and postal relays, thus providing a denser series of points along the main overland routes. They also list ferries and bridges, sometimes with notes on their location and history.[3] In more literary writings, mention of mundane affairs was decried as unworthy. This attitude is particularly pronounced in the high literary forms of poetry and prose, but it also affected the more lowly forms of drama and novel. Money transactions in particular, but also descriptions of everyday situations for their own sake, were too base to be mentioned. For this reason, the very considerable body of travel writings contains very little specific information on transport history. By

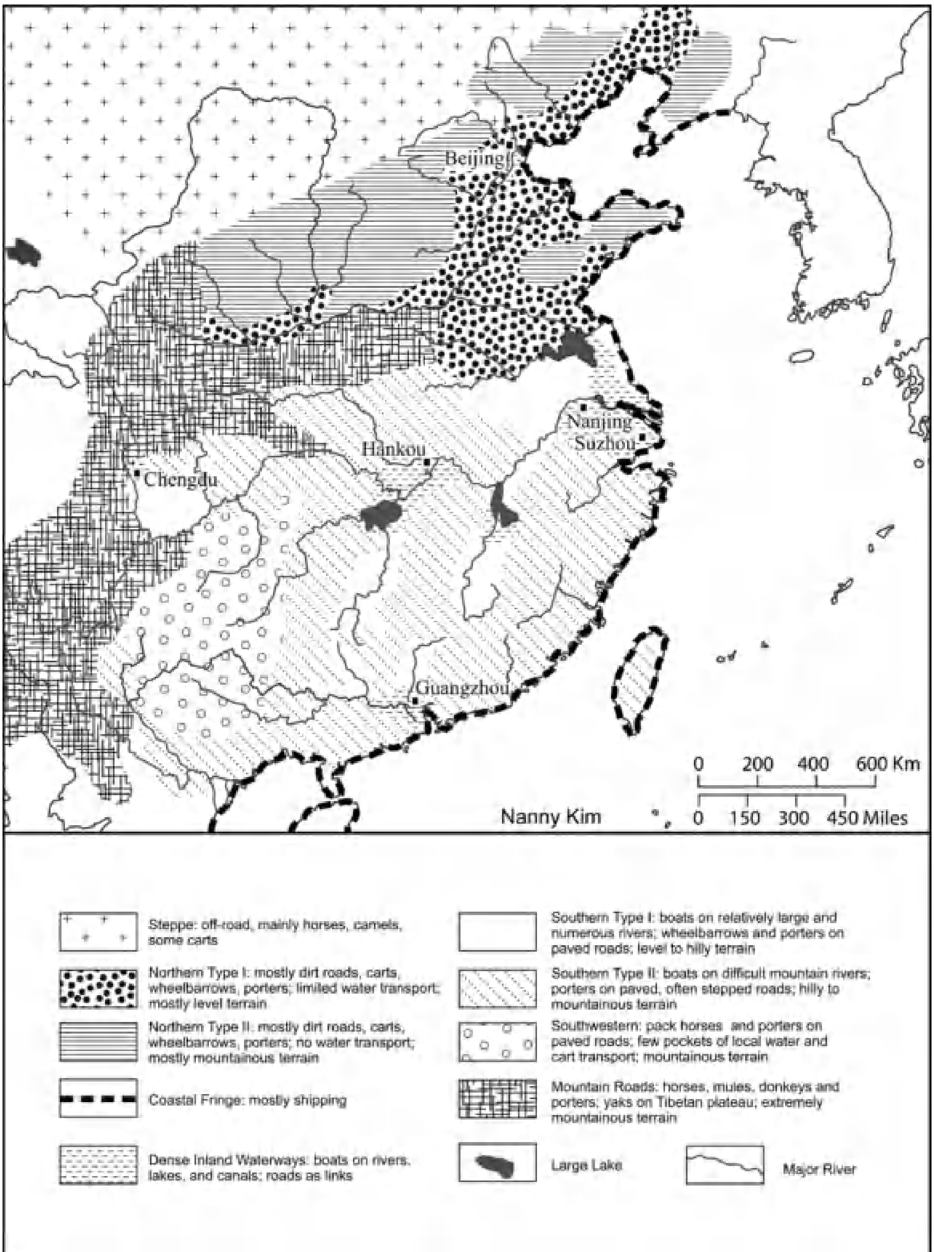


Figure 3.1 Overview of transport systems in late imperial China.
Source: Map by the author.

comparison, novels, collections of random jottings (*biji*), and occasional poetry on specific locations are comparatively good sources. Materials from government archives, especially reports from military campaigns and documents of surviving magistracy archives, provide the best, though often not easily accessible, materials.

The scarcity of sources may appear surprising, for roads had been recognized as key structures of state communications, military mobility, and transport arteries, as well as manifestations of state order, since Chinese antiquity (see Nylan, this volume). Major transformations in the course of history include not only important developments in water transport, especially for mass goods such as salt, grain, and textiles, but also for comfortable travel by houseboat; technological and organizational shifts reduced the reliance on traction by horses and oxen in favour of human labour and wind power for propulsion. Yet roads remained central to the state for providing the infrastructure of efficient communications. In the historiographical tradition founded by the *Shiji* ("Record of the Historian") in the middle of the first century BCE, descriptions of waterways and the circulation of goods became established forms of history writing, while the courier system was covered in sections on military preparedness. Subsequent dynasties down to the Ming (1368–1644) and Qing (1644–1911) maintained this tradition. While similarities, down to the wording of regulations governing the courier system across several dynasties, might suggest continuity, transformations were in fact considerable. Two characteristics of late imperial China, the ideal of the light state and the Confucianization of society, are central to late imperial patterns and require some explanation (see especially Smith and von Glahn 2003).

First, the "light state." The Ming dynasty built legitimacy by presenting its rule, in contrast to that of the Mongol Yuan, as non-exploitative, in particular as a state that encouraged agriculture so as to provide for the needs of all subjects. The Manchu Qing followed this ideal, so as also to distance itself from the shadow of the Mongols. Thus, low taxes and minimal state personnel were essential to legitimating rule during both dynasties. While the population increased from perhaps 70 million to almost 200 million during the Ming dynasty, it collapsed during the period of famine, epidemics, and war that lasted from the beginning to the last third of the seventeenth century. When Qing Manchu rule was firmly established, economic recovery was swift. The long eighteenth century was a period of peace and prosperity almost throughout the empire. From perhaps 160 million in 1650, the population increased to over 300 million by 1800 (Cao Shuji 2000, 691–701, 706; Brook 1998a, 162–3), while the imperial government remained almost unchanged in size, with some 20,000 regular civil officials throughout the Qing period (Chang Chung-li 1955, 116). Thus a district (the lowest level of administrative area and governed by a single ranked official) might extend across 100 km^2 and comprise two million inhabitants. From the point of view of the political centre, the empire remained manageable in terms of personnel and information flows. On the local level, however, the reach of the state was limited, and the limitations only increased with the growth of the population and the economy. Local government functions relied on the local official with his small military, secretarial, and menial staff, supported by a far larger number of staff not on the official state payroll, and on the cooperation of local elites. To a considerable extent, administration took place below the level of the official state, and actual governance largely relied on customary arrangements (with or without the involvement of state agents), which were brought to the attention of the centre only when things went badly wrong.

Neo-Confucianism, developed as an elite philosophy and practice during the Song period (960–1279), in conjunction with the state examination system expanded and permeated social life in late imperial China. It involved a personalized yet entirely political conception of all human relations, an insistence on ethical evaluation of all phenomena, and a near-monopoly on education. As a way of thinking and as a very real power governing social positions and avenues of advancement, it provided a common framework of reference not only for the extremely mobile political elite but also for other groups to varying degrees. The patrilineal clan offered authority and stability in a society shaped by great social and spatial mobility, while moral and material obligations of leading local families towards their clans and wider communities provided structures of social self-organization. It should be added that temples of all religions, though underrepresented in the sources, also fulfilled key functions, including practical aspects, such as housing trade guilds or fairs, as storehouses, and as charitable institutions.

Judging by available sources, the state at the central and local levels appears to have remained surprisingly aloof of road infrastructure. Records left by the central government concerning roads almost exclusively concentrate on the roads in and around Beijing that were frequented by the emperor. Most road-building projects beyond the environs of Beijing are recorded in the context of military campaigns.[4] Regulations required local officials to organize frequent maintenance works on roads, bridges, and ferries during the agricultural slack periods, threatening punishments if neglect was found out. Yet regular budgets were tiny. Besides, only one set of rules for road maintenance was issued by the central government for the entire empire, which may have been used as general guidelines for the assessment of local government by their superiors but took no heed of local conditions. Thus, information on actual roads and their maintenance is almost non-existent. Records in gazetteers, memorials concerning related matters, and documents of local administrations suggest there was attention to core structures such as courier roads, as well as bridges and ferries close to district cities, but only fitful involvement with more distant or less crucial infrastructure.[5]

At the same time, the high degree of commercialization, with massive trade volumes in bulk goods such as grain and cloth (e.g., Wang Yeh-chien 1992), does not suggest systematic complacency towards infrastructure. Not infrequent complaints about rutted roads and potholes might reflect high traffic intensity rather than general neglect. As state funding and initiatives were limited, transport infrastructure apparently was a field in which state government largely relied on local elites. Timothy Brook has drawn attention to this shift in the Ming period (1368–1644). He pointed out that for bridges (the best recorded infrastructure item) funding by the state became increasingly rare. According to his estimate, local officials and local gentry each funded about half of the bridges constructed from the late fourteenth through the mid-fifteenth centuries, while from the later fifteenth century onwards, most new bridges were built on the initiative of private persons and with their funds (Brook 1998a, 91).

Against the background outlined above and taking into consideration the great losses of lives, traditions, and written and material sources between the mid-nineteenth-century wars and the Great Proletarian Cultural Revolution, the thin coverage of transport systems in the sources becomes intelligible. Mobility was too common to be worth mentioning, transport systems were well organized and to a large extent functioned outside the state sphere, and detailed knowledge was not required either for travelers or administrators. In the following, this essay explores the cultural setting and actual effects of private contributions to infrastructure. To this end, the following section discusses the ethics and cultural patterns that made infrastructure a field of philanthropy. Two subsequent sections use spatial analysis and fieldwork findings for an investigation of specific and identifiable structures, such as bridges, ferries, and road sections in the frontier area of northeastern Yunnan in the eighteenth and nineteenth centuries.

Morality, Mobility, and Philanthropy

Private activities to improve road transport or to ease the lot of travelers took many forms. Individuals or village communities donated and maintained lanterns at bridges, danger spots, and pilgrims' paths, or they set up road signs or rest pavilions; the latter were sometimes organized as small associations with attached fields, the income from which was used to provide free tea and refreshments. The more wealthy, such as members of the local gentry, merchants, and officials, might fund and organize the construction of bridges, ferries, and roads, often also with donations of fields to provide for their maintenance (Kim 2008b, 226–7). At the top end of the scale were very large projects, such as the maintenance of the Dike of Lord Fan (Fangongdi), a dike and canal over 200 km in length that protected the coast of northern Jiangsu (Figure 3.2).[6] This task was shouldered by the salt merchants of the region, commonly referred to as the Yangzhou salt merchants or the Huizhou group, famously rich and highly influential.

Infrastructure projects large and small were part of a wide range of involvement on behalf of the welfare of local society and for public affairs. Among these were famine and poor relief, orphanages and widow homes, charitable cemeteries, drug dispensaries, schools, and granaries, as well as contributions to city walls, government buildings, Confucius temples, and support for troops during war campaigns.[7] The information on such infrastructure projects is patchy and raises many questions. Why would people contribute? Were projects organized and coordinated, or were they simply individual outbreaks of philanthropy? How could private contributors move into an area traditionally regarded as a core state task? And were

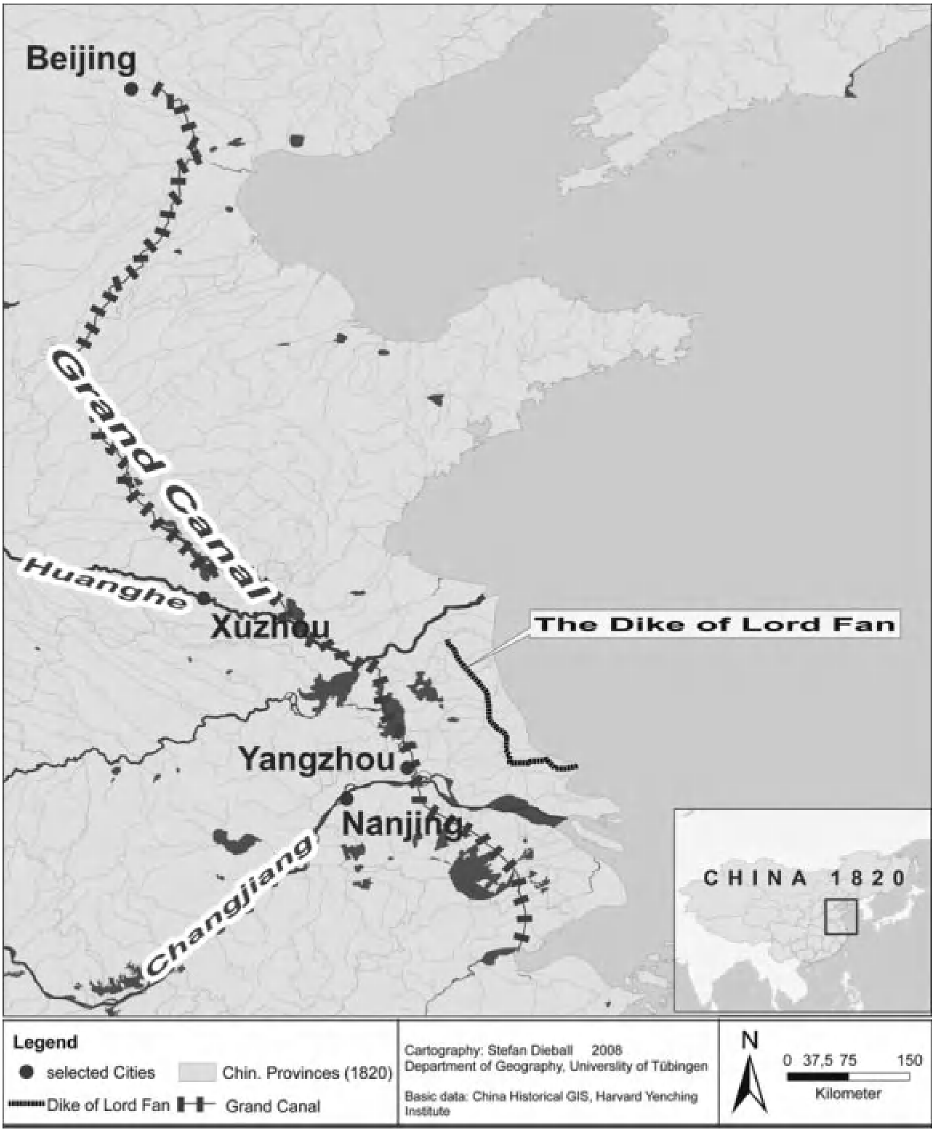


Figure 3.2 The dike of Lord Fan.
Source: Map by Stefan Dieball.

such contributions actually useful for the construction and maintenance of transport infrastructure?

In order to find out how private involvement for infrastructure became an established practice, a brief exploration of long-term cultural transformation is necessary. Since antiquity, roads, ferries, and bridges were recognized as avenues of state communications and symbols of imperial power, and local officials were personally responsible for their maintenance. At the same time, however, individuals and monasteries appear as donors in written history from the tenth century (Elvin 1973, 132; Kieschnick 2003, 199–203). In the Song period, contributions to infrastructure had become one of the obligations of elites for the welfare of their local communities. In one extremely influential Neo-Confucian text of 1178, Yuan Cai's (1140–90) clan rules *Yuanshi shifan* ("Yuan's Precepts to be Handed Down the Generations"), instructions on participation in infrastructure projects appear in the chapter on the family's relations with the local community:

> When the people of one's village get together to give money and goods for the construction of bridges, the building of roads, or the setting up of ferries, it is appropriate to support them as best as one can, whereas one cannot remain inactive, claiming that this would be parting with one's wealth without obtaining blessing. For as soon as the road is built, in our going out in the mornings and coming back in the evenings, servants and horses no longer need to worry, and those mounting carriages and horses no longer need to tremble in fear at bridges and river crossings, thus all will be blessed! (*juan* 2, *zhi jia* [the well-governed household])[8]

In high moral tones, the text presents projects that ease travel and transport as one of the tasks of prominent local families. Records of the same period leave the impression that Buddhist monasteries were the main non-state builders of bridges, suggesting that donations for infrastructure were a field of competition between Buddhists and Confucians (Kieschnick 2003, 201). In fact, both high-brow Neo-Confucian representatives of the imperial state and Buddhist and Daoist clerics and monasteries remained involved in infrastructure projects through the late imperial period.

Although contributions to infrastructure can thus be shown to have been established elite practice, upon closer investigation developments can be discerned in the standing of private actors and in the ethical ranking of projects. Mark Elvin quotes a passage from Fan Chengda (1126–93), a Song statesman who kept detailed travel diaries:

> The road from Wuzhou to Quzhou is entirely bricked, and we no longer suffered from a muddy surface. In times past, there were two rich persons, one in each of these prefectural capitals, whose families were linked by marriage. They wished to visit each other in convenient fashion, and so they together bricked the road.[9]

The simple relating of the story suggests that such projects were not uncommon. The families must have been rich indeed, since the two prefectural cities are over

100 km apart. In view of the scope of the project and the fact that the road definitely was a courier route, offering family convenience as the only motivation acquires a new significance. By presenting the improvement as a private affair, a motivation validated by Yuan Cai is advanced. At the same time, any hint of criticizing the government for neglect of a public road is avoided. To turn this argument around, it would appear therefore that in the Song period the main communication network was considered state responsibility.[10]

In the late imperial period, such circumspection in recording private infrastructure projects can no longer be detected. In the case of the Dike of Lord Fan mentioned above, when the need for repair works was discussed at court, the organization and funding by the salt merchants of the region was mentioned as the usual order of things. It was only for major works that leadership by the governor responsible for the regulation of the Huanghe (Yellow River) and the Grand Canal was considered (but apparently not implemented).[11] Local gazetteers of the Ming and Qing periods record contributors to infrastructure projects in a factual and affirmative tone. By the late Qing, a new category of biographical notes was created for commoners who had gained merit by philanthropic contributions. In infrastructure, as in charities and other areas, the state's attitude towards private contributions had become thoroughly positive – which was fortunate, because state structures were thin and could not be expanded.

From the point of view of would-be contributors, infrastructure projects ranked prominently among philanthropic activities. A Buddhist moral tract from the late nineteenth century introduces the benefits of meritorious deeds as follows:

> This amassing of merit makes no distinction between the rich and the poor, the high and the low; if only one has a charitable heart and undertakes charitable deeds. For example, the rich and mighty, when they see a poor person, should offer relief by giving him clothes and food. Or they could build bridges, repair roads or set up ferries. Those at market places or near temples can set up tea stalls, distribute drugs, provide coffins; they can donate land for charitable cemeteries to bury those who have died away from home or for the setting up of public schools for the poor children to learn to read. All these deeds will earn no little merit.
>
> As for the poor who wish for happiness, they can do good without spending money. For example, they can explain to others the principle of retribution, encourage others to be good children, give others good advice, help others with their work when they see them in need, stop others when they see a quarrel, rescue others when they see them in danger, care about others when they see them in trouble. They cannot break into other peoples' marriages, nor disturb other peoples' businesses. All this costs no money, yet the lustre will fall on one too, and it counts as amassing merit.[12]

In this tract, infrastructure projects come immediately after the basic human response of feeding the hungry and clothing the destitute. In satirical depictions of religious activists in novels of the late Ming and early Qing, infrastructure projects even appear as the top choice for the rich who wish to do good.[13] It would appear that in times of famine, helping others survive was the most imperative obligation towards one's community, while in good times infrastructure projects provided a safe and visible opportunity of moral investment.

In the course of the Qing dynasty, a regulated system of state rewards for philanthropic investments emerged. Just as virtuous widows and filial children were recorded and honoured by memorial arches (*pailou*), the Qing statutes ruled that charitable deeds, including the support of orphans or widows, donations to the wider clan, famine relief, contributions to government building projects or to bridges and roads, and the burial of dead bodies, could be rewarded by the Ministry of Rites. Contributions under 1,000 tael[14] were rewarded with a tablet to be mounted at the door, bearing the inscription "glad to do good, love of giving" (*leshan haoshi*). For a donation of over 1,000 tael, one would receive 30 tael to erect an honorary arch bearing the same inscription. Honorary ranks for outstanding contributions were also possible (*Qing huidian shili*, *juan* 409, 498). Although contributions to infrastructure projects with few exceptions fell within the range of a few hundred tael, the possibility of official recognition certainly enhanced the gain in social standing.

From the above findings, three tentative conclusions can be drawn. First, infrastructure projects were a long-standing and important part of the public-minded activities and obligations of local elites. Scattered data on projects large and small, especially on tiny projects undertaken by local villagers, strongly suggest a very widespread practice. Second, these activities had clearly become an established avenue to gain local standing and real assets; a stele recording the setting up of a ferry or other project, a placard or memorial arch were lasting records of an outstanding individual and his family. A good name and – even more – written records of meritorious deeds provided a degree of protection against government harassment as well as preferential treatment in such matters as tax payments and requisitions in times of emergency. Third, since they were so integrated into social advancement, contributions of one kind or another were probably hard to avoid. The sources are usually silent about the degree to which projects were in fact initiated by the individual whose names are recorded or how far they were pushed to donate by either community leaders or local officials. A closer look at the regional situation can provide a more concrete picture and some answers to open questions.

Roads, Ferries, and Bridges in a Southwestern Frontier Region

From the mid-eighteenth to the mid-nineteenth century, over 3,000 tons of copper were transported annually out of northeastern Yunnan to supply the mints in Beijing. Fieldwork and spatial analysis carried out in a research project on social, technological, and environmental transformations in this regional transport system provide some insights into the roles of local government and private contributors.[15] The area on the eastern fringe of the Himalayas is extremely rugged and geologically complex. Rivers run in deeply cut erosion valleys gouged into ranges reaching up to over 4000 m. Water transport is not feasible, and road transport difficult. The landscape is unstable, due to extreme gradients and relatively frequent earthquakes.[16]

In this period, northeastern Yunnan was a recently conquered territory in the colonial frontier region (Giersch 2001). The administrative map had been redrawn only in the early eighteenth century, with two prefectures, Dongchuan and Zhaotong, set up under direct imperial rule. The area thus offers the opportunity to study an "export society," in which recent settlers from different regions of China proper dominated the more fertile lower plateaus, while the remains of the decimated aboriginal peoples were pushed to the higher elevations. To ensure control and on account of the importance accorded to the supply of mint metals to the imperial mints, state investment in infrastructure here was relatively high.[17] Although the costs of roadworks are not known, considerable construction of roads, probably often by troops, took place in the early years of direct rule. For roads used to transport copper, but lying outside the courier network, regulations on maintenance have survived. These required rebuilding main roads where necessary every five to six years, and secondary roads every fifteen to sixteen years, with budgets of several hundred tael for stretches of about 100 km (*Yunnan tongzhi* 1819, *juan* 4; *Dongchuan fuzhi* 1761; Figure 3.3).

Due to the geographic expanse and the limited time available, my fieldwork along the main south-north transport routes could provide no more than occasional glimpses into actual conditions in the past. However, I have visited the sites of two private infrastructure projects not far from the prefectural city of Dongchuan prefecture (now Huize). The first site was found only with the help of a village party official with an interest in local history. The visible structure is a rectangular trough, roughly 40 × 80 cm, cut into a slab next to the courier road heading north from the city, the main transport artery prior to the construction of a motor road in 1939 (Figure 3.4). The trough is situated at a walking distance of about three hours from the city, at the top of the first ascent from the Huize plateau. The limestone slope of the mountain range west of the city here has a narrow saddle through which the road enters a smaller plateau some 300 m above Huize. According to local oral tradition, the inhabitants of the tiny nearby village of Tuogu used to carry water to this trough to water the pack-animal trains which passed through. Although the tradition could not be confirmed, the trough appears to be the remains of a small charitable project for the convenience of passers-by. The project cannot be dated, and there is no means of finding out whether water was provided as free charity, if it was sold, or if arrangements changed over time. Despite uncertainties, in the absence of any written evidence for all northeastern Yunnan, the find is significant as evidence of the presence of small charitable projects.

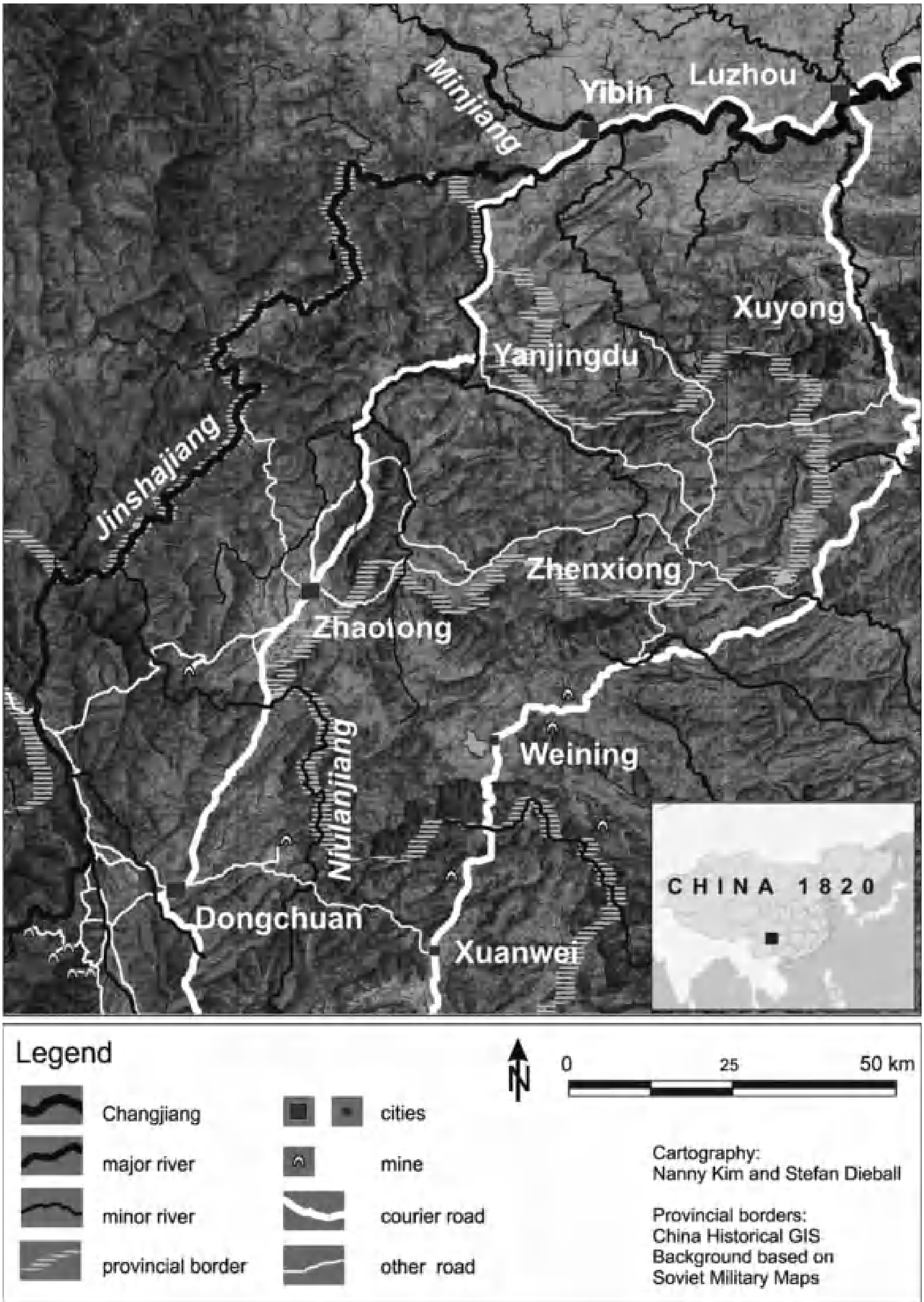


Figure 3.3 Northeastern Yunnan, with major roads, cities, towns, and administrative jurisdictions.
Source: Map by the author and Stefan Dieball.

Figure 3.4 Trough cut into a slab next to the main road near Tuogu, some three hours from the city of Huize by foot and pack horse.
Source: Photograph by the author, 2007.

The second site is recorded in local history. It is a section of a road in a gorge some 50 km west of Huize. The road descends from the Nagu Plateau into the Yanshui Gorge and to the Xiaojiang Valley. It presumably joined the road along the Jinshajiang (River of Golden Sand) to Qiaojia at the confluence of the Xiaojiang with the Jinshajiang.[18] The extant section around a cliff and across a side-gorge in the lowest section of the Yanshui gorge consisted of a narrow road hewn into the cliff over a distance of ca. 7 km, with a tunnel section and a bridge across a side gully. This section is crucial, for it greatly eases transport on this route. Only the upper ramp of the bridge remains today, and parts of the tunnel have come down in a major rockfall. The small tongue of fields near the bridge bears the name *Shijiang fang* ("stone mason's house"), probably a memory of masons living here during the project or permanently stationed for maintenance (Figure 3.5).

This road provided an alternative to the main overland route westwards to Qiaojia on the east bank of the Jinshajiang some 150 km further northwest, and to western Sichuan across the river, usually by the ferry at Menggu. From the Nagu plateau, this road climbed to a height of 2,000 meters and followed the contours of the mountain slope, crossing the last ridge before the Jinshajiang Valley and

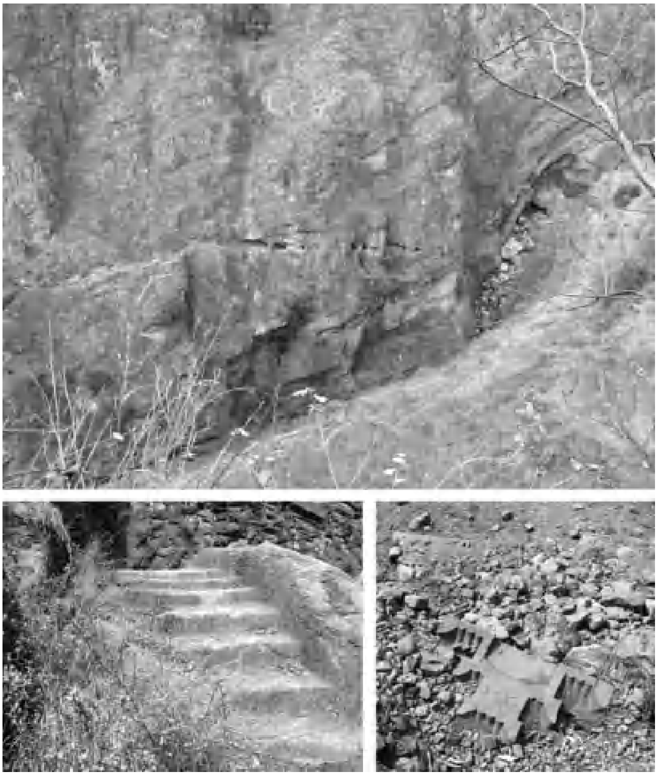


Figure 3.5 The Nagu copper transport road: road section with tunnel around a cliff, and parts of the original stele at the bridge head.
Source: Photographs by the author, 2007.

descending over 1,200 meters towards Menggu on a steep slope. To reach Qiaojia, the alternative road was longer but less arduous than the main road. Besides, it may have provided an alternative route to western Sichuan and to the mining areas on the western slopes of the mountain massif across the Xiaojiang.

Two sources provide information on the road: a stele at the bridge head erected in 1791 by the Huize district magistrate, and an entry in the section of biographical notes about persons of outstanding merit in the local gazetteer of Qiaojia in 1940. The stele records that Liu Handing from Qiaojia built the road and the bridge to ease copper transport. It mentions that Liu was famous throughout the area for earlier projects and for exhorting people to look after infrastructure. Regulation requiring works on a meandering stream that used to inundate the road west of Huize and the building of a dike road are mentioned in particular. The Menggu road construction, lasting from spring 1787 to summer 1789, is characterized as the largest of all projects on difficult roads in the area. In addition to the factual information provided, the inscription composed by the local official indicates that Liu Handing had acted upon his own initiative. The text mentions that when Liu began to plan the project, there were people who tried to dissuade him, for they deemed the difficulties too great to be overcome. This exchange, though a topos in such accounts, excludes the possibility of government leadership, for no government official would indicate that his own administration had initiated an impossible project.

According to local historical records that were edited and printed in the mid-twentieth century, Liu Handing was a merchant. He is credited with having undertaken regulation projects on small rivers in Huize and Qujing district, the construction of a bridge, a well, and a dike road in Qiaojia district, and with having personally supervised the Menggu slope road project. Furthermore, he is recorded as engaged in all fields of philanthropic activity: distributing warm clothing in winter, medicine, tea, and coffins, as well as setting up charity schools and ferries (*Qiaojia xianzhi gao* 1942, 713–14; similar in *Daguan xianzhi* 1949, 1512). In the late eighteenth century, Qiaojia was still a colonial outpost, having been an important centre of the Yi people up to the wars early in the century, and all too close to western Sichuan, the new Yi heartland. In this setting, Liu Handing is remembered as a civilizer, with greatest emphasis on his leading role in the founding of a Confucian school and in expanding the region's quota in the state examinations.

According to the Yunnan gazetteer, the original bridge built by Liu Handing was a stone bridge, which was swept away in a flash flood. In 1881, the Jiangxi merchants Wang Shitai and Xia Yongshun extended the tunnel and built an iron chain bridge (quoted in *Qiaojia xianzhi gao* 1942, 667).

We have no information on the sums Liu Handing invested in his projects or how he acquired the wealth that allowed for philanthropy on this scale. There is no doubt that the four-year Menggu road project was costly. Liu is classified as a merchant, but in classical Chinese this designation covers both trading and entrepreneurial activities. Because of the explicit motivation of easing copper transports, it seems possible that Liu was involved in copper mining or trade.

Liu Handing's copper transport road is not a unique example of private individuals constructing public roads. Four other projects appear in the local gazetteers of northeastern Yunnan:

1 A stone bridge and road sections cut into the rock over 300 m in length at the Shahe River, built by Hu Dingnan, Lu Huaisan, and Hu Zhongming in 1757.[19]
2 A new road some 30 km in length from Wulapu (north of modern Jing'an) to Yiwanshui (now Yuwan) built by Shi Yingqi, a merchant from Xi'an, in 1772. The road crossed the watershed between the Sayu and the Daguanhe (two of the upper arms of the Hengjiang) and improved an alternative route to the main overland road to Sichuan. The construction took almost a year and cost over 1,000 tael (*Zhaotong zhi gao* 1924, 219).
3 A section on the road from Zhaotong to Zhenxiong that was paved by Sima Wang, some time before 1784. The road through a forest used to be

dangerously muddy and slippery, despite regular recruitment of locals who were made to lay sticks (*Zhenxiong zhouzhi* 1784, 979).

4 A road cut into the cliff of the Yuntaishan near Shoushan in the Hengjiang Valley in 1899–1900 by the Daoist Jiang (?–1920), who is also credited with improving the main road on its whole length of almost 200 km from Zhaotong to Huize (*Zhaotong zhi gao* 1924, 222; *Daguan xianzhigao* 1945, 1340).

The findings indicate that infrastructure projects as public-minded activities were present in the relatively remote area of northeastern Yunnan, that large projects on major transport arteries indeed brought about important improvements, and that the largest investors were rich merchants, capable of undertaking projects on a scale beyond the means of local governments.

Bridges and Ferries in Zhenxiong Department

Zhenxiong department in the eastern part of Zhaotong prefecture was on the fringe of Miao and Yi areas, wedged between Sichuan and Guizhou provinces. Migrants had begun arriving from Sichuan before the eighteenth century, but as the department was economically unimportant and possessed little ground flat enough for concentrated agricultural use, imperial control remained limited. The department had some 75,000 registered inhabitants in the late eighteenth century, a figure, however, certainly far below the actual population. Due to the difficult terrain it took twelve days to travel across the region along the main road from west to east and about six days south to north.[20]

A spatial analysis of entries on ferries and bridges in Zhenxiong department from gazetteers of 1784 and 1887 correlates with Timothy Brook's findings for eastern China in the Ming period. The focus on river crossings is dictated by the historiographical tradition that requires the listing of these crucial points in overland transport.[21] The Zhenxiong gazetteers are unusual in their comparative thoroughness in recording bridges and ferries, with a note on their location and the people who built them (*Zhenxiong zhouzhi* 1784; 1887).[22] Although relatively thorough, the records are nonetheless incomplete, being restricted to bridges that were important for their size, that were built of stone, or that had been brought to the notice of government representatives, usually when government officials themselves or personages of local importance and with good connections to the government were involved in the projects. We may assume that the lists are exhaustive for bridges and ferries built by the servants of the state, while – for those contributed by private persons – more was left to chance the further away they were from the department seat or the more removed in time from the compilation of the gazetteer. In addition, the verbatim copying from the earlier to the later gazetteer shows that it was in part tradition that was recorded, not necessarily current conditions.

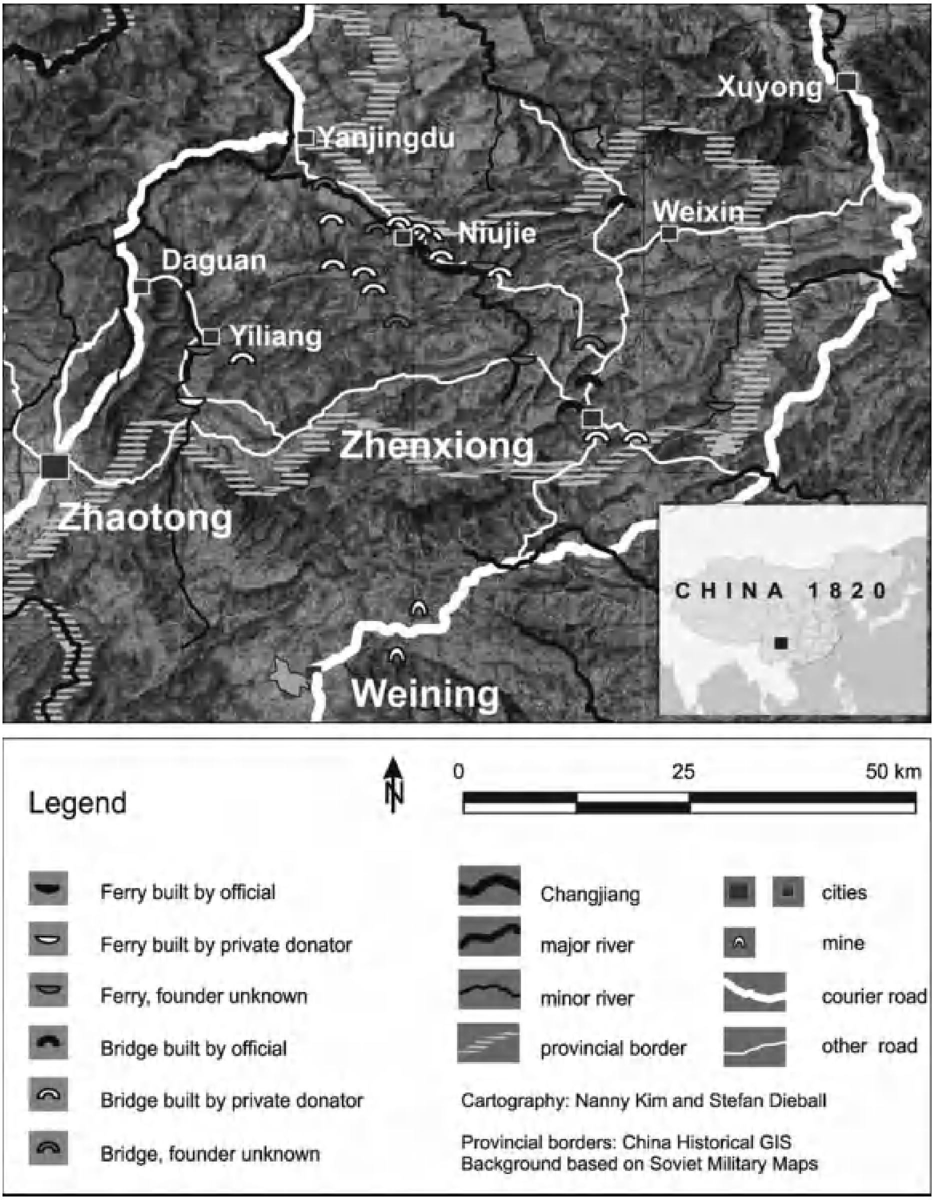


Figure 3.6 Bridges and ferries in Zhenxiong department.
Source: Map by the author and Stefan Dieball.

Figure 3.6, of Zhenxiong department, shows twenty bridges and five ferries that could be located, together with main overland roads reconstructed from the lists of military stations. From the total number of entries, twenty-nine bridges, seven ferries, and one road section, the picture emerges as shown in Table 3.1.

Table 3.1 Ferries, bridges, and a road section recorded in *Zhenxiong zhouzhi*.

	Ferries, founded by			*Bridges, founded by*			*Road, founded by*
	*Unknown founder**	*Official, sub-official and/or staff*	*Private person*	*Unknown founder**	*Official, sub-official and/or staff*	*Private person*	*Private person*
Recorded to 1784	5	1	–	4	4	4	1
Recorded to 1887	–	–	1	1	–	16	–

Note: *Ferries and bridges, of which the founders are unknown, are usually described as very old, i.e. most probably predating the year 1727, when the department's government – run by a ranked official dispatched from Beijing – was set up.
Source: *Zhenxiong zhouzhi* 1784, 978–80; 1887, 1120–3.

This example shows that construction by agents of the state was high in the period when the state was concerned to develop infrastructure and the economy, while private contributors took over in the nineteenth century. However, direct government management shaped infrastructure only in the environs of the department seat. When the bias towards recording projects by servants of the state and the expanse of the department's territory are taken into consideration, the limited level of state presence emerges clearly. Furthermore, the pattern suggests that the roads secured by military posts were indeed the main arteries and attracted further improvements by private contributors. The clusters of private projects, especially in the Niujie area but also in the environs of Yiliang, are not suggestive of a leading role by local government. Rather, it would appear that these areas were more densely inhabited and economically important than their low administrative status suggests, and that their inhabitants organized the necessary transport infrastructure independently.

Conclusion

Overall patterns for late imperial China, and particularly findings from northeastern Yunnan in the high and later Qing periods, confirm a process that may be described as an increasing privatization of the road network. Contributions to infrastructure were a moral obligation of local elites. The practice was long established in both religious and Confucian ethics and hence had become an important avenue of social advancement. The reward system of the Qing highlights a little noticed aspect in the interaction between the state and an elite defined by wealth more than by gentry and educational status: in effect, rules were laid down for buying oneself into official rank and status. At the same time, the usually unrecorded but certainly numerous small projects by individuals or village communities demonstrate that involvement in infrastructure was not merely an elite ideal but also present at the grassroots level. Local societies were capable of performing governmental functions independently, and often from a position a long way below the presence of any high elite and state structures. Finally, this exploration suggests that the density of private involvement was sufficient to indeed improve road transport conditions.

Appendix: Chinese Quotations

Yuan Cai 袁采《袁氏世範》卷二：治家：
鄉人有糾率錢物以造橋、修路及大造渡船者，宜隨力助之，不可謂捨財不見獲福而不為。且如造路既成，吾之晨出暮歸，仆馬無疏虞及乘輿馬過橋渡而不至惴惴者，皆所獲之福也。

Fan Chengda 范成大《驂鸞錄》一卷， entry 乾道癸巳歲正月十三日：
十三日，至衢州。自婺至衢皆磚街，無復泥塗之憂。異時兩州各有一富人作姻家，欲便徃來，共甃此路。

Wieger 1913, 194 [popular moral tract]:
這積德，也不論富貴，於不論貧賤，只要存善心，作善事。比方這富貴的，見了窮人，

就該賙濟他，捨衣裳，捨粥飯。或是修橋補路，造擺渡船。集上廟上的開捨茶棚，捨藥，捨棺材。捨義地，埋外來人，立義學，着這窮的念書，以上這些個事，修福就不少。
若是貧窮的修福，有不費錢的好事。比方合人講因果保應，勸人孝順，指給人好道，見人有了事，就去助工。見人打架，就去解勸。見人在患難裏頭，就去打救。見人有了事兒，就去周全。也不給人家破婚姻，也不給人家散買賣。這都是，不用費錢，人就沾光的，也算積德。

Qingxi daoren 清溪道人《禅真逸史》卷六:
趙婆道：“不是這等講。他富貴的，行那富貴的事；我貧窮，干我貧窮的事。比如那修橋砌路，塑佛造殿，这是有錢的所為；我和你行些方便，積些陰德，燒些香，念些佛，聽經拜懺，也是修行的道路。

Glossary

biji 筆記
Daguanhe 大觀河 (upper arm of the Hengjiang 横江)
Daoist Jiang 江道人 (died 1920)
Dongchuan fu 東川府 (now Huize 會澤)
Place names in the prefecture: Menggu 蒙姑, Nagu 那姑, Qiaojia 巧家, Shijiang fang 石匠房, Tuogu 拖姑, Yanshuigou 鹽水溝
Fangongdi 範公堤
Jinshajiang 金沙江
leshan haoshi 樂善好施
Liu Handing 劉漢鼎
pailou 牌樓
Qingling Mountains 秦嶺山
Qujing prefecture 曲靖府
Sayuhe 洒漁河 (upper arm of the Hengjiang 横江)
Shahe River 沙河 (small tributary of Jinshajiang)：沙河石橋，監生胡定南倡導捐修，閤民盧槐三、貢生胡仲明復倡修兩岸石路百餘丈。
Shi Yingqi 石應起
Shiji 史記
Sima Wang 司馬王
Wang Shitai 王世泰
Xia Yongshun 夏永顺
Xiaojiang 小江
Yuan Cai 袁采
Zhenxiong 鎮雄州, part of Zhaotong prefecture 昭通府
Zhaotong 昭通府
Place names in the prefecture (including Zhenxiong department 鎮雄州): Niujie 牛街, Wulapu 烏拉鋪 (north of modern Jing'an 靖安), Xiangmu 享母, Yiliang 彝良, Yiwanshui 一碗水 (now Yuwan 玉碗), Yuntaishan 雲台山, near Shoushan 壽山

Notes

1 The only focused study on late imperial transport is Timothy Brook's work on Ming communications (1998b). For an overview of mainly the Qing period, see Kim 2008b.

2 In real life, such information was in fact sufficient, since traveling officials used the courier system and other travelers who could afford to pay for their voyage employed transport brokers. These were middlemen who organized the boats, carts, porters, horses, donkeys, or mules for both passengers and their luggage or goods, handled payments and also functioned as guarantors for the transporters hired (Kim 2008b, 254).

3 Local gazetteers (*difangzhi*) were compiled for all provinces and most prefectures and districts, not at regular intervals but often after major changes or calamities. They are primarily administrative descriptions of local conditions, government tasks, and history.

4 *DaQing huidian zeli*, *juan* 135, section *qiaodao* ("bridges and roads"), in *Wenyuange Siku quanshu*; *Ming-Qing shilu*.

5 Research of primary sources that allow insights into the daily administration and actual performance of the courier and postal system has not been undertaken. My impressions derive from the sighting of original documents of the Baxian magistracy archive (now part of Chongqing) and a published collection of archival documents on the courier system (Ha Enzhong 2003).

6 The Dike of Lord Fan is a structure that goes back to the tenth century. It serves both as a sea dike and as part of the network of drainage canals of the alluvial coastal plain. It has been closely linked to saline production areas, which supply salt to most of eastern and central China, both as a protector of the coast and as a transport artery. For an investigation of the important market towns that arose in connection with the salt trade in the Qing period and the role of salt merchants, see Wang Zhenzhong 1996, 106–9.

7 For a discussion of the "Chinese managerial public sphere," see Rankin 1994; see also Yang Songshui 2007 for their range and importance in local society; Rowe 2002, 546–50; and Handlin Smith 2006 for an overview of charitable philanthropy in Qing society; and Will and Wong 1991 for contributions to granaries. Almost all analyses of elite involvement in public tasks overlook two aspects: contributions to infrastructure, traditionally under the heading of donations of ferries and bridges, and contributions directly offered to the state, an important source of revenue in the Qing period integrated with the sale of offices.

8 See appendix for the original texts translated from the Chinese.

9 Elvin 1973, 131–32. I have adapted the Romanization of place names to the current Pinyin standard. The diary records a journey from Suzhou to Guilin in winter 1172–1173.

10 This interpretation is supported by Song local gazetteers, which record numerous projects by officials to improve main roads, and some private projects on minor roads.

11 *Shizong xian huangdi shangyu neige* (Rescripts by the Yongzheng Emperor to the Cabinet), *juan* 127, *Shizong xian huangdi zhupi yuzhi* (Vermilion Rescripts by the Yongzheng Emperor), *juan* 32. In *Wenyuange siku quanshu* 1998.

12 Wieger 1913, 194 (my translation). The work provides no information on the origin of the tracts collected; it can only be assumed that they were collected in the Tianjin region around 1900.

13 E.g., Qingxi daoren, seventeenth-century *Chanzhen yishi* (True Chan Tales), *juan* 6: Madam Zhao said: "No, this is not right. The rich do as rich does, us poor do as poor does. Things like building bridges and paving roads, like making Buddha statues and constructing temple halls, that's for those who have money. You and me, we do what comes handy, we collect hidden merit, we burn incense, recite Buddha's name, listen to sutras. That's also a way to refinement."

14 The tael (*liang* in Chinese) was the unminted silver money of late imperial China. The standard tael was about 37 gm of silver of a relatively high purity. Unlike copper cash, silver was not a currency in the strict sense, as it was neither minted nor formally issued.

15 Fieldwork was carried out between 2006 and 2008 by the author (Kim 2008a and p. xiv above), frequently together with Stefan Dieball, Hans Joachim Rosner, and Rüdiger Specht, colleagues from the Department of Geography, Tuebingen University.

16 As it is often very difficult to judge when a road was modified, and the present aspect of many pre-industrial structures may be very different from their condition some 200 years ago, our fieldwork explorations focused on steep, rocky slopes. Findings at some distance from present roads in regions that had lost their importance as transport/transit places were most reliable, since improvements made either after the end of copper shipments in 1853 or after the end of traditional transport regimes around 1950 could be excluded.

17 Some 6,000 tons of metal were shipped annually to the metropolitan mints alone, not counting household consumption and the provincial mints. Qing period copper cash in fact was a brass coin, consisting of an alloy of copper and zinc, with additions of tin and lead.

18 Jinshajiang (River of Golden Sand) is the name of the upper Changjiang above Yibin. The Changjiang is still commonly called the Yangzi in western publications and is in fact the name of the lowest section of the river. Qiaojia was part of Dongchuan prefecture during the Qing period.

19 *Yongshan xianzhi lue*, 756. The localization of this bridge and road is somewhat uncertain, as the name *Shahe* ("sandy river") is extremely common. Hu Dingnan, who held the lowest academic title of student at the Imperial academy, and Hu Zhongming, who held the title of senior licentiate, were the only members of the title-holding gentry among the contributors to road projects.

20 *Zhenxiong zhouzhi* 1784, 1003. According to the census of 1887, after two decades of recovery from the mid-nineteenth-century wars, the population stood at some 120,000 persons (*Zhenxiong zhouzhi* 1887, 1157). For distances and the numbers of day stages, see *Zhenxiong zhouzhi* 1784, 974 and *Yunnan tongzhi* 1819, *juan* 4, *luyun* ("overland transport").

21 Unluckily for my interest in roads and road conditions, these were not standard features to be recorded, although road projects are occasionally mentioned in the section "ferries and bridges."

22 The list in the earlier gazetteer began a tradition of entries consisting of the name of the bridge, the sub-county in which it was located, and the persons who provided the funds for having it built. The later gazetteer, from 1887, copied the earlier list unchanged and added an extension. The added entries mostly but not exclusively record bridges of recent date, with data partly provided by military officials stationed in Niujie and Xiangmu.

References

Brook, T. 1998a. *The Confusions of Pleasure: Commerce and Culture in Ming China*. Berkeley: University of California Press.

Brook, T. 1998b. “Communications and Commerce.” In D. Twitchett and F. W. Mote, eds., *The Cambridge History of China*, 8.2: *The Ming Dynasty, 1368–1644*, 579–707. Cambridge: Cambridge University Press.

Cao Shuji 曹树基 . 2000. *Zhongguo renkoushi* 中国人口史, vol. 5: *Qing shiqi* 清时期 (*A Population History of China: The Qing Period*). Shanghai: Fudan daxue chubanshe.

Chang Chung-li. 1955. *The Chinese Gentry: Studies on Their Role in Nineteenth-century Chinese Society*. Seattle: University of Washington Press.

Cressey, G. B. 1934. *China's Geographic Foundation: A Survey of the Land and Its People*. New York: McGraw-Hill.

Daguan xianzhi 大关县志 (*Gazetteer of Daguan District*). Manuscript 1949. Zhang Mingshen, ed. 张铭琛, revd. Zhang Weihan 张维翰. Repr. in *Zhaotong jiuzhi huibian*, vol. 5: 1363–580.

Daguan xianzhigao 大关县志稿 (*Draft gazetteer of Daguan district*). 1945. Wang Xintian, ed. 王心田. Repr. in *Zhaotong jiuzhi huibian* 昭通旧志汇编 (*Collected Old Gazetteers of Zhaotong*), vol. 5: 1293–362.

Dongchuan fuzhi 東川府誌 (*Gazetteer of Dongchuan Prefecture*). 1761. Commissioned and compiled by Cui Naiyong 崔乃鏞 and Fang Gui 方桂 . Repr. 2006, annotated by Liang Xiaoqiang 梁晓强. Kunming: Yunnan renmin chubanshe.

Elvin, M. 1973. *The Pattern of the Chinese Past*. Stanford: Stanford University Press.

Forbes, F. E. 1848. *Five Years in China: From 1842–1847. With an Account of the Occupation of the Islands of Labuan and Borneo by her Majesty's Forces*. Repr. 1972. Taibei: Chengwen.

Giersch, C. P. 2001. “‘A Motley Throng’: Social Change on Southwest China's Early Modern Frontier, 1700–1880.” *Journal of Asian Studies* 60.1: 67–94.

Ha Enzhong 哈恩忠, ed. 2003. “Qianlongchao yidi shiliao” 乾隆朝驛迪史料 (Historical Materials on the Courier and Postal Systems during the Qianlong Period). *Lishi dang'an* no. 1: 24–47 and no. 2: 17–36.

Handlin Smith, J. F. 2006. “Social Hierarchy and Merchant Philanthropy as Perceived in Several Late-Ming and Early-Qing Texts.” *Journal of the Economic and Social History of the Orient* 41.3: 417–51.

Kieschnick, J. 2003. *The Impact of Buddhism on Chinese Material Culture*. Princeton: Princeton University Press.

Kim, N. 2008a. “Copper Transports out of Yunnan, ca. 1750–1850: Transport Technologies, Natural Difficulties and Environmental Change in a Southwestern Highland Area.” In T. Hirzel and N. Kim, eds. *Metals, Monies, and Markets in Early Modern Societies: East Asian and Global Perspectives*, 191–219 (Monies, Markets and Finance in China and East Asia 1). Berlin: LIT.

Kim, N. 2008b. “Transport im China der späten Kaiserzeit, 1450–1850: Eine Bestandsaufnahme.” In R. P. Sieferle, ed. *Transportgeschichte im internationalen Vergleich: Europa–China–Naher Osten*, 209–92. Münster: LIT.

Qiaojia xianzhi gao 巧家縣誌稿 (*Draft Gazetteer of Qiaojia District*). 1942. Compiled by Tang Zha 汤祚, with Chen Tianxi 陈天锡 et al. Repr. in *Zhaotong jiuzhi huibian*, 2: 523–739.

Qing huidian shili 清會典事例 (*Precedents of the Collected Statutes of the Qing Dynasty*). 1899. Repr. 1991. Beijing: Zhonghua shuju.

Rankin, M. B. 1994. “The Local Managerial Public Sphere: Refashioning State-Societal Relations in Late Imperial China.” In L. Vandermeersch, ed., *La société civile face à l'état dans les traditions chinoise, japonaise, coréenne et vietnamienne*, 173–201. Paris: Ecole Française d'Extrême-Orient.

Rowe, W. T. 2002. "Social Stability and Social Change." In W. J. Peterson, ed., *The Cambridge History of China, 9.1. The Ch'ing Empire to 1800*, 473–562. Cambridge: Cambridge University Press.

Smith, P. J. and R. von Glahn, eds. 2003. *The Song-Yuan-Ming Transition in Chinese History* (Harvard East Asian Monographs 221). Cambridge, MA: Harvard University Press.

Wang Yeh-chien. 1992. "Secular Trends of Rice Prices in the Yangzi Delta, 1638–1935." In T. G. Rawski and L. M. Li, eds., *Chinese History in Economic Perspective*, 35–68. Berkeley: University of California Press.

Wang Zhenzhong 王振忠. 1996. *Ming-Qing Huaishang yu Huaiyang shehui bianqian* 明清徽商與淮陽社會變遷 (*The Huizhou Salt Merchants and Social Change in Northeastern Jiangsu in the Ming and Qing Periods*). Beijing: Sanlian shudian.

Wenyuange siku quanshu 文淵閣四庫全書 (Wenyuange edition of the Complete Collection of the Four Libraries). 1998. Hongkong: Zhongwen daxue chubanshe.

Wieger, L., ed. and trans. 1913. *Moral Tenets and Customs in China*, trans. from the French by L. Davrout. Ho-kien-fu: Catholic Mission Press.

Will, P.-É. and R. Bin Wong. 1991. *Nourish the People: The State Civilian Granary System in China 1650–1850* (Michigan Monographs in Chinese Studies 60). Ann Arbor: Center for Chinese Studies.

Yang Songshui 杨松水. 2007. "Lun Qingdai Wanzhong shenshi zai baozhang chengxiang shehui hudongzhong de zuoyong" 论清代皖中绅士在保障城乡社会互动中的作用 (On the Functions and Interactions of the Gentry in Central Anhui in Providing Social Security). *Zhongguo nongshi*, vol. 2: 95–103.

Yongshan xianzhi lue 永善縣誌略 (*Brief Gazetteer of Yongshan district*). Manuscript 1803, with later additions. Ed. by Cha Shu 查枢, Xu Shou 徐绶, Sun Qianji 孙谦暨. In *Zhaotong jiuzhi huibian*, vol. 3: 741–814.

Yunnan tongzhi 雲南銅志 (*On the Copper of Yunnan*). Manuscript 1819. Compiled by Dai Ruizheng 戴瑞徵.

Zhaotong jiuzhi huibian 昭通旧志汇编 (*Collected Old Gazetteers of Zhaotong*). 2006. Ed. by *Zhaotong jiuzhi huibian* editing committee. Kunming: Yunnan renming chubanshe.

Zhaotong zhi gao 昭通志稿 (*Draft Gazetteer of Zhaotong*). 1924. Commissioned by Fu Tingquan 符廷铨 and Jiang Yingshu 蒋应澍, ed. by Yang Lüqian 杨履乾. Repr. in *Zhaotong jiuzhi huibian*, vol. 1: 87–283.

Zhenxiong zhouzhi 镇雄州志 (*Gazetteer of Zhenxiong Department*), 1784. Commissioned and compiled by Tu Shulian 屠述濂, additions by Lü Xinzhe 吕心哲. Repr. as *Qianlong Zhenxiong zhouzhi* in *Zhaotong jiuzhi huibian* (Collection of Old Gazetteers of Zhaotong), vol. 4: 951–1090.

Zhenxiong zhouzhi 镇雄州志 (*Gazetteer of Zhenxiong Department*). 1887. Commissioned by Wu Guanghan 吴光汉, compiled by Song Chengji 宋成基. Repr. as *Guangxu Zhenxiong zhouzhi* in *Zhaotong jiuzhi huibian* (*Collection of Old Gazetteers of Zhaotong*), vol. 4: 1091–292.

4

Linking the Realm: The Gokaidô Highway Network in Early Modern Japan (1603–1868)

Constantine N. Vaporis

During the early modern period (1603–1868), Japan enjoyed a prolonged period of peace under the authority of the Tokugawa government, or shogunate. After a period of civil war, which lasted more than a century, the Tokugawa shoguns were able to get the military lords, or daimyo, to lay down their weapons and accept them as sovereigns. The Tokugawa, together with their allies, directly controlled roughly 25 percent of the country's territory. The remainder of the country was ruled by the daimyo, who were semi-independent rulers of the roughly 260 individual domains. During the first half of the seventeenth century, the Tokugawa laid claim to a range of powers over the daimyo that made its government the strongest and most centralized in Japan's history; these included the powers of attainder, or disenfeoffment, and transfer of daimyo domains, the one-castle per domain regulation (*ikkoku ichijô*) and restrictions on castle repairs or expansion projects, a monopoly on foreign policy and foreign trade, currency control, and a monopoly on the legitimate use of physical force within Japan.

Tokugawa authority was also reflected by, and asserted through, the creation of a centralized road network, the Gokaidô (Figure 4.1), which was built at local expense and ran through the heart of the country, infringing on the sovereignty of those lords through whose territories it coursed. Central authority was further exercised through corvée labor requirements on the residents of those domains through which the roads passed; they were required to transport Tokugawa officials

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

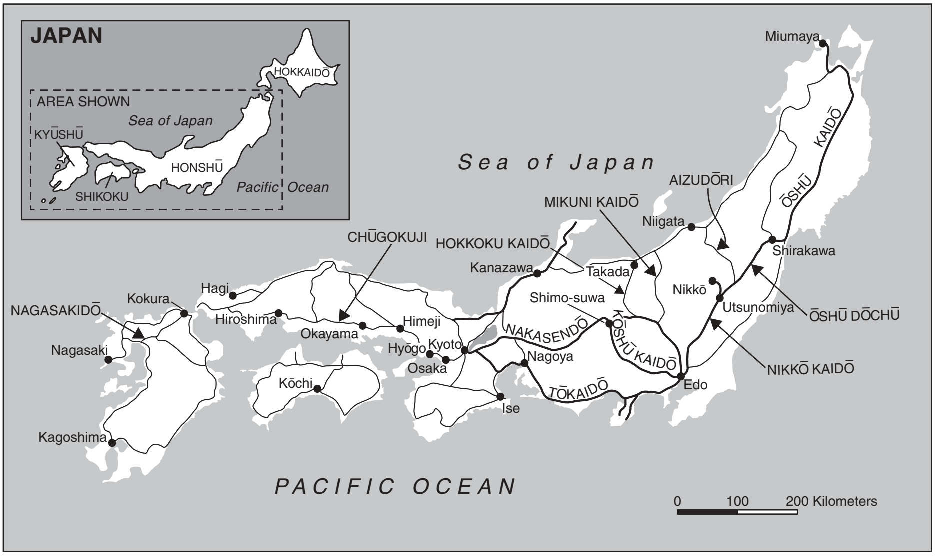


Figure 4.1 The Gokaidô network.
Source: From Vaporis 1994, 20.

and cargo, thereby infringing on the daimyo's right or ability to tax the people in their own domains (Vaporis 1986). In short, the shogunate usurped many of the discretionary powers of the daimyo, since they could no longer use domain resources exclusively for their own needs. In particular, because of the economic demands of periodic attendance on the shogun in the capital of Edo (a system known as "alternate attendance"), the daimyo could no longer conduct independent relations with neighbors or the world outside, and again, given the demands of alternate attendance, they could no longer be masters of their own movements (Vaporis 2008).

The nature of the early modern order in Japan, often referred to as "centralized feudalism" because of the balance of tension between the centripetal force of the shogunate and the centrifugal force of the daimyo, was actually conducive to the development of an integrated road system. The shogunate, motivated by military, administrative, and economic rationales, created the main arteries: the Gokaidô. The domains, on the other hand, created a secondary network out of the need to establish the castle town as the economic center of their territories, to provide adequate conditions for the passage of Tokugawa officials, to guarantee the passage of daimyo on their biennial trips of alternate attendance to and from Edo, and if possible, to establish overland links to the commercially developed Kinai region (Kyoto–Osaka area). The first Tokugawa shogun centered the Gokaidô highway network on his administrative center, Edo, from which radiated, directly outward, four major thoroughfares, while a fifth branched off one of the other four. Like the great roads of the Roman empire, which all began at the Forum, the Gokaidô began at Nihonbashi – the "Bridge of Japan" – which was the symbolic center of the land.

Network Users and Patterns of Movement

During the Tokugawa period the samurai, representing 5–6% of the population, were the elite in terms of social status. They stood above the other three estates (farmers, artisans, and merchants), who were known collectively as commoners, in the four-fold hierarchy of status that reflected the Confucian ordering of society derived from China. Samurai were defined in terms of hereditary status, a right to carry two swords, a right to hold political office, and a kind of cultural supremacy that was supported by their Confucian-based education. The four-tiered social system was a hierarchy of occupations ranked in terms of their utility to the state. Peasants produced wealth, in terms of rice; samurai consumed a substantial portion of it, but they rationalized their position as the top social group through arguments that they served as the political leaders and as the role models for the rest of society. Despite the Hollywood image depicted in films such as *The Last Samurai*, by the end of the seventeenth century samurai largely had been drawn off the land where they and their ancestors had lived; instead, they were compelled to live in urban centers, known as castle towns, close to their lords, the daimyo. There, however, by the early eighteenth-century samurai had grown poor relative to their social inferiors and were often in debt to merchants (Vaporis 2000).

Patterns of movement varied according to social status. The most frequent and regular forms of movement for samurai were the result of the system of alternate attendance. In what is perhaps one of the most unusual examples of a system of enforced elite mobility in world history, the daimyo were required by law to travel to Edo every other year and to wait there on the shogun, usually for a year at a time. This was conceived of as a form of feudal service, one of a set of military-type services the daimyo owed the Tokugawa in return for the bestowal of land grants (their domains) and the right to rule them. In order to perform their duties to the shogun appropriately, the daimyo required a large number of their samurai retainers to accompany them. As a result, every year, for more than two centuries, samurai in service to their daimyo marched back and forth on Tokugawa Japan's highways from their domain's castle town to the capital at Edo. Alternate attendance was in essence a military exercise, since it involved the movement of military men from across the country, and the composition of the entourages in many respects replicated a military force headed for battle.

The length of these processions varied depending on the size of the domain. For example, Kaga, the largest, had as many as 3,500 men, while Tosa, one of the 20 largest domains, had 2,500 men. Middle-sized domains could have 500–1,000 men, while smaller domains might have 100–200 (Vaporis 2008, 75–6). These figures, however, do not include the large numbers of men needed to transport provisions and supplies.

Given the considerable demands imposed on the infrastructure in order to support the movement and provisioning of such large numbers of men, the shogunate created a schedule to regulate the timing of the periodic travel both to and from the capital. First it divided the daimyo into two groups, so that only one half moved in a given year (primarily during the fourth and sixth months, based on a lunar calendar). Almost all daimyo were also assigned the highways to be used on their travels: for example, 146 were to use the most developed highway, the Tôkaidô (Vaporis 2008, 15–16).

Even outside of the system of alternate attendance, samurai could not move freely without the permission of their overlords, and usually their movements were in performance of duties to their daimyo overlord. Occasionally, they were given permission to travel for personal study and training in the martial arts. Some domains, however, banned outright recreational travel for them, and only in very rare cases were they given permission to travel to therapeutic hot springs.

Commoners moving on a non-permanent basis operated under different restrictions. These were, first of all, controls imposed by the government, which in principle wanted to restrict the movement of commoners, particularly farmers, so that they would concentrate on the production of crops. As a religious act, though, pilgrimage was the form of travel of which government officials were the most tolerant, and as a result most travel for commoners fell under the rubric of pilgrimage. Consequently, government regulations on travel were directed largely at the act of pilgrimage itself. Some of the ways in which the individual domains sought to regulate travel was by determining when and where it was allowed, who was allowed to travel, and establishing the length of time as well as the number of times a person could travel. These requirements could be imposed to some extent through the requirement of travel permits and passports. As a result commoners tended to travel during the off-season for agricultural work, during the late fall through the late winter, which meant that commoner and samurai operated on different cycles in terms of patterns of movement. Of course, movement on the highways was also restricted through social pressures exerted by family, particularly on women, not to mention self-imposed economic limitations.

Despite the varied restrictions imposed by government and the great "pomp and magnificence" of the daimyo processions, by the end of the seventeenth century it was the traffic of the commoner that largely set the character of the road (Kaempfer 1906, vol. 2, 330). With the improving economic conditions of the early Edo period, for the first time commoners were able to travel in great numbers for recreational purposes (Vaporis 1994, 217–36). Early in the eighteenth century, Englebert Kaempfer, a German physician, noted that the Japanese were "very much addicted to pilgrimage" (1906, vol. 2, 35). The roads filled with pilgrims headed to major temples and shrines or to hot springs; there were also merchants and hawkers plying their trade, begging orders of young and attractive nuns, transport workers in their minimal attire, and the poor and destitute who collected alms as they traveled. All of this movement was only made possible by the elimination of many of the impediments to physical mobility that existed prior to the Tokugawa period, such as political fragmentation, warfare, social instability, mountain bandits, and the proliferation of economic tolls. It led Kaempfer (again early in the eighteenth century) to remark:

> It is scarce credible, what numbers of people daily travel on the roads in this country, and I can assure the reader from my own experience, having pass'd it four times, that [the] Tokaido … is upon some days more crowded, than the publick streets in any [of] the most populous town[s] in Europe. (Kaempfer 1906, vol. 2, 330)

Infrastructure and its Administration

A Tokugawa official, early in the eighteenth century, wrote that the Gokaidô and the post stations on them were the "arms and legs of the realm" (Tanaka Kyûgu 1928, 67). To take his analogy further, we might say that the Tôkaidô, the greatest of the routes that linked the new political center of Edo with Kyoto, the ancient capital of the imperial court, was the "main artery," some 300 miles long, through which the lifeblood of early modern Japan coursed. In its completed form the Gokaidô network consisted of the Tôkaidô, Nakasendô, Ôshû dôchû, Kôshû dôchû, Nikkô dôchû, and eight auxiliary roads (Figure 4.1).

By the end of the 1630s the network assumed the structure that it would retain for the duration of the Tokugawa period. The road system connected 248 nodules, or post stations, spaced, depending on the road, from 4.2 to 12.1 km apart (Table 4.1). All stations fulfilled the various functions of rest stop, transport center, information communications center, and recreation area. They also assumed a variety of settlement patterns, from distinct stations along mountain passes or other stretches of road with populations in the hundreds to those occupying only a small

Table 4.1 Gokaidô statistics.

Road	*Number of stations*	*Average Distance between stations (km)*	*Average population per station*	*Average number of commoner inns (hatagoya) per station*
Tôkaidô	57	8.4	3,950	55
Nakasendô	67	5.2	1,165	27
Nikkô dôchû	21	5.0	2,264	39
Ôshû dôchû	10	7.9	1,186	27
Kôshû dôchû	45	4.2	779	11
Sayaji	4	4.6	946	15
Minoji	7	5.0	2,836	13.7
Mibudô	7	5.0	892	17
Reiheishidô	13	4.7	1,411	21
Mito-Sakuradô	3	5.1	1,141	13
Nikkô onaridô	5	8.4	1,567	7
Honzaka dôri	3	12.1	504	4
Yamazaki dôri	6	8.0	2,089	24

Source: Based on data from Kodama 1960, 177–230, based on a Tokugawa survey from 1843.

part of the physical space of a larger settlement, such as a port or castle town, with populations in the thousands (Vaporis 1994, 22–5).

The Gokaidô network was created by the Tokugawa regime early in the seventeenth century out of political and strategic needs. Of course it should be noted that, to a certain extent, the creation of an official road network and government-protected stations hindered the development of communications in that the system was created as a result of political and military, rather than economic, considerations. The shogunate required command of the country's main highways for the passage of its martial forces, the movement of its officials, and the conveyance of official communications. A central aim of its policy was to keep traffic flowing, and the shogunate tried to achieve this by nationalizing the central road system, the Gokaidô, by abolishing private barriers or tolls, and by promulgating regulations that prohibited and discouraged the disruption of transport services. Having emerged from the turbulent period of civil war, it is not surprising that the system forged by the Tokugawa reflected a consciousness of the military threat the other daimyo posed and a desire to impose order on a society that had largely lacked it for more than a century.

Even with the long years of peace that defined the Tokugawa era, the shogunate never lost its strategic concerns in administering the road system. This is evident in the detailed official maps – known as the *Gokaidô sono hokan bunken mitori nobe zu* ("Proportional Linear Maps of the Gokaidô") – created after a lengthy survey of road conditions and produced in 1806 in ninety-one volumes by the shogunate's Magistrate of Road Affairs office (*dôchû bugyô*) (Kodama 1977–85; Traganou 2003, 182–3; Figure 4.2). The shogunate ordered that the maps include accurate topographical and infrastructural details – structure of bridges, road and distance markers, location of offices of post station officials and inns for daimyo. Special attention is given to the right-angle turns in the road and in approaches to post-stations and castle towns (Figure 4.3). Information that goes beyond the limits of the road is offered too, including data on religious edifices (shrines and temples) and the population of the post stations. These detailed maps reflected the political centrality of the shogunate as well as its strategic concerns, evidenced by the fact that there were three original copies of the maps, one of which was kept in Edo castle and the other two by the Magistrate of Road Affairs.

In the first decades of the seventeenth century, the Tokugawa established fifty-three *sekisho*, or checking stations, to monitor traffic on the Gokaidô, wherever possible in strategic areas where traffic could be controlled most easily. Their initial purpose was military – to control the movement of the remnants of the coalition that had opposed the Tokugawa in 1600, in the last major battle of the period of civil war; later this purpose was expanded to include the monitoring of general traffic, the transport of guns, and compliance with the institution of alternate attendance. This policy is popularly known as *iri-deppô ni de-onna*, or "in-bound guns and out-bound women" (under the requirements of alternate attendance, daimyo wives and children, particularly daimyo heirs, were

Figure 4.2 Proportional linear maps of the Gokaidô network (*Gokaidô sono hoka bunken mitori nobe zu*).
Source: Courtesy of the Tokyo National Museum.

Figure 4.3 Kôshû highway at Kami Suwa station (from *Gokaidô sono hoka bunken mitori nobe zu*).
Source: Courtesy of the Tokyo National Museum.

Figure 4.4 The checking station at Hakone by the edge of Lake Ashi; note Mt. Fuji in the background.
Source: *Gokaidô sono hoka bunken mitori nobe zu*. Courtesy of the Tokyo National Museum.

required to remain in Edo as hostages when the lord returned to his domain). However, as in many other areas of governance, in administering the checking station system, the shogunate did not assume direct control. Instead it relied heavily on the efforts of its vassal daimyo, sending general regulations to officials at the checking stations but leaving the definition of day-to-day operations to the individual administrative authorities. For example, Odawara domain was charged with administering the checking station at Hakone (Figure 4.4), which lay at a strategic point of access to the Kanto region (where Edo was located) on the Tôkaidô and which was reputed to be the strictest in the land (Hakone komonjo o manabu kai 1976–8).

The principal targets of regulation for both the shogunate and the individual domains were the peasants, the backbone of Tokugawa society, who worked the land and produced the taxes that fueled the machinery of government. They were by no means the only target, however, as all segments of society, from the highest samurai to the lowliest outcast, came under some sort of controls (Vaporis 1994, 148). Alternate attendance required that travelers be checked at *sekisho* in order to prevent daimyo wives and children, held as political hostages, from leaving Edo without permission. In a sense, then, commoners might be seen as scapegoats of a system designed to control daimyo politically; for the system to be effective, all travelers, not just samurai, needed to be checked. Yet to hold that commoners were checked at *sekisho* only as a result of alternate attendance is to miss the point that the Tokugawa and their fellow daimyo idealized a society where most of the population remained tied to the land.

To regulate movement, the shogunate and the domains required most travelers to obtain written permission in the form of a travel permit. While travel permits or passports were known in other parts of the world, particularly in Tudor and Stuart England where they were used to control the movements of the vagrant poor, the Tokugawa system appears to have been the most developed (Beier 1985). On the Gokaidô system, however, the shogunate almost invariably required permits only when the traveler was moving in a direction away from Edo, thus reinforcing a mentality of Edo as the center. It was nonetheless safer to have a permit at all times in case there was a problem at a checking station; or, should the traveler fall ill on the road, a permit could possibly save his or her life.

The shogunate maintained a gendered travel policy, subjecting women to many more restrictions than men until the relaxation of alternate attendance in 1867 (Vaporis 1994, 155–74; Nenzi 2008, 71–91). Not only was the permit application process for women highly regulated, but the permits themselves were required to contain detailed information. An official at the checking station carefully made sure that the physical description of the woman given on the permit matched up with the traveler herself. Not only was a lookout kept at checking stations for "outbound women" but also for young girls who might be disguised as boys.

The shogunate did not simply observe traffic on its road network; it also attempted to direct its flow as well. Travelers were instructed to keep to the main highways in the Gokaidô network, in part so that traffic could be monitored but also because of the economic imperative of supporting the official system – a type of economic protectionism. Accordingly, the shogunate enjoined the daimyo to make less use of secondary roads, arguing that "If the number of travelers using branch roads increases, there will be no meaning to having a main road. Henceforth, use the main roads as much as possible" (*Kinsei kôtsû shiryô shû*, 1965–80, vol. 2, 48–9). Likewise, travelers were forbidden to cross rivers at any but the officially designated crossing place. The movement of women was further channeled into certain routes where it could be more easily monitored: it was prohibited for any but local women to pass through 20 out of the 53 checking stations.

Given the requirements for permits and inspections that women faced, many opted to avoid the checking stations by traveling on side roads. More precisely, traveling parties with women (since women ordinarily did not travel without male company) would take to these side roads, which became known as "women's roads" (*onna no michi*). For example, the rural samurai Kiyokawa Hachirô, who was traveling with his mother on a pilgrimage to Ise shrine in 1855, wrote, "If you are traveling in the company of a woman, no matter how early you arrive at Sekigawa [checking station], you are forced to spend the night there. The next morning you wake up early and sneak past the guard house" (Kiyokawa 1969, 40). And that is precisely what Kiyokawa, his mother, and a group of thirteen women with a single male escort did.

In light of its principal functions, it is not surprising that the transport system was geared towards official use; that is, official, rather than private, traffic and communications were given top priority. Moreover the Tokugawa "rigged" the costs of using the system to their own advantage and therefore needed to create a system of transport corvée labor to support it (Vaporis 1994, 58–74). The shogunate granted post stations a monopoly but required them to perform transport services for its own official travelers and cargo at either a low, fixed rate or at no cost. In prioritizing its own travelers and cargo, however, and allowing commoner transport – which was charged a higher, market-based rate – to be undertaken only when the post-station labor force was not handling official needs, the system in effect discouraged private but potentially profitable traffic.

The delays imposed on private individuals as second-priority users of the transport system also led some merchants to try to beat the system by acquiring the right, through purchase or outright deception, to have their commodities transported as "official" goods. It also led merchants to seek alternative routes outside the shogunate's network, on "side roads." These private and illegal roads were attractive to individual users, since they did not have to wait for official travelers to be serviced first and their goods could be carried to their destination without being relayed – i.e. unloaded and reloaded at each post station, as was required on the official network. Side roads were also attractive because they often provided shortcuts. As in France and elsewhere, the government did not always build roads where the people found them the most useful; the state's purposes in building them and the people's needs did not necessarily coincide (Weber 1976, 195–225).

Private transport became a problem for the shogunate on side roads, particularly in a central region of Japan known as Shinano, where individual operators set up their own packhorse network (*chûma*) within which one transport operator could lead a train of four or five horses instead of being limited to just one horse, as on the official Gokaidô (Wigen 1995, 44–52). The shogunate was unable to stop these private operators, but it managed to tax them and limit the type of goods they could carry, thereby making the system quasi-official. Nevertheless, conflict between official post stations and private operators over transport rights erupted rather often. Thus in some areas the slow, cost-inefficient government system began losing out to private overland and sea transport from the late seventeenth century on.

The Gokaidô was established for official rather than private use. However, once society was relatively peaceful and economic conditions improved, commoners were able to take advantage of the infrastructure, giving what had been essentially a military-political system an overwhelmingly plebeian character. The transport system was unexpectedly transformed in character through its use by the common people, particularly for travel as recreation. Travel-related facilities specifically geared for use by commoners – such as full-service as well as no-frills inns and teahouses – proliferated on the Gokaidô network during the seventeenth century, and a system developed by merchants for relaying correspondence was so efficient that even political authorities turned to it for routine business. This was one further indicator that the character of communications had changed.

Despite their lower social status, commoners were not required to travel on shank's mare while their superiors rode horses or were carried in palanquins. Surprising though it may seem for the status-conscious society that was Tokugawa Japan, the mode of transport available to individuals on the highways was determined by economic rather than social considerations. Thus, with their improving financial lot, commoners could enjoy the same privileges as their social betters: they could engage porters, sedan chairs, and horses. They did so, paradoxically, despite a legal prescription on commoners riding horses that remained in effect until after the Meiji Restoration of 1868.

Conditions

The Tokugawa constructed a well-integrated system of overland communications. The Gokaidô was much praised by visitors from abroad, who compared conditions in Japan, at various times during its 250-year-long period of relative seclusion from the west, quite favorably with those that they experienced at home in Europe. For example, the Swede Charles Thunberg, a doctor attached to the Dutch commercial outpost on Deshima, spoke quite positively of the general state of Japan's thoroughfares:

> The roads in this country are broad, and furnished with two ditches, to carry off the water, and [are] in good order all the year round; but especially at this season [spring], when the Princes of the country as also the Dutch, take their annual journey to the capital. The roads are, at this time, not only strewed with sand, but, before the arrival of travelers, they are swept with brooms; all horse dung, and dirt of every kind, removed, and in hot, dusty weather, they are watered. (Thunberg 1785, vol. 3, 107)

His countryman, Olof Willman, was similarly impressed with the conditions on the Tôkaidô, writing that, "Probably no other road in the world costs as much as this" (Willman 1970, 56). Swiss envoy Aimé Humbert, writing in the last years of the shogunate when it was near collapse, wrote, "Compared with the great roads of Europe, the Tokaido is not the least bit inferior." In terms of the conveniences it offered the pedestrian traveler, he noted, "it is in certain respects superior" (Humbert 1969–70, vol. 1, 260). Kaempfer and the Englishman Rutherford Alcock frequently noted that the road on different stretches of the Tokaido was a "beautiful sanded avenue" or "straight and even" (Kaempfer 1906, vol. 3, 107–14; Alcock 1969 [1863]. Difficult, steep areas on a number of roads were paved with stones, as was the case with the area around Hakone (Figure 4.5). This was done both to facilitate passage when the road was dry and to prevent mudslides when it was raining. Excavations on some of these roads have revealed that the rocks were not simply laid in place, but rather that careful attention was paid to the underlying surface as well as to drainage (Vaporis 1994, 42–3).

To improve road conditions, on each side was an embankment, about 1 m wide on the Tôkaidô, where cryptomeria or other types of trees were planted to provide

Figure 4.5 Hata, near Hakone. Hand-colored albumen print, Japanese. Studio unknown, ca. 1870–80s.
Source: Davis Museum and Cultural Center, Wellesley College.

shade for travelers and also to prevent erosion of the road surface. As Thunberg noted, drainage ditches were also provided at the sides of the road. Furthermore, to aid the traveler and to facilitate administrative matters, the highways were divided into measured units, known as *ri* (2.44 miles), beginning from Nihonbashi in Edo, which were marked by two small hills and planted at the top with one or more trees (typically Chinese nettle). Road markers, or guideposts, were found at many of the junctions of two or more routes.

Another reason that road conditions on the Gokaidô were good was the relative absence of the wheeled traffic that caused contemporary European roads to fall into disrepair. While there is no documentary evidence for a statutory ban on the use of carts on the Gokaidô, such a law may nevertheless have been in effect, for carts are known to have been formally allowed to operate only on certain limited stretches of road outside of urban areas and in a number of cities. Restrictions on their usage seem to have been the result of the shogunate's desire to prevent any interference with the flow of traffic (heavy carts are prone to spills) and the opposition of pack-horse operators, who felt their livelihoods were threatened (Vaporis 1994, 45–8).

Few rivers crossing Tokugawa highways were bridged; the reason, it has been argued, was either military considerations, or a belief that the topographical difficulties were insuperable. While both of these arguments are germane, they are only partial, and misleading, explanations that fail to take climatic conditions into consideration. The greatest number of large-scale rivers had to be traversed on the Tôkaidô, where there were eight ferry-boat crossings and the traveler was compelled to ford four major rivers. However, over two other major rivers, the Toyokawa and Yahagi, spectacular bridges were built. Further rivers, like the infamous Ôi, were not bridged because of their great propensity to experience flash floods, although temporary bridges were constructed during the dry season. The Rokugô River was bridged from the early seventeenth century, but even though it was located close to the shogunate's capital in Edo, the government tired of the costs of repeatedly rebuilding it after flash floods and instituted a ferry boat operation. After the fall of the Tokugawa in 1868, the new Meiji government built a wooden bridge, but this too was washed away several times. Not until 1925 was a permanent bridge of steel constructed (Vaporis 1994, 48–55).

The Highway in Literature and Popular Imagination

Few institutions work exactly as designed, and the checking stations and the permit system necessitated by the Gokaidô were no exception. Were this not the case, it would be difficult to account for the emergence of travel as recreation and the creation of a "culture of movement" that was both a symptom and a stimulus for travel. The widespread use of side roads and the increasing reluctance of officials to discourage the practice, as well as the evidence for their greater leniency at checking stations (Vaporis 1994, 175–92), led to a boom in travel amongst commoners that began in the late seventeenth century and was fully evident a century later.

The development of travel in the consciousness of commoners as a means of play, a release from the quotidian, provided the basis for a culture of movement that developed in Japan from the late seventeenth century (Bresler 1975). This culture consisted, in part, of a vast body of travel literature, woodblock prints, and popular maps. According to Jilly Traganou (2003, 177), the "origin of all travel artifacts was the *dôchûki*, a linear, diagrammatic book format that followed the itinerary of the road." These often took the form of sketch maps with small marginal notes. Another pictorial form was the picture-game board (*esugoroku*), often with a travel-related theme, which was a popular pastime for both children and adults. Woodblock print artists like Hokusai and Hiroshige, working from the late eighteenth to the early nineteenth centuries, devoted entire series of prints to the Tôkaidô and other major highways. A third major development were road maps, produced in a variety of formats, including screens, fans, mirrors, plates, and even kimono. One of the earliest examples of a woodblock-printed map with high pictorial resolution is the *Tôkaidô bunken ezu* ("Proportional Map of the Tôkaidô"), made in five folded volumes of about 37 m, with illustrations by the famed woodblock print artist Hishikawa Moronobu (d. 1694). The map included geographical and meteorological conditions (such as flooding rivers), distances between stations, lengths of bridges, the locations of mile-markers (*ichirizuka*), and depictions of the variety of travelers along the road (Cortazzi 1983, 33; Traganou 2003, 178).

Literary forms of the culture of movement consisted of a popular and easy-to-read literary genre known as *kanazôshi*, which were often humorous narratives; travel diaries, which were generally simple travel records interspersed with personal reflections on life and bits of verse (Bresler 1975, 136); instruction books (*ôraimono*) for commoner children in temple-schools through which they could learn the characteristics of the fifty-three stages of the Tôkaidô from a simple, easy-to-remember type of doggerel; travel guides (*annai-ki*); and how-to-books, such as the well-known "A Collection of Travel Precautions" (*Ryokô yôjinshû*) (Vaporis 1989).

This culture of travel developed in response to a number of inter-related social and economic trends. For one, literacy spread quickly, such that by the end of the seventeenth century there emerged a truly popular culture, perhaps the first anywhere in the world. Secondly, a period of prolonged peace and firm political control created conditions in which travel became safe. Thirdly, improving economic conditions allowed for increasing numbers of commoners to engage in travel and to become consumers of the body of travel-related literature and art. Lastly, as the highway network developed facilities that catered to the needs of commoners, travel became much more desirable. Many of the post stations, for example, had their own famous products (*meibutsu*), such as the grated yam soup (*tororo shiru*) of Maruko, the dyed cloth of Narumi, and the simple woodblock prints of Ôtsu (*Ôtsu-e*), while others – like Shinagawa, Akasaka, and Mishima – became famous for their brothels. Through the development of a culture of travel, movement on the highways, and particularly on the greatest of them, the Tôkaidô, became not an adventure into the unknown but a place of diversion and play, a comfortable ground of escape from political controls and daily life, a time when (according to the early nineteenth-century author Jippensha Ikku) one could flee from the bill collectors at the end of the month and cleanse one's life of care (Jippensha 1960, 237, 323).

Conclusion

In its formative period the Tokugawa shogunate created a national system of transportation and communications, one that drew wide praise from European travelers who compared conditions in Japan favorably with those back home. Political forces shaped the contours of the system, making it less efficient than it might have been, but nonetheless it functioned adequately, meeting most of the needs of the time. Economic forces shaped the system as well; restrictions on the use of side roads and short cuts, as well as on the use of water routes, were imposed in order to support the shogunate's network by directing traffic onto the main roads. The cost of reconstructing bridges destroyed by raging waters led, in certain instances, to the decision to institute a river-crossing service rather than to rebuild the structure. Both political and economic elements were involved in the Tokugawa's decision not to allow unrestricted use of carts, the end result of which was that road conditions were optimized and the possibility of traffic tie-ups minimized.

The Tokugawa state had only a limited ability to impose its will to restrict the movement of people. Permit systems devised early in the seventeenth century were created by officials who could not possibly have foreseen that the climate of peace and economic growth would unleash the great energies of the people in the form of increased travel. Official procedures for travel were never significantly amended to take into account the substantial mobility that characterized society from the late seventeenth century on. Troublesome procedures for obtaining permits only encouraged evasion of the system, particularly for women, who had to overcome political and social controls in order to travel. The volume of complaints by government officials about the numbers of people flouting the law clearly indicates that travel regulations served much the same function as sumptuary legislation and were equally ineffective. Moreover, the state was only weakly coercive, exhorting the people not to engage in "useless" travel but failing to impose substantial penalties. Officials at checking stations applied regulations in an increasingly flexible manner, which may have reflected "a preference of the regime for moral rather than legal controls" (Henderson 1966, 214–25). Accordingly, by the end of the eighteenth century travel had developed into what seems like a national obsession. The evidence for this can be found in the development of a culture of travel, the physical manifestations of which were produced in large numbers and included travel guidebooks, personal travel accounts, woodblock prints, travel game boards, maps, and school textbooks.

Pilgrimage and recreational travel, and the well-developed transport infrastructure that made them possible, played an important part in the emergence and diffusion of Edo-period popular culture, as well as in promoting national integration. Through travel, individuals could break free from the constraints that might otherwise have tied them to their localities. Once on the road, the Tokugawa man or woman could make the acquaintance of people from across political boundaries and extend their knowledge of the world in which they lived. Or, as Jippensha Ikku said, the "Edo man can make acquaintance with the Satsuma sweet potato" (Jippensha 1960, 237). Through travel the Japanese of the Tokugawa period came to know themselves and their land more fully, building the solid foundation which was necessary for the formation of a national identity in the years after the arrival of Commodore Perry's black ships.

References

Alcock, R. 1969 [1863]. *The Capital of the Tycoon: A Narrative of a Three Years' Residence in Japan*, 2 vols. St. Claireshores: Scholarly Press.

Beier, A. L. 1985. *Masterless Men: The Vagrancy Problem in England 1560–1640.* London and New York: Methuen.

Bresler, L. 1975. "The Origins of Popular Travel and Travel Literature in Japan." PhD diss., Columbia University.

Cortazzi, H. 1983. *Isles of Gold, Antique Maps of Japan*. Tokyo: Weatherhill.

Hakone komonjo o manabu kai, ed., 1976–8. *Hakone gosekisho nikki kakinuki*, 3 vols. Hakone: Hakone machi kyôiku iinkai.

Henderson, D. F. 1966. *Conciliation and Japanese Law: Tokugawa and Modern*, vol. 1. Seattle: University of Washington Press.

Humbert, A. 1969–70. *Anberu bakumatsu Nihon ezu*. 2 vols., trans. Takahashi Hôtarô. Tokyo: Yûshôdô shoten.

Jippensha Ikku. 1960. *Hikzakurige or Shanks' Mare*, trans. Satchell. Tokyo and Rutland, VT: Charles E. Tuttle.

Kaempfer, E. 1906. *History of Japan, Together with a Description of the Kingdom of Siam, 1690–1692*, 3 vols., trans. J. G. Schnechzer. New York: Macmillan.

Kinsei kôtsû shiryô shû. 1965–80, 10 vols. Tokyo: Yoshikawa kôbunkan.

Kiyokawa Hachirô. 1969. *Saiyûsô*. Oyamatsu Katsuichirô, ann. Tokyo: Heibonsha.

Kodama Kôta. 1960. *Shukueki*. Tokyo: Shibundô.

Kodama Kôta, ed. 1977–85. *Gokaidô sono hoka bunken mitori nobe ezu*, 130 vols. Tokyo: Tôkyô bijutsu.

Nenzi, L. 2008. *Excursions in Identity: Travel and the Intersection of Place, Gender, and Status in Edo Japan*. Honolulu: University of Hawai'i Press.

Tanaka Kyûgu. 1928. "Minkan shôyo." In Takimoto Seiichi, ed., *Nihon keizai taiten*, vol. 5. Tokyo: Kenmeisha.

Thunberg, C. P. 1785. *Travels in Europe, Africa, and Asia.* London: W. Richardson, Cornhill, and J. Egerton, Whitehall.

Traganou, J. 2003. "Representing Mobility in Tokugawa and Meiji Japan." In N. Fieve and P. Waley, eds., *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, 172–207. London: RoutledgeCurzon.

Vaporis, C. N. 1986. "Post Station and Assisting Villages: Corvée Labor and Peasant Contention." *Monumenta Nipponica* 41.4: 377–414.

Vaporis, C. N. 1989. "Caveat Viator: Advice to Travelers in the Edo Period." *Monumenta Nipponica* 44.4: 461–83.

Vaporis, C. N. 1994. *Breaking Barriers. Travel and the State in Early Modern Japan.* Cambridge, MA: Council on East Asian Studies, Harvard University.

Vaporis, C. N. 2000. "Samurai and merchant in mid-Tokugawa Japan. Tani Tannai's *Record of Daily Necessities* (1748–54)." *Harvard Journal of Asian Studies* 60.1: 205–27.

Vaporis, C. N. 2008. *Tour of Duty. Samurai, Military Service in Edo, and the Culture of Early Modern Japan*. Honolulu: University of Hawai'i Press.

Weber, E. 1976. *Peasants into Frenchmen. The Modernization of Rural France 1870–1914.* Stanford: Stanford University Press.

Wigen, K. 1995. *The Making of a Japanese Periphery, 1750–1920.* Berkeley: University of California Press.

Willman, O. E. 1970. "Nihon ryokôki." In Murakawa Kengo and Ozaki Yoshi, trans., *Serisu Nihon tokôki. Viruman Nihon taizaiki*. Tokyo: Yûshôdô.

5

Obliterated Itineraries: Pueblo Trails, Chaco Roads, and Archaeological Knowledge

James E. Snead

> *The Road is silent; it is the humblest and the most subtle, but … the greatest of the spells which we inherit.*
>
> (Belloc 1911, 4)

Archaeological understanding of paths, trails, and roads is imprisoned by structures of data and structures of knowledge. The empirical evidence is thin and difficult to come by. Signatures of travel through the country are often faint, the landscape is Balkanized by modern property boundaries, and the palimpsest of routes that *have* been preserved is confounding.

Traditionally, we have not seen information about these features to be particularly useful, anyway, assuming that walking back and forth is something that everyone has done in a similar fashion, always. Where we have taken an interest (for a summary, see Snead, Erickson, and Darling 2009), we have imposed a dichotomy on the data, distinguishing between "roads" on the one hand and paths, pathways, tracks, and trails on the other. To this way of thinking, roads reflect intentionality. Someone had them built – with all the agency the term entails – so that they are "meaningful" features in their own right. Paths, in contrast, are seen as a passive byproduct of some more "natural" activity that is purposeful only in the most functional sense. This dichotomy reflects numerous additional preconceptions, among which sociopolitical stereotypes are prominent. Trails and paths are seen as reflections of less complex societies, in which the overt forms of action embodied by roads are seen to be unlikely. Roads portray order, rule, and control, symbolizing

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

status, authority and their entangled associations: all characteristics thought relevant only for cases of "complexity."

There is logic to the road/path stereotype, but it is quite clearly inseparable from our own cultural relationship with roads. This was succinctly phrased by the classical archaeologist J. H. Young, who noted "the Greeks could build good roads if the need for them was sufficiently compelling, but they had no sense of the ROAD, as the Romans did, and as we do to-day" (Young 1956, 94, emphasis in original). Whatever the historical antecedents of this road-ness, it is intrinsic to the world view of present day Euro-Americans, and inevitably permeates our archaeological vision.

Our cultural perception of old roads and trails also includes a tendency to see them as we want them to be – Belloc's "spell" (1911, 4) – rather than as they were. The title of this chapter is derived from Gustaf Sobin's *Luminous Debris,* in which he describes our own "obliterated itineraries" as integral to explorations of the past, in which "we cannot help but feel that we're interpreting something of ourselves" (1999, 199). Walking ancient paths is a charged practice in the Euro-American tradition, and these features are romanticized as particularly evocative traces of bygone eras. This imposition of nostalgia permeates much of the older literature on the subject. "By many a quiet Kentish homestead the grassy track still winds its way along the lonely hill-side overlooking the blue Weald," writes one Victorian author, "and if you ask its name, the labourer who guides the plough, or the waggoner driving his team, will tell you that it is the Pilgrims' Road to Canterbury" (Cartwright 1893, 2). Archaeologists are conscious of such overt bias, but a tilt towards "tradition" persists. As Andrew Fleming notes, "we might just pause to question our fondness for this word 'traditional,' and ask whether it is destroying our historical understanding" (1998, 1).

Sarah Harrison (2003) takes on the case of the famous Icknield Way, an apparently ancient route running across southern England that has been widely discussed in the archaeological literature (e.g., Bryant and Burleigh 1995; Crawford 1960, 78; Darvill 1996, 148). Her review of the textual sources on the subject finds that most date to periods after the "myth" of the Icknield Way had become current, and the fact that she can identify no direct empirical evidence for the Icknield Way itself – despite the preservation in the same area of numerous landscape features of considerable antiquity – is particularly compelling. "Perhaps the most striking thing about the idea of a continuous, prehistoric, Icknield Way," she writes, "is that the main concepts underpinning it are no longer fully accepted by archaeologists, but are rooted in outmoded concepts of prehistoric settlement, economy and society" (Harrison 2003, 5).

Empirical evidence for a related and equally renowned British route, the Ridgeway, is also suspect, with intensive surface survey suggesting that parts of it more closely resemble "a bundle of drove-ways used in transhumance" than a major long-distance route (Fowler 2000, 256). Peter Fowler's conclusions expose a critical fault line in scholarly understandings of such features, since his study appeared in the same year as a GIS (geographic information systems) analysis of a nearby stretch of the Ridgeway that supported the traditional understanding of the route, at least as a logical axis of movement (Bell and Lock 2000). The need for further fieldwork notwithstanding, such contrasting arguments highlight the difference between where/what we think things should be or have been – on the basis of terrain, the broader settlement pattern, etc. – and where/what they actually were.

Here I am interested in exploring one particular truism – that roads uniquely "fix" space, and thus impose order on movement. The apparent permanence of roads is worth examining in greater detail because it pertains to the idea that all other sorts of routes are wandering and ephemeral. Numerous references to the allegedly expedient and transitory nature of paths and trails can be found in the archaeological literature on the subject (e.g., Crawford 1960, 75). This preconception lies near the heart of our thoughts about these features and makes it difficult to evaluate landscapes of movement in the archaeological record.

A review of the evidence indicates that what might be described as *emplacement*– the physical inscription of movement into the landscape – is a widely distributed phenomenon associated with human travel in many times and circumstances. It is also clearly not a feature of roads alone but is widely associated with paths and trails as well. There are numerous ethnographic and historical references to trails with deeply worn fabric accompanied by numerous monuments. An early twentieth-century visitor to the "Old North Trail" in Montana, an indigenous route along the east front of the Rocky Mountains, noted that the tracks of horse-drawn travois (or sledges) "were still plainly visible, having been worn deep by many generations of traveling Indians" (McClintock 1910, 18). A particularly dramatic example of emplacement is associated with the West African city of Benin. A complex network of deeply inscribed trails is detailed in accounts of the nineteenth-century British punitive mission which attacked the city. In one case, a path is described as

> just broad enough for one man to walk in comfort, touching the bushes on each side with outstretched arms. Where the soil is soft, feet treading for centuries have worn the path to a lower level, and banks strewn with dead leaves and debris rise each side almost to the level of a man's head. (Bacon 1897, 47)

The Benin trails have received modest archaeological attention (e.g., Darling 1984, 12), and the increasing number of similar archaeological examples of emplaced features from other parts of the world (cf. Lippi 2000; Ur 2003; 2009) indicate that they are not anomalies.

The emplacement of paths and trails is often complemented by constructed landmarks and other "formal" attributes. The Bad Pass Trail in Montana is defined both by travois ruts and an estimated 300 stacked stone cairns, unmistakably emplacing the route (Loendorf and Brownell 1980, 76). These are not waymarkers in the simple sense, but more complexly symbolic features associated with movement. Another example, Navaho cairns along trails in Cañon de Chelly, Arizona, "are usually not erected to *indicate* the trails but rather for prayer" (Jett 2001, 26, emphasis in original; cf. Goddard 1913). Spectacular cairns of thousands of stones were once features of mountain passes in the Colorado Desert of California, not simply marking an obvious route but instead identifying some other culturalized significance of the passage (cf. Rogers 1966, 51). Some trails related to these cairns were both marked and inscribed, including the "Trail of Dreams," where heavy boulders were cleared from the route over many miles (Pigniolo, Underwood, and Cleland 1997, 93; von Werlhof 1988, 58).

It is evident that emplaced trails channeled human movement through landscapes for lengthy periods of time, fixing space in a way analogous to that usually argued for roads. At a minimum this implies that the role of construction and formality in landscapes of movement is less straightforward than is often acknowledged. Payson Sheets (2009) has recently suggested that any symbolism associated with fixed movement clearly has its origins in the experience of travel along trails and paths rather than as new ideas imposed by roads. His own case study, drawn from Costa Rica, suggests that the construction of sunken roads and entryways in Central American chiefdoms was a strategy designed to mimic the entrenched pathways of earlier eras.

As Sheets and I would argue, formality in landscapes of movement is what you make of it, since landmarks produced by action and landmarks produced by intention are intrinsically related. In other words, whether a road was built by a particular leader or whether it was produced by generations of people walking the route, it might ultimately be perceived in the same way. Some authors describe roads as monuments (Lekson 2006, 32; Laurence 1999, 18), which indeed they are, but it was not through monumentality alone – construction at a large scale or with massive labor investment – that they attained this distinction.

Roads, paths, and trails imply not simply communication but *connection*, which is not the same thing. It may seem simplistic to say that the essential function of these features is to connect, but how they establish such connections makes them particularly complex and interesting. Instead of discussing what paths, trails, and roads did, we must examine what they were – *places* with particular characteristics associated with movement. And movement is not a "neutral" or value-free process. It engages links and boundaries, opportunities and barriers, belonging and exclusion. To the inhabitants of the Yorkshire Dales, the track passing the village brought "opportunities and also trouble" (Fleming 1998, 110). This was true even for those most dedicated of road builders, the Romans: "Pliny the Elder was clearly aware of the moral effects of roads, when he gave vent to his feelings, old Roman that he was: 'Which way was vice introduced if it was not by the public road?'" (Chevallier 1966, 204).

Where roads are distinct – as particular landscapes of movement – lies not in the fact that they fix movement in place but that they manipulate the symbolism of movement to prioritize particular relationships. To the people of the American frontier in the early nineteenth century, making and maintaining roads "symbolized a man's participation in the larger society, his contribution to diminishing the wilderness, and his manliness" (Friend 2005, 25). Modern road-building in New Guinea has a distinct negative effect on local populations for whom movement

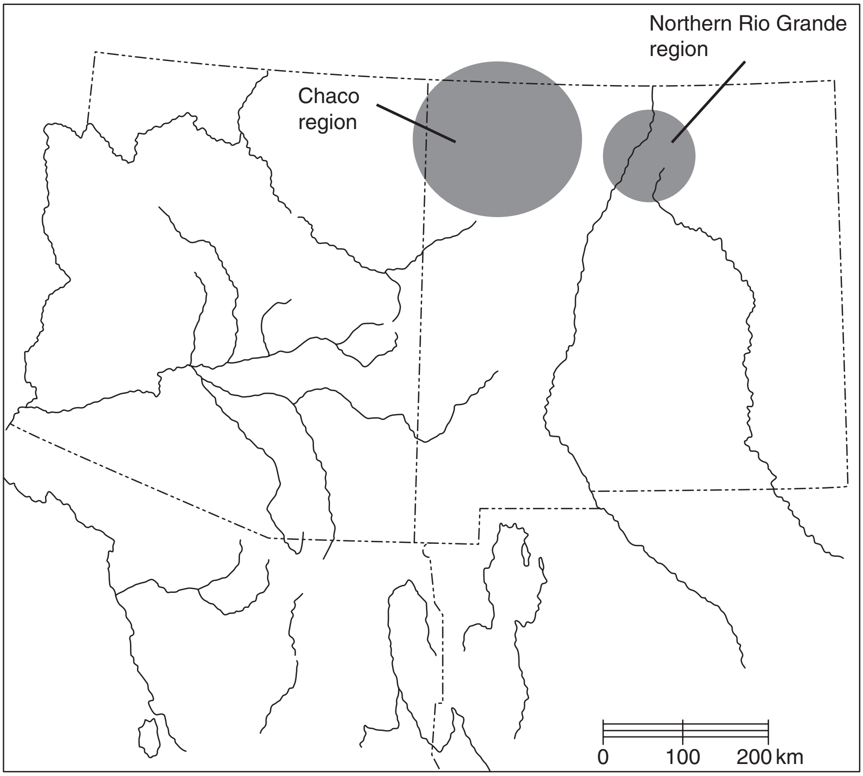


Figure 5.1 The North American southwest, illustrating the Chaco and northern Rio Grande regions.

has connotations of history and identity (cf. O'Hanlon and Frankland 2003). Road-building, in this case, was an external process that subverted local meaning as inscribed into the landscape. The archaeological imagination can see a similar process at work in aerial photographs of southwestern England, where Roman roads slice across indigenous tracks that may have been used for centuries (Crawford and Keillor 1928).

It is true that roads and trails as phenomena cannot be entirely stripped of functional and sociopolitical corollaries. Wheeled vehicles have certain requirements, as do armies on the march, and the labor mobilization associated with societies organized at larger scales is, cross-culturally, an essential component of road construction. But these characteristics are a matter of context and degree, rather than a fundamental element of the concept. In other words, the symbolism of formal roads can be less a statement of power and control and more a statement of the meaning/associations of movement in specific cultural contexts. Thus, for example, the Persian Royal Road was famous enough to be considered the product of divine construction (Graf 1994, 168), but there is little modern evidence to suggest that it was paved or had additional formal features beyond rest stops for travelers on official business (Potts et al. 2007; Briant, this volume).

Road building thus reconfigures the signature of travel in its various manifestations in order to inscribe particular relationships into the landscape. Viewing roads, paths and trails as landmarks of connection, whether organic or materialized (in the sense of De Marrais et al. 1996; Snead 2009), thus allows archaeologists to see them differently and perhaps to understand them in new ways. I find this approach very useful regarding the American Southwest, in which landscapes of movement are particularly evocative but poorly understood. In order to make the case, I will begin with the less well-known example of Pueblo trails, particularly those in the eastern Pueblo landscape of New Mexico, before moving on to the comparatively famous Chaco roads, which I will discuss in greater detail (Figure 5.1). Themes of emplacement and connection allow us to view Pueblo trails and Chaco roads in ways that diverge from our traditional perspectives, leading to different understandings of their nature.

Pueblo Trails

The Rio Grande Valley of New Mexico is home to the eastern Pueblo people, speakers of the Tewa, Tiwa, Towa, and Keres languages, who despite this linguistic diversity have a closely shared history and culture. When first encountered by the Spanish in the mid-sixteenth century, this population was settled along the river and its tributaries, living in aggregated villages that in some cases housed several hundred residents. The early chroniclers described a relatively egalitarian social structure, with modest authority dispersed among religious leaders and war "chiefs." The pueblo villages were relatively autonomous, although affiliations based on ethnicity and kin ties provided some regional organization that shifted over time and across space.

The pueblos *were* closely connected, however, by an elaborate system of paths and trails. This network received little comment in the colonial era, despite the fact that the Spanish used it and superimposed their own infrastructure on its routes. The *Camino Real*, which conveyed travelers from New Mexico to the more populous colonial zones to the south, passes right across at least one late Pre-Columbian village and probably marks a trail of deep antiquity[1] (Figure 5.2). There was not complete congruence between the Spanish and indigenous trail networks, and the disruption of local relationships brought about by colonial interference meant that some of the older routes were forgotten. A significant percentage, however, probably remained active into recent times.

When anthropologists began to take an interest in Pueblo culture in the late nineteenth century they used some of the old trails and commented on their nature (e.g., Bandelier 1892, 146–47; Stevenson 1883, 432). John Peabody Harrington's *Ethnogeography of the Tewa* (1916) contains brief descriptions of more than twenty trails that were known by his informants and identifiable on the ground.

Figure 5.2 The pre-Columbian pueblo of Tzenatay (La Bajada), north at bottom, illustrating the colonial-era *Camino Real* crossing the site from the southeast.
Source: J. Snead.

Considerable ethnographic information was thus recorded concerning the use of trails and the cultural associations of movement, both in specific southwestern regions (e.g., Fewkes 1906, 365) and in the Pueblo country as a whole (e.g., Nabokov 1981; Parsons 1996 [1939]).

Despite this anthropological commentary, archaeological approaches to Pueblo trails for much of the twentieth century were discontinuous and confused. At the pueblo of Gran Quivira, for instance, swales on the ground between the site and a nearby water source were long considered to be irrigation features (Toulouse 1945), until it was observed that topography would have made them useless for moving water (Howard 1959). Even in modern times, major landscapes of movement, such as those linking the Tewa pueblos with their northern Tiwa neighbors and the countryside beyond, remain unrecorded and largely unremarked upon (Richard Ford, personal communication, 2007). Although research on Pueblo trails is gaining traction elsewhere in the Southwest (cf. Ferguson, Berlin, and Kuwanwisiwma 2009; Hart and Othole 1993), it remains sparse in the Rio Grande region.

The principal exceptions to this scholarly neglect are the trails of the Pajarito Plateau, west of Santa Fe. The preservation of these features, worn into a tuff bedrock by foot traffic and largely protected from recent disturbance, has made them accessible to archaeologists and amenable to interpretation (Figure 5.3). Trails feature in the maps and commentary of Edgar Lee Hewett, who pioneered

Figure 5.3 Segment of the Sandia Canyon trail network on the Pajarito Plateau, illustrating worn pathway in tuff bedrock.
Source: J. Snead.

archaeology in the region (1906, 1953), and have been recorded by most of the archaeological projects to work in the region since.[2]

Hewett's comment, now more than a century old – that "these paths afford an imperishable record of ages of coming and going" (1908, 18) – assessed their value to archaeology in terms that reflect our collective judgment even today.[3] His use of the term "imperishable" represents an interesting inversion of ideas about paths and trails used by indigenous peoples. They are obviously not ephemeral routes – and would thus potentially controvert the dominant stereotypes – except that casting them as "age-old" implies an essential and uncreative logic of movement. Casual assertions that the Pajarito trail network probably reflects older "game trails" correlates the unconscious movement of people and animals, minimizing human intentionality.[4] Asserting that the trails were generated "by the constant passing of the people" (Prince 1903, 7) acknowledges the fundamental process of their establishment, but it also casts them as passive and immutable. Such perceptions are not merely intellectual relics; they can be discerned in more recent commentaries too (e.g., Steen 1977, 30). If trails must go where people have always gone, what more is to be learned from them?

The ahistorical perspective regarding Pajarito trails also reflects problems with chronology, since it is obviously difficult to “date” a trough in the rock. Our understanding of the changing human landscape of the Pajarito, however, is increasingly refined, made possible by detailed ceramic sequences, providing a way around this impasse. Since people lived in different parts of the Plateau at different times, it is inevitable that trails will reflect such changes in ways accessible to archaeological research.

Emphasis on the trails as passive products of movement is also contradicted by the wealth of evidence for constructed features associated with them. Formal staircases represent some of the most impressive landmarks on the Pajarito and are the product of considerable planning and effort (Snead 2009). It may be that other aspects of trail structure, such as the deep ruts that characterize some segments and the possible presence of constructed ramps (Rory Gauthier, personal communication, 2001), should also be considered to reflect intentional structuring of routes. Cobble berms lining some of the trails represent a notable investment (Snead 2008, 128),[5] as do the cairns and petroglyph trail markers found along the way (Snead 2002). Ambiguity in dating and association should not lead us to dismiss this category of evidence entirely: in the aggregate, features associated with the Pajarito trails indicate that they were the subject of considerable time, energy, and thought on the part of their creators and users.[6]

I have argued elsewhere (Snead 2002; 2008) that it is indeed possible to connect landscapes of movement and landscapes of settlement on the Pajarito Plateau. Current reconstructions (e.g., Powers and Orcutt 1999; Ruscavage-Barz 1999; Van Zandt 2006) indicate that recent Pueblo history of the region began in the eleventh century CE, with the establishment of small and dispersed agricultural communities on the mesa tops of the region. Some variation and population mobility aside, this pattern persisted for 300 years, with a general trend over time towards larger and longer-lasting settlements. In the fourteenth century CE, however, there was a significant shift towards larger villages, some in defensible locations and with local settlement hierarchies (Snead, Creamer, and Van Zandt 2004). The culmination of this process was the progressive consolidation of settlement that archaeologists call “aggregation,” and ultimately a shift of the permanent population to the adjacent lowlands, with the Pajarito remaining in use as a resource hinterland until the present.

The shift from more dispersed communities into aggregated villages transformed the Pajarito trail system. The older settlements were linked by routes in a way suggesting close and frequent contact between them. Some of these pathways are highly visible in the landscape, implying long-term associations. Trails linked with the later, aggregated villages, however, appear both “new” and formal when compared to their predecessors. Stairways at these places are quite elaborate (Figure 5.4) and show evidence for repeated reconstruction When long-term habitation on the Pajarito ceased in the seventeenth century CE, many of these newer routes fell into disuse, while there is evidence that the older network remained viable (Snead 2008, 124).

Figure 5.4 Segment of the Sandia Canyon trail network on the Pajarito Plateau, illustrating a staircase that shows signs of repeated reconstruction.
Source: J. Snead.

The increased formality of the trails associated with the aggregated villages is distinctive, and I argue that it pertains to uncertain legitimacy in a time of transition (Snead 2008, 127). The new settlements would have represented a break with the established order, requiring reinforcement – expressed in this case through landscape modification. Petroglyph trail markers also appear to proliferate during this era, implying the hardening of spatial boundaries. Regular rebuilding of trails and the construction of parallel routes closely resemble a process of ritual renewal in Pueblo society that Crown and Wills have identified in both ceramics and architecture (2003, 523; Snead 2009). Thus it was action, as much as result, that established the connection between past and present, whether through the regular replastering of the walls of kivas (or ritual rooms) or through the re-cutting of steps in the rock.

Treating the Pajarito trails as intentionally established features thus allows us to perceive the broader Pueblo landscape of the region as a complex construction representing hundreds of years of activity. Not simply the product of passive wandering, trails organized cultural space and were potent sources of meaning for those that used them. As archaeological evidence, these features bring us into the landscape in ways that other traces cannot, while the Pueblo cultural context provides a framework within which that experience can be placed. This approach has particular relevance for the more familiar case of the Chaco roads, to which I turn next.

Chaco Roads

Only 100 km west of the Rio Grande Valley is the San Juan Basin: mere days away on foot but a much greater distance in terms of archaeological epistemology. The San Juan Basin is the setting for the so-called Chaco Phenomenon, a florescence of Ancestral Pueblo society in the early second millennium CE. Chaco has been on archaeologists' minds for a long time, and the study of this place inevitably reflects changing perceptions, practices and cultural biases (see Hurst 2000, 64; Lekson 2006; Snead 2001). Landscapes of movement have played an essential role in these shifting ideas, and their interpretation represents a particularly distinctive tale of the tug between data and preconceptions.

The extensive ruins of Chaco Canyon came to the attention of archaeologists in the middle of the nineteenth century (Lister and Lister 1981). The large, multi-story masonry "great houses" of the canyon itself and the surrounding basin attracted considerable comment, but apparent road features and stairways associated with them were also noted. Despite scattered early references to the Chaco roads, they first received significant treatment in the 1920s by Neil Judd, who documented several such features – essentially consisting of wide and relatively straight cleared "ways," often linked with curbing, stairs, shrines, apparent way stations, and additional features (see Vivian 1997a) – associated with the sites of Pueblo Bonito and Pueblo Alto. Judd referred to them as "pathways," "roads," and "ceremonial highways" (1954, 350; 1964, 141), but a promised publication on the subject did not appear. It is interesting that Edgar Lee Hewett, who had pioneered work on the Pueblo trails of the Pajarito Plateau, never seems to have discussed the Chaco roads, even though he was aware of them (cf. Vivian 1983, 3) and his work at the Chaco Canyon great house of Chetro Ketl was practically in sight of the famous Jackson Staircase (Figure 5.5).

Judd's references to Chaco roads were rediscovered in the 1960s and 1970s, a time when theoretical ferment within the broader archaeological community was being felt at Chaco Canyon. This reassessment criticized the reliance on Pueblo ethnography to interpret the Pre-Columbian past, particularly regarding assumptions of interaction, egalitarianism, and institutional leadership (see Cordell and Plog 1979). Of the significant number of Chaco studies produced during this era,

> virtually all … viewed Chacoan outliers and the associated roads as material evidence of a large, complex socioeconomic system, or interaction sphere. Consistently postulated elements of the "Chacoan system" are resource redistribution, social ranking, and task specialization, all important elements of chiefdoms. (Powers, Gillespie, and Lekson 1983, 5)

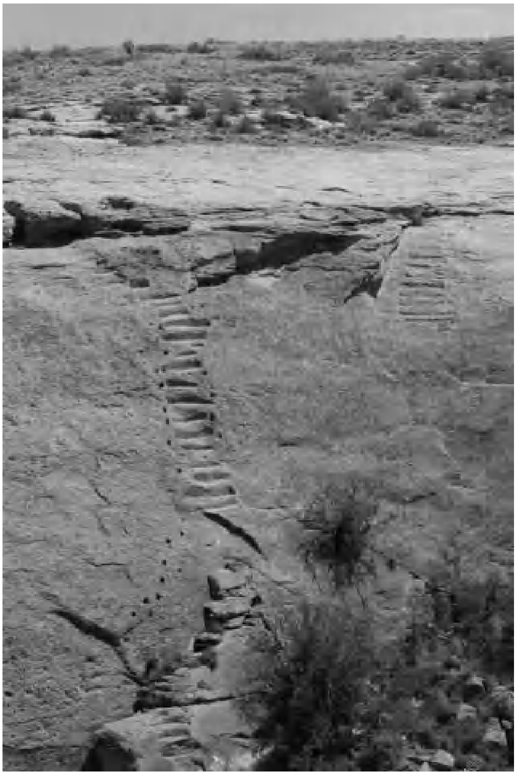


Figure 5.5 The Jackson Staircase at Chaco Canyon, illustrating constructed staircase features.

The roads played an important role in this reevaluation, and a comparative approach developed, using formal road systems from throughout the New World as a source of analogy for the Chaco case (Robertson 1983). In general terms, roads were interpreted to represent a network that linked Chaco Canyon to outlying communities and resource areas in all directions in support of the hypothesized redistributive economy.

More detailed information eventually led the relevance of the redistribution model for the Chaco system to be challenged (Lekson 1999, 115). Better empirical documentation of the roads again played a primary role in this reevaluation. First, ground-checking led to the elimination of some of the "major" roads seen on the aerial photographs. New survey in areas beyond Chaco Canyon, in contrast, identified many new, short roads – phenomena associated with Chaco-era great houses and related features, but of apparently no more than local significance. Few of these roads link up in any way that suggests they served as elements of a larger network (Roney 2001).

It is also clear that even the roads directly associated with Chaco Canyon do not converge at the same place. Although Pueblo Alto is clearly the "hub" for the

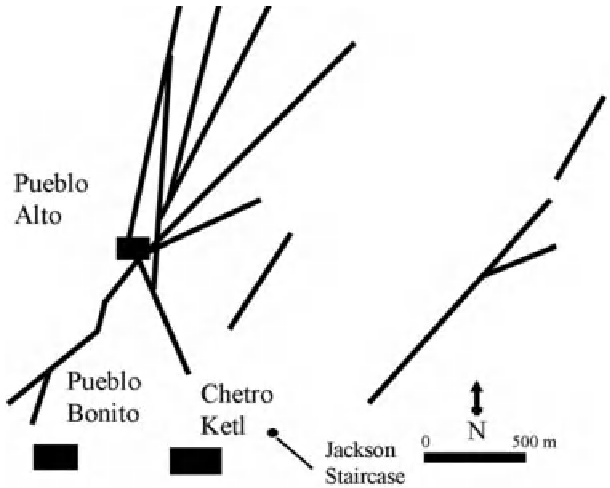


Figure 5.6 Distribution of road signatures in the vicinity of Pueblo Alto (redrawn after Kincaid 1983, with only the most obvious features retained).

North Road and associated segments, many of the other great houses have their own associated road segments. Thus the Chaco Canyon great houses of Chetro Ketl, Hungo Pavi, and Una Vida are each linked to points north of the canyon itself but independently of the roads that go through Pueblo Alto (Figure 5.6; see Windes 1991; Vivian 1997a, 14). Similar routes are evident in association with Peñasco Blanco to the west and Pueblo Pintado to the east (Marshall et al. 1979, 85; Powers, Gillespie, and Lekson 1983, 189). Thus the roads do not support arguments that Chaco Canyon as a whole functioned as an integrated "center," at least in the classical sense.

A second critique of a "Chaco-centric" integrative road network is based on evidence that the roads did not move people and things in any conventional sense. One point made by several authors is that we have not yet identified roads leading to many areas of critical resources used by the Chaco people, such as the well-wooded Jemez Mountains to the east. On a more local level, John Kantner's (1997) calculation of "cost paths" between Chaco great houses on New Mexico's Lobo Mesa found that the known Chaco roads in the vicinity did not follow logical routes of movement. The importance of this deviation from the expected became more significant when features were identified on the ground along the routes proposed by cost paths, suggesting that a network of trails had once existed there. Kantner's study indicates the difficulties of trying to envision the Chaco road network as a *functional* whole.

The formal characteristics of roads in the central San Juan Basin are also not universal throughout the Chaco region. Roads recently recorded in southwestern Utah, for instance, appear to have been relatively straightforward links between great houses.[7] Winston Hurst has recently designated these features "great trails" rather than roads (2000, 63), a term acknowledging their formality and association with other Chaco features such as great houses, but also implying that there was little functional difference between them and other sorts of routes, unlike the Chaco roads examined by Kantner (1997).

A third recent critique emphasizes the symbolic attributes of Chaco roads. The distinctive north–south orientation of the road network associated with Chaco itself is striking, particularly since the ethnographic Pueblo spatial perspective emphasizes the cardinal directions (see Ortiz 1969; Snead and Preucel 1999). It has been argued that this system represents a cosmogram or "axis mundi," defining Chaco Canyon as the "middle place" of Puebloan ideology (Marshall 1997, 71). Anomalous and "non-functional" features of the roads – such as the presence of multiple, parallel segments of the Great North Road (Kincaid 1983) – were reinterpreted as symbolizing the movement of different clans along ancestral migration routes (Marshall 1997, 69; Van Dyke 2008, 150).

Interpreting the Chaco roads as symbolic features has been enhanced by the realization that many of the sites connected by smaller road segments date to different periods. Given different names – "time bridges" (Fowler and Stein 2001, 117) or "roads to ruins" (Van Dyke 2003, 192) – these observations point to a distinctive phenomenon related to social and political legitimacy. Gwinn Vivian sees "roads as functioning to preserve order within Chacoan society" (1997b, 57) in ways as much symbolic as pragmatic. From this perspective roads were one of a suite of landscape features that, through architectural similarities and emulations, evoked comparisons with previous eras.

The collective critique of the model for Chaco roads has shattered the consensus on these features that existed in the 1980s. Chaco roads were clearly associated with movement, but by whom and for what purpose remains elusive. Ruth Van Dyke's recent phenomenological study (2008) highlights ways in which movement through the landscape was fundamental to Chaco on multiple levels. Dramatic, visual effects are created for the walker along some routes but not others; in some cases emphasis appears to have been placed on movement into Chaco, while elsewhere travel "out" may have been more significant (2008, 48). In such a distinctive physical landscape, however, distinguishing our own experience from that of the Chacoans is a challenging exercise, particularly since there is no consensus on who, exactly, was doing the walking, or even who built the roads. Whether they came as laborers, residents, pilgrims, or supplicants would certainly have influenced what they experienced; it is also evident that roads planned by Chaco residents leading *out* into the San Juan Basin would generate a different effect than roads planned by those in other communities to connect themselves *to* Chaco Canyon.

Creating Connections

All of this brings us back to the question of what the Chaco roads actually *were*, and how concepts of emplacement and formality may cast light on their nature. One of Judd's Navaho informants, when asked about the features, "remarked that they were not really roads, although they looked like them" (Judd 1954, 346). By this I suspect he meant these features could not be considered roads in the way that both Anglos and Navajos of the early twentieth century thought of them – routes principally intended to move people and goods across the landscape. This suggests that we should shift our attention from movement itself – which Van Dyke and others have thoroughly explored – to what movement *mean*s, and how this meaning is engaged by the construction of roads. Here I am influenced by Richard Parmentier's discussion of paths on the Micronesian island of Belau. He interprets these features as "signs" of the relationships they facilitate and of the web of social ties that is woven along them (1987, 109). From such a perspective, a trail "stands for" those connections. A hard-packed, clear path testifies to the active nature of a particular set of relationships, while a disused, grass-grown trail evokes ties that have become frayed and neglected. Thus, paths not only facilitate the connection for those who travel along them, but are also equally important for those who never make the trip yet for whom the connection implied is fundamental to the social fabric. People may have trading partners, political allies or even kin at the other end of that trail, rarely encountered physically but marked by the path winding through fields into the distance. Crossing that trail in the course of a day's work engages those distant relations and keeps the connection active, just as passing near a disused trail brings recollections of former ties, and perhaps feelings of loss or anger associated with their disruption (e.g., Basso 1996).

If trails embody the relationship between the points they connect, then formalizing such routes indicates a need or desire to highlight such ties by embedding them into the social landscape. Such "hardened" connections would not necessarily be more permanent than those they replaced, but the need to underscore them points to a particular social/political environment. Such effort might be exerted by those at either end of the line, or by all as a collective endeavor. Intermittent or episodic construction might be expected as effort or initiative waxes and wanes, and multiple routes would reflect a periodic need to reemphasize such ties in the manner of "ritual renewal" presented by Crown and Wills (2003). Destinations could include any sort of place to which connection is desirable, including monuments, sacred mountains, and ancestral settlements along with contemporary communities. It is important to stress that none of this implies that actual walking along these roads was common, or even likely; the road *was* the connection, whether it facilitated travel or not.

Seeing emplaced roads as landmarks of connection provides a useful template for the Chaco case. Much of the pervasive complexity and redundancy of these features can be better accounted for if we assume that they were not necessarily contemporary, planned by a central authority, or even intended as routes of regular travel. The parallel segments noted for the north road, for instance, are difficult to explain in functional terms, and although perceiving them as symbolic of the migration of different clans accords with Pueblo ideology (Marshall 1997), they remain problematic as discontinuous landscape features. Yet if the act of building them was the important thing, instead of their potential utility for movement, parallel routes become more easily understood. Ultimately it would not have mattered that a perfectly usable road ran along the same route only a few meters away: it was the act of recreating the trail, rather than necessarily moving along it, that was meaningful.

Chaco road building seen from this perspective would be a multi-centric process. Leaders of a new community, uncertain of their rights to use local farmland, might have a road constructed to a more ancient, empty settlement across the valley, using that connection (whether based on actual descent or not) to establish their own legitimacy. At the same time in Chaco Canyon itself, residents of one great house might rebuild a road connecting them with a neighbor in celebration of a long-held alliance, along which trade and human relationships would flow. Another outlying village, seeing this as a threat, might decide to build its own road to a competing great house elsewhere in the canyon – despite the fact that it would be an inconvenient route leading away from fields and resources relied on for daily use. Some of these links might be walked on for generations, with others abandoned before completion. All, however, would mark the landscape and join the myriad physical associations that such landmarks had for their local audience.

Interpretation of the roads as implying diverse types of connection can today be found throughout the Chaco literature. Gwinn Vivian has described Chaco roads as "tangible, visible, and conceptual proof of sustained ties and communication" (Vivian 1997b, 57), and considers them to be "flags" of autonomous centers similar to great house construction (1997b, 58). In a comment on the variable formality of one of the Utah roads, Owen Severance notes that it was apparently "more important to show people coming from the south where to walk than people coming from the north" (2004, 147). Stephen Lekson's critique of symbolic interpretations of Chaco roads – that some actually "went somewhere" (2006, 33) – can be accommodated within this rubric of "meaningful roads," since symbolism and use are not oppositional.

Perceiving Chaco roads as landmarks of connection also has implications for our understanding of the Chaco phenomenon. If road construction reflected initiatives led by residents of specific great houses in Chaco Canyon and beyond, then it becomes difficult to envision the canyon as a unified nexus of authority and power for the Ancestral Pueblo people of the San Juan Basin. Instead, it appears as a key node in a landscape that gave shape to historical, social, and political relationships. The roads defined networks of satellites and allies, new and old, active, latent, and abandoned. Physical links to Chaco itself may have underscored a specific symbolism to these relationships without necessarily implying specific authority over them. This is the "roads to ruins" scenario writ large: symbolic authority, however constituted, rested in the various great houses at Chaco, sources of legitimacy to which people in various places and at various times sought to connect.

What I find particularly appealing about perceiving roads/paths/trails as *landmarks of connection* is that Chaco roads and Pueblo trails are thereby integrated. From this perspective, there is little difference between the worn and cairn-lined pathways of the Pajarito and the formal, curb-lined clearances of the Great North Road. The inspiration for both springs from the same source: the social symbolism of moving through the countryside. There may be some elements of this landscape of movement that are distinctly Puebloan – perhaps some of the symbolism of migration defined by Hart and Othole (1993) and Marshall (1997) – but there also appear to be more fundamental cultural processes at work. This correlation not only breaks down particular myths of a regional prehistory – in this case, Chacoan "exceptionalism" – but also strikes at the broader road/path dichotomy. When these paradigms are set aside, they can be seen for what they are: structures of our thought rather than ancient reality, hindering rather than assisting our ability to see the past as it was.

Conclusion

Roads, paths and trails are an element of the archaeological record that can truly be treated in a comparative fashion. People *do* walk from A to B, and did so in the Paleolithic as well as today. Yet this shared rationale for movement does not imply a sterile sameness. Instead, the ubiquity of movement provides a stage on which various elements of human drama are played out. War bands stalk highways that are also traveled by marriage parties. Old roads and paths unmarked by recent footsteps occupy the same landscape as busy routes of trade. That such landscapes may come about in distinctive ways in particular times should not mislead us from acknowledging their fundamental similarity.

A chapter subheading in Justine Shaw's book *White Roads of the Yucatan* refers to Maya *sacbe* roads as "Referencing Other Polities" (2008, 112; this volume). In this section she is interested in overt symbolism, such as roads as components of landscape cosmograms, but I think the concept of "referencing" is more broadly applicable to roads. As a unique form of place that makes reference to everything it passes, yet still remains distinct from all, a road presents a profound interpretive challenge for archaeologists. We can, however, learn from walking along them, both in the explicitly phenomenological mode of Christopher Tilley (1994) and Van Dyke (2008), and in the perhaps more cautious way advocated here. Ultimately this approach calls for interchange among scholars who between them study a great range of pre-modern societies worldwide. The spell that roads embody *is* great, but it is one that must be shared and compared.[8]

Notes

1 Snead 2008, 129. This is Tzenatay, also known as La Bajada (LA 7), a substantial archaeological site located between Santa Fe and Albuquerque. The *Camino Real* itself parallels and crosses modern I-25 nearby, representing a continuity of routes through this region that is probably thousands of years old (Marshall 1991).

2 Cf. Hill, Trierweiler, and Preucel 1996; Snead 2002; Steen 1977, 1982; Van Zandt 1999.

3 I acknowledge that this characterization may shade into self-promotion, since I present my own work as an attempt to subvert what I have identified as traditional approaches. Because my perception of the Pajarito trails has evolved over the years, however (see Snead 2008), these observations are as much reflexive as critical.
4 Asserting the similarity of human and animal movement remains common, and assessing this correlation more critically would be of great value. An old truism linking the buffalo traces of the eastern woodlands of the United States with the indigenous "warpaths" of the region is contradicted in a recent publication, which cites eighteenth-century sources as indicating that the two routes were actually quite different (Belue 1997, 17).
5 It is, of course, possible that such berms were aggregate features, perhaps reflecting clearance of trails over long periods of time rather than single construction features. Even so, their existence is by itself an indication of activity associated with the trails, contravening more passive stereotypes.
6 In 1991, I asked a representative of a local pueblo government about the Pajarito trails, to which he replied in amusement, "I didn't think you guys were interested in that sort of thing."
7 See Hurst, Severance, and Davidson 1993; Severance 1999; 2004; Till and Hurst 2002.
8 My fieldwork on the Ancestral Pueblo trails of the northern Rio Grande had several sponsors, among whom were the Friends of Bandelier (Mathy Fund); permission from Bandelier National Monument and Los Alamos National Laboratory is also appreciated.

References

Bacon, R. H. 1897. *Benin, the City of Blood*. London: Edward Arnold.
Bandelier, A. F. 1892. *Final Report of Investigations among the Indians of the Southwestern United States, Carried on Mainly in the Years From 1880 to 1885*, vol. 2 (Papers of the Archaeological Institute of America, American Series 4). Cambridge, MA: John Wilson and Son.
Basso, K. H. 1996. *Wisdom Sits in Places*. Albuquerque: University of New Mexico Press.
Bell, T. and G. Lock. 2000. "Topographic and Cultural Influences on Walking the Ridgeway in Later Prehistoric Times." In G. Lock, ed., *Beyond the Map: Archaeology and Spatial Technologies*, 85–100. Amsterdam: IOS Press.
Belloc, H. 1911. *The Old Road*. London: Constable & Co.
Belue, T. F. 1997. *The Long Hunt: Death of the Buffalo East of the Mississippi*. Mechanicsburg: Stackpole Books.
Bryant, S. and G. Burleigh. 1995. "Later Prehistoric Dykes of the Eastern Chilterns." In R. Holgate, ed., *Chiltern Archaeology: Recent Work – A Handbook for the Next Decade*, 92–5. Dunstable: The Book Castle.
Cartwright, J. 1893. *The Pilgrims' Way From Winchester to Canterbury*. London: J. S. Virtue & Co.
Chevallier, R. 1976. *Roman Roads*, trans. N. H. Field. Berkeley: University of California Press.
Cordell, L. S. and F. Plog. 1979. "Escaping the Confines of Normative Thought: A Reevaluation of Puebloan Prehistory." *American Antiquity* 44: 405–29.
Crawford, O. G. S. 1960. *Archaeology in the Field*, 4th edn. London: Phoenix House.
Crawford, O. G. S. and A. Keillor. 1928. *Wessex from the Air*. London: Clarendon House.

Crown, P. L. and W. H. Wills. 2003. “Modifying Pottery and Kivas at Chaco: Pentimento, Restoration, or Renewal?” *American Antiquity* 68: 511–32.

Darling, P. J. 1984. *Archaeology and History in Southern Nigeria: The Ancient Linear Earthworks of Benin and Ishan* (Cambridge Monographs in African Archaeology 11; BAR International Series 215). Oxford: Tempus Reparatum.

Darvill, T. 1996. *Prehistoric Britain from the Air: A Study of Space, Time, and Society.* Cambridge: Cambridge University Press.

De Marrais, E., L. J. Castillo, and T. J. Earle. 1996. “Ideology, Materialization, and Power Strategies.” *Current Anthropology* 37: 15–32.

Ferguson, T. J., G. L. Berlin, and L. J. Kuwanwisiwma. 2009. “*Kukhepya*: Searching for Hopi Trails.” In Snead, Erickson, and Darling, 20–41.

Fewkes, J. W. 1906. “Hopi Shrines near the East Mesa, Arizona.” *American Anthropologist* 8: 346–73.

Fleming, A. 1998. *Swaledale: Valley of the Wild River.* Edinburgh: Edinburgh University Press.

Fowler, A. P. and J. R. Stein. 2001. “The Anasazi Great House in Space, Time, and Paradigm.” In D. E. Doyel, ed., *Anasazi Regional Organization and the Chaco System*, 101–22 (Anthropological Papers 5). Albuquerque: Maxwell Museum of Anthropology.

Fowler, P. J. 2000. *Landscape Plotted and Pieced: Landscape History and Local Archaeology in Fyfield and Overton, Wiltshire.* London: Society of Antiquaries of London.

Friend, C. T. 2005. *Along the Maysville Road: The Early American Republic in the Trans-Appalachian West.* Knoxville: University of Tennessee Press.

Goddard, P. 1913. “Wayside Shrines in Northwestern California.” *American Anthropologist* 15: 702–3.

Graf, D. F. 1994. “The Persian Royal Road System.” In H. Sancisi-Weedenburg, A. Kuhrt, and M. C. Root, eds., *Achaemenid History 8. Continuity and Change*, 167–89. Leiden: Nederlands Instituut Voor Het Nabije Oosten.

Harrington, J. P. 1916. “The Ethnogeography of the Tewa Indians.” *Annual Report of the Bureau of American Ethnology* 29: 29–618.

Harrison, S. 2003. “The Icknield Way: Some Queries.” *Archaeological Journal* 160: 1–22.

Hart, E. R. and A. L. Othole. 1993. “The Zuni Salt Lake Area: Potential Impacts to Zuni Traditional Cultural Properties by the Proposed Fence Lake Mine.” In E. R. Hart and T. J. Ferguson, eds., *Traditional Cultural Properties of Four Tribes: The Fence Lake Mine Project*, vol. 1, 1–185. Seattle: Institute of the North American West.

Hewett, E. L. 1906. *Antiquities of the Jemez Plateau, New Mexico* (Bureau of American Ethnology Bulletin 32). Washington: U.S. Government Printing Office.

Hewett, E. L. 1908. *Excavations at Puye in 1907* (Papers of the School of American Archaeology 4). Santa Fe: Archaeological Institute of America.

Hewett, E. L. 1953. *Pajarito Plateau and its Ancient People*, revd. B. P. Dutton. Albuquerque: School of American Research, University of New Mexico Press.

Hill, J. N., W. N. Trierweiler, and R. W. Preucel. 1996. “The Evolution of Cultural Complexity: A Case from the Pajarito Plateau, New Mexico.” In J. E. Arnold, ed., *Emergent Complexity: The Evolution of Intermediate Societies*, 107–27. Ann Arbor: International Monographs in Prehistory, Archaeological Series 9.

Howard, R. M. 1959. “Comments on the Indian’s Water Supply at Gran Quivira National Monument.” *El Palacio* 85: 85–91.

Hurst, W. E. 2000. “Chaco Outlier or Backwoods Pretender? A Provincial Great House at Edge of the Cedars Ruin, Utah.” In J. Kantner and N. M. Mahoney, eds., *Great House*

Communities across the Chacoan Landscape, 63–78 (Anthropological Papers of the University of Arizona 64). Tucson: University of Arizona Press.

Hurst, W. E., O. Severance, and D. Davidson. 1993. "Uncle Albert's Ancient Roads." *Blue Mountain Shadows* 12: 2–9.

Jett, S. C. 2001. *Navajo Placenames and Trails of the Canyon de Chelly System, Arizona*. New York: Peter Lang.

Judd, N. M. 1954. *The Material Culture of Pueblo Bonito* (Smithsonian Miscellaneous Collections 124). Washington: Smithsonian Institution.

Judd, N. M. 1964. *The Architecture of Pueblo Bonito* (Smithsonian Miscellaneous Collections 147.1). Washington: Smithsonian Institution.

Kantner, J. 1997. "Ancient Roads, Modern Mapping: Evaluating Chaco Anasazi Roadways Using GIS Technology." *Expedition* 39: 49–62.

Kincaid, C., ed., 1983. *Chaco Roads Project, Phase I: A Reappraisal of Prehistoric Roads in the San Juan Basin*. Albuquerque: US Department of the Interior, Bureau of Land Management.

Laurence, R. 1999. *The Roads of Roman Italy: Mobility and Cultural Change*. London: Routledge.

Lekson, S. 1999. *The Chaco Meridian: Centers of Political Power in the Ancient Southwest*. Walnut Creek: Altamira.

Lekson, S. 2006. "Chaco matters." In S. H. Lekson, ed., *The Archaeology of Chaco Canyon: An Eleventh Century Pueblo Regional Center*, 3–44. Santa Fe: School of American Research Press.

Lippi, R. D. 2000. "Caminos Antiquos en el Pichinca Occidental (Ecuador)." In L. Herrera and M. Cardale de Schrimpf, eds., *Caminos Precolombinos: Las Vías, Los Ingenieros y los Viajeros*, 117–35. Bogotá: Instituto Colombiano de Antropología e Historia.

Lister, R. H. and F. C. Lister. 1981. *Chaco Canyon: Archaeology and Archaeologists*. Albuquerque: University of New Mexico Press.

Loendorf, L. L. and J. L. Brownell. 1980. "The Bad Pass Trail." *Archaeology in Montana* 21: 11–102.

Marshall, M. P. 1991. *El Camino Real de Tierra Adentro: An Archaeological Investigation*. Santa Fe: 1990 New Mexico Historic Preservation Division Survey.

Marshall, M. P. 1997. "The Chacoan Roads: A Cosmological Interpretation." In B. H. Morrow and V. B. Price, eds., *Anasazi Architecture and American Design*, 62–74. Albuquerque: University of New Mexico Press.

Marshall, M. P., J. R. Stein, R. W. Loose, and J. E. Novotny. 1979. *Anasazi Communities of the San Juan Basin*. Albuquerque: Public Service Company of New Mexico and New Mexico Historic Preservation Division.

McClintock, W. 1910. *The Old North Trail*. London: Macmillan and Co.

Nabokov, P. 1981. *Indian Running*. Santa Fe: Ancient City Press.

O'Hanlon, M. and L. Frankland. 2003. "Co-present Landscapes: Routes and Rootedness as Sources of Identity in Highlands New Guinea." In P. J. Stewart and A. Strathern, eds., *Landscape, Memory, and History: Anthropological Perspectives*, 166–88. Sterling: Pluto Press.

Ortiz, A. 1969. *The Tewa World: Space, Time, Being, and Becoming in a Pueblo Society*. Chicago: University of Chicago Press.

Parmentier, R. J. 1987. *The Sacred Remains: Myth, History, and Polity in Belau*. Chicago: University of Chicago Press.

Parsons, E. C. 1996 [1939]. *Pueblo Indian Religion*. Lincoln: University of Nebraska Press.

Pigniolo, A. R., J. Underwood, and J. H. Cleland. 1997. *Where Trails Cross: Cultural Resources and Evaluation for the Imperial Project, Imperial County, California*. San Diego: KEA Environmental.

Potts, D. T., et al. 2007. "The Mamasani Archaeological Project, Stage 2: Excavations at Qaleh Kali (Tappeh Servan/Jinjun [MS46])." *Iran* 45: 287–300.

Powers, R. P., W. B. Gillespie, and S. Lekson. 1983. *The Outlier Survey: A Regional View of Settlement in the San Juan Basin* (National Park Service, Reports of the Chaco Center 3). Albuquerque: U.S. Department of the Interior.

Powers, R. P. and J. D. Orcutt. 1999. "Summary and Conclusion." In R. P. Powers and J. D. Orcutt, eds., *The Bandelier Archaeological Survey*, 551–89 (Intermountain Cultural Resources Management, Professional Paper 57). Santa Fe: Intermountain Region, National Park Service.

Prince, L. B. 1903. *The Stone Lions of Cochiti*. Santa Fe: New Mexican Printing Company.

Robertson, B. P. 1983. "Other New World Roads and Trails." In Kincaid, 2-1 to 2-7.

Rogers, M. 1966. *Ancient Hunters of the Far West*. San Diego: Copley Press.

Roney, J. R. 2001. "Prehistoric Roads and Regional Integration in the Chacoan System." In D. E. Doyel, ed., *Anasazi Regional Organization and the Chaco System*, 123–32 (Anthropological Papers 5). Albuquerque: Maxwell Museum of Anthropology.

Ruscavage-Barz, S. 1999. "Knowing Your Neighbor: Coalition-period Community Dynamics on the Pajarito Plateau, New Mexico." PhD diss., Washington State University.

Severance, O. 1999. "Prehistoric Roads in Southeastern Utah." In M. S. Duran and D. T. Kirkpatrick, eds., *La Frontera: Papers in Honor of Patrick H. Beckett*, 185–95 (Papers of the New Mexico Archaeological Society of New Mexico 25). Albuquerque: Archaeological Society of New Mexico.

Severance, O. 2004. "Cottonwood Falls (42SA5222) and Its Place in Southeastern Utah's Prehistoric Landscape." In R. Wiseman, T. C. O'Laughlin, and C. T. Snow, eds., *Ever Westward: Papers in Honor of Elizabeth Kelley*, 139–57 (Papers of the Archaeological Society of New Mexico 30). Albuquerque: Archaeological Society of New Mexico.

Shaw, J. M. 2008. *White Roads of the Yucatan*. Tucson: University of Arizona Press.

Sheets, P. 2009. "When the Construction of Meaning Predated the Meaning of Construction: From Footpaths to Monumental Entrances in Ancient Costa Rica." In Snead, Erickson, and Darling, 158–79.

Snead, J. E. 2001. *Ruins and Rivals: The Making of Southwest Archaeology*. Tucson: University of Arizona Press.

Snead, J. E. 2002. "Ancestral Pueblo Trails and the Cultural Landscape of the Pajarito Plateau, New Mexico." *Antiquity* 76: 756–65.

Snead, J. E. 2008. *Ancestral Landscapes of the Pueblo World*. Tucson: University of Arizona Press.

Snead, J. E. 2009. "Trails of Tradition: Movement, Meaning, and Place." In Snead, Erickson, and Darling, 42–60.

Snead, J. E. and R. W. Preucel. 1999. "The Ideology of Settlement: Ancestral Keres Landscapes in the Northern Rio Grande." In W. Ashmore and A. B. Knapp, eds., *Archaeologies of Landscape: Contemporary Perspectives*, 169–97. London: Blackwell.

Snead, J. E., W. Creamer, and T. Van Zandt. 2004. "'Ruins of Our Forefathers': Large Sites and Site Clusters in the Northern Rio Grande." In C. Adams and A. Duff, eds., *The Pueblo IV Period in the American Southwest*, 26–34. Tucson: University of Arizona Press.

Snead, J. E., C. L. Erickson, and J. A. Darling. 2009. "Making Human Space: The Archaeology of Roads, Paths, and Trails." In J. E. Snead, C. L. Erickson, and J. A. Darling, eds., *Landscapes of Movement: The Anthropology of Roads, Paths, and Trails*, 1–19. Philadelphia: University of Pennsylvania Press.

Sobin, G. 1999. *Luminous Debris: Reflecting on Vestige in Provence and Languedoc*. Berkeley: University of California Press.

Steen, C. R. 1977. *Pajarito Plateau Archaeological Survey and Excavations*, *LASL-77-4*. Los Alamos: Los Alamos Scientific Laboratory.

Steen, C. R. 1982. *Pajarito Plateau Archaeological Surveys and Excavations, II, LA-8860-NERP*. Los Alamos: Los Alamos Scientific Laboratory.

Stevenson, J. 1883. "Illustrated Catalog of the Collections Obtained from the Indians of New Mexico and Arizona in 1880." *Second Annual Report of the Bureau of Ethnology*, 423–65. Washington: U.S. Government Printing Office.

Till, J. D. and W. B. Hurst. 2002. "Trail of the Ancients: A Network of Ancient Roads and Great Houses in Southeastern Utah." Paper Presented at the 67th Annual Meeting of the Society for American Archaeology, Denver, March 20–4.

Tilley, C. 1994. *A Phenomenology of Landscape*. Oxford: Berg.

Toulouse, J. H., Sr. 1945. "Early Water Systems at Gran Quivira National Monument." *American Antiquity* 10: 362–72.

Ur, J. 2003. "CORONA Satellite Photography and Ancient Road Networks: A Northern Mesopotamian Case Study." *Antiquity* 77: 102–15.

Ur, J. 2009. "Emergent Landscapes of Movement in Early Bronze Age Northern Mesopotamia." In Snead, Erickson, and Darling, 180–203.

Van Dyke, R. M. 2003. "Memory and the Construction of Chacoan Society." In R. M. Van Dyke and S. E. Alcock, eds., *Archaeologies of Memory*, 180–200. London: Blackwell.

Van Dyke, R. M. 2008. *The Chaco Experience: Landscape and Ideology at the Center Place*. Santa Fe: School for Advanced Research Press.

Van Zandt, T. 1999. "Architecture and Site Structure." In R. P. Powers and J. D. Orcutt, eds., *The Bandelier Archaeological Survey,* 309–88 (Intermountain Cultural Resources Management, Professional Paper 57). Santa Fe: Intermountain Region, National Park Service.

Van Zandt, T. 2006. "Shaping Stones, Shaping Pueblos: Architecture and Site Layout in Bandelier National Monument, AD 1150 to 1600." PhD diss., University of Michigan, Ann Arbor.

Vivian, R. G. 1983. "Identifying and Interpreting Chacoan Roads: An Historical Explanation." In Kincaid 1983, 3-1 to 3-20.

Vivian, R. G. 1997a. "Chacoan Roads: Morphology." *Kiva* 63.1: 7–34.

Vivian, R. G. 1997b. "Chacoan Roads: Function." *Kiva* 63.1: 35–68.

von Werlhof, J. 1988. "Trails in Eastern San Diego County and Imperial County: An Interim Report." *Pacific Coast Archaeological Society Quarterly* 24: 51–75.

Windes, T. C. 1991. "The Prehistoric Road Network at Pueblo Alto, Chaco Canyon, New Mexico." In C. D. Trombold, ed., *Ancient Road Networks and Settlement Hierarchies in the New World*, 111–31. Cambridge: Cambridge University Press.

Young, J. H. 1956. "Greek Roads in South Attica." *Antiquity* 30: 94–7.

6

Roads to Ruins: The Role of *Sacbeob* in Ancient Maya Society

JUSTINE M. SHAW

As a settlement researcher working in the northern Maya Lowlands (Figure 6.1), I am keenly aware of the types of roads that exist in the region today. In order to arrive in our survey area, we drive on major highways used only by those with the resources to pay relatively costly tolls; then we take wide, paved two-lane roads – recently improved in order to lure tourists away from the east coast "Riviera Maya" – into the interior zones dubbed the "Ruta de las Iglesias" and the "Zona Maya;" and finally we travel increasingly narrow paved lanes. To get from the village where we live to the archaeological sites we study, we can sometimes drive further on gravel and then dirt roads, but usually we bike and hike the remaining kilometers along networks of winding dirt paths established and maintained by Yucatec Maya farmers commuting to their agricultural fields. Many such paths, while hidden to anyone traveling by car, actually witness more traffic than the paved roads that link the villages to larger towns and cities.

Over the years, I have become increasingly aware of how these highways, roads, and paths have evolved, with various segments being abandoned, others being targeted for improvement as a component of development programs, and some being maintained through periodic infusions of government funding to clear the encroaching vegetation on the shoulders and fill major potholes. When the Mexican government adds, improves, or repairs roads, it frequently broadcasts the quantity of funds spent on the project with a large billboard, potentially designed to remind everyone of not only who paid for the job but also the degree to which a particular community has been graced by the larger powers. After Yucatec Maya

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

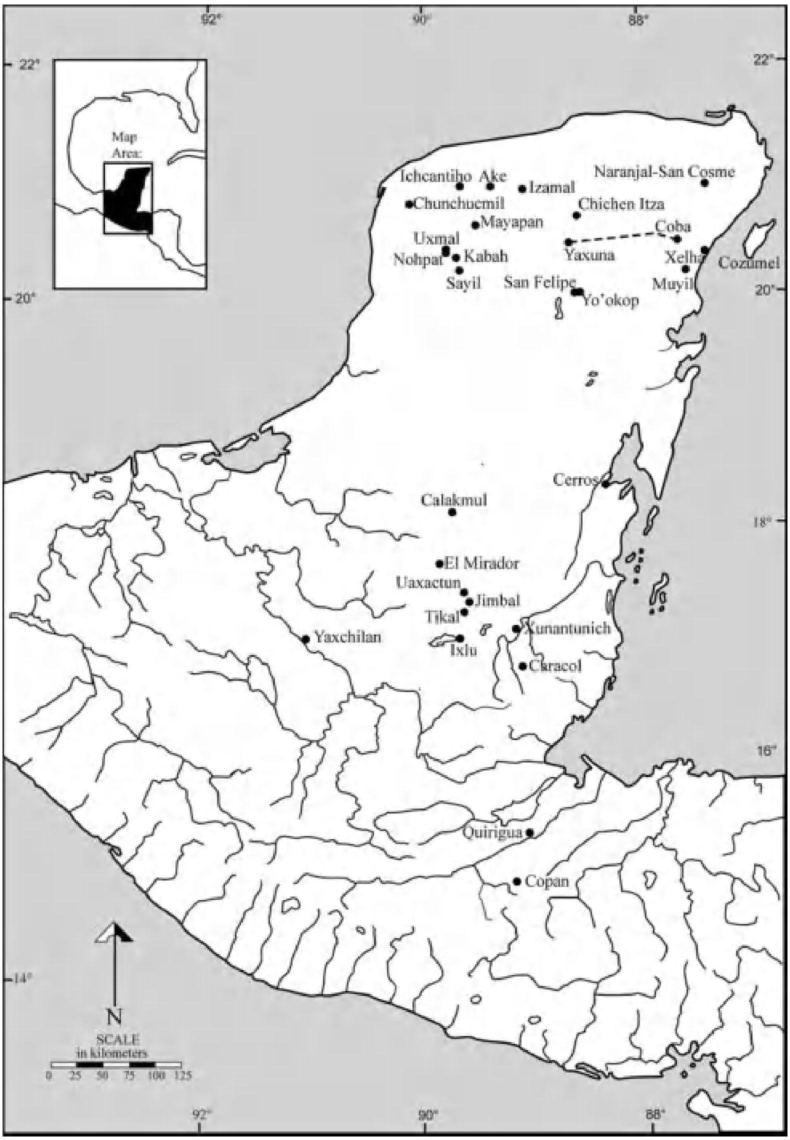


Figure 6.1 Maya sites mentioned in the text.
Source: Map by Justine M. Shaw.

farmers cut a new trail, users assist in its maintenance by swinging their machetes as they walk, with human and animal feet doing the remainder of the work to formalize and to widen any frequently used path. Both trails and roads swiftly become overgrown if not regularly used and maintained, although the memories of prior routes are passed down through several generations as part of the local lore.

Clearly there has been an enormous amount of culture change in the roughly 2,500 years since permanent settlements were first evidenced in our study area in the west-central portion of Mexico's state of Quintana Roo. However, it is quite likely that analogous transportation networks existed in the past and, like the present, that these features not only had different physical properties but also variable functions and meanings for their creators and users. Unfortunately, the bulk of the ancient Maya transportation systems are lost to us, having been paths like those that provide access to most of the territory in the lowlands today. What remains for archaeologists are *sacbeob* (plural of *sacbe*), roadways commonly constructed as elongated platforms, with dry-laid boulders forming a base that was then topped by decreasing gradations of cobbles, gravel, and then powdered limestone. These causeways usually maintain a straight course in order to connect important architectural elements within site centers, link the core and a group on the periphery of the settlement, or even tie together separate settlements. Their height frequently varies in an effort to sustain a relatively constant grade over the uneven terrain, including exposed bedrock, depressions that seasonally hold water, and even earlier constructions located in the path of the road.

Sacbeob have been remarked upon by outsiders from the time the Spaniards arrived in the peninsula, starting with Diego de Landa, who mentions "a very beautiful road" connecting Ichcantiho (Tiho), now the city of Mérida, to Izamal (Tozzer 1966 [1941], 109), as well as a causeway near Chichén Itzá's Cenote of Sacrifice (Tozzer 1966 [1941], 179–80). However, in comparison to major temples and palaces, their visual appearance can be rather subtle unless a site is well cleared of vegetation. For this reason, many *sacbeob* have only been documented quite recently as more archaeological studies have ventured away from site cores or focused upon smaller settlements.[1] In our own study area, we have located *sacbeob* at sites where we had done prior research, finding out after the fact that we have been walking across a segment of a road that had been obscured by vegetation or the impact of modern activities.

In the Maya Lowlands, causeway documentation that has taken place has primarily focused upon the basic physical dimensions of each road. Dating the features themselves is more difficult, in that even if a portion of a *sacbe* is excavated, the porous nature of the fill and the rarity with which significant quantities of debris other than rocks are included mean that few dateable artifacts that can be firmly associated with a given feature end up being preserved. Instead, dating generally takes place by association with other architectural elements located at the termini or along the course of the roadway. This type of dating may require extensive excavations, as Maya sites tend to be built in a layer-cake fashion, potentially containing hundreds of years of activity that may predate or postdate the *sacbe*. Additionally, even if the construction date can be pinned down, the extent of the use life of a given causeway is even more nebulous. Other than spotting reuse or continued activity through the construction of more recent, firmly associated features, there is no means to gauge how long a given road was in service.

Potential Functions of *Sacbeob*

The "Maya area" differs from most other culture areas included in this volume in that it was never unified politically, and it is quite likely that its inhabitants did not view themselves as having any common identity, any more than they do today (Castañeda 1996; Gabbert 2004). At least two languages are indicated in written records (Coe 1992). Models concerning the politics of the region range from larger "regional states" during the Early and Late Classic (250–900 CE) (Adams 1986; Marcus 1976) or even "super states" on the basis of marriage and alliance networks that persisted for many centuries (Martin and Grube 1995), to models (Mathews 1991) which reject a ranked relationship between sites. Even the proponents of larger political alliances admit that hierarchical arrangements shifted markedly through time (Houston 1993), with alliance-based conflicts escalating towards the infamous southern Maya "collapse" near the end of the Late Classic. Therefore, in investigating the purpose of causeways in the Maya Lowlands, one cannot simply study the goals or history of a single central government and its subjects. Instead, understanding why a given *sacbe* was built generally involves considering multiple analytical scales, including regional, local, and site-specific events and conditions, as well as the causeway's own physical properties and associations. At the same time, it is possible to discuss some general reasons why causeways were constructed.

The basic transport function of *sacbeob* is the most obvious characteristic that comes to mind for any type of roadway. Like the rest of Mesoamerica, the Maya area lacked beasts of burden, so any land-based movement took place using human porters (Hassig 2006). Therefore, having a wide, raised, clear, and smooth-surfaced path for humans to follow through what otherwise ranged from thorny scrub brush in the north to dense jungle in the south, where seasonal inundations were not uncommon, could have facilitated trade, tribute flow, and the ability of individuals or even armed forces to move from one point to another. Even short, intra-site roads might have helped the flow of pedestrians through congested core zones. These practical functions are emphasized in examples such as Cobá, where *cenotes* (limestone sinkholes providing access to potable water) and *aguadas* (depressions that hold water, frequently modified by humans) are associated with roadways (Folan 1977, 34–5). At Muyil and Xelha (Witschey 1993, 185), *sacbeob* are used to connect settlements to lagoons. As sea level changed, one *sacbe* at Muyil was extended to permit continued pedestrian crossing of the mucky terrain along the shore. Chunchucmil's *sacbe* system, augmented by alleys some 2 to 4 m wide, allowed access to public spaces that appear to have hosted market exchange (Dahlin 2000, 285; Dahlin and Ardren 2002; Dahlin et al. 2007). Arlen Chase and Diane Chase (2001, 277–9) have also stressed the economic and practical transport functions of Caracol's road system, which seems to have been designed to channel the site's population to open plazas surrounded by low range structures.

A secondary mundane purpose of some roadways is that of water management. While some causeways were designed to cross wet terrain (Bolles and Folan 2001; Folan and Stuart 1983, 65–6), what is principally implied here is that some roads actually served to channel, retain, or collect water. Examples include El Mirador, where roads at the site are positioned to impound and divert water to select locations, thus acting as dams or dikes.[2] At Cerros, a *sacbe* was constructed by quarrying material from adjacent low-lying areas to create reservoirs. The road itself divided the water source in two (Scarborough 1983, 727; 1993, 38). Likewise, Tikal's extensive core utilized a variety of types of architecture, including causeways, to direct and store water (Scarborough 1993, 44–7; 1998, 139–45).

At the same time, a *sacbe* would have been an expensive undertaking. Other transportation options, including roads and paths created simply by clearing vegetation, as well as open courtyards within sites, could have met the simple transport needs of the inhabitants of most settlements. Likewise, courtyards, reservoirs, levees, and other features were constructed to deal with seasonal inundations and dry periods. Therefore, it seems likely that other characteristics of *sacbeob* made them desirable to many Maya polities. Maya *sacbeob* were more than just practical "transportation architecture" (cf. Hirth 1982) or a means to divert water; they were also imbued with multiple levels of meaning, from the political to the social to the ritual and symbolic. None of these functions are mutually exclusive, however, as any given road likely simultaneously performed multiple roles. Emphases likely changed through time, as well as being dependent upon the perspective of the individual viewer or user.

Some causeways appear to have been used to exert political control, potentially helping to define the territorial extent that a city controlled at a given time; such a purpose appears to have been particularly important when another rival existed in relative proximity. Edward Kurjack (1977, 225–7) has emphasized this boundary maintenance function, noting that the Izamal–Aké roadway extends approximately half the distance to Mérida (ancient Ichcantiho), a center that would have rivaled Izamal in size. At Yaxuná, the Late Classic arrival of the 100 km-long roadway from Cobá, which would have required an estimated 750,000 m^3 of rock, made a clear declaration of Cobá's mastery over an extensive domain (Schele and Freidel 1990, 353; Shaw 1998). New temples and palaces were built around the *sacbe* terminus plaza at Yaxuná, partially dismantling earlier structures in the process, in order to orient the site towards Cobá. For the individuals living within a political territory defined in this manner, the vast majority of whom would not have been able to read the public monuments erected by their rulers, *sacbeob* would have made a much more universally understood statement of a close relationship, alliance, or territorial possession than any written text (Carrasco 1993, 211; Folan 1992, 163).

Wendy Ashmore and Jeremy Sabloff (2000, 20-1; 2002, 203) write that, in addition to concepts of cosmic order, a significant source of ancient Maya civic spatial order is the enhancement of the "aura" of a place by constructing it to resemble more established sites. As large-scale features that underscored the linkage between various elements, *sacbe* arrangements were one of the key components included in these programs of emulation and competition. Quirigua's layout, for example, has been likened to Copán (Fash 1991, 150–51; Fash and Stuart 1991, 148). At Copán, a *sacbe* ends at the eastern entrance to the site core, while at Quirigua a port on the Motagua River substitutes in this same vicinity. In the Puuc area, the sites of Labná and Sayil provide yet another instance of a minor site mimicking that of a larger power. Although carried out on a much smaller scale at the former, both sites include a northern palace connected by a causeway to a set of compounds. Likewise, Uxmal and Kabah, which are joined by a *sacbe*, share architectural similarities (Dunning 1992; Maldonado 1995).

A purpose that bridges what might be termed "political" and "social" functions is that of social integration. Gregory Johnson (1989, 375–7) writes that elite control of labor for monumental constructions, as well as more functional public works, would have been particularly important in New World societies, due to the lack of beasts of burden. With many such projects being labor intensive, requiring minimal skill at numerous stages, and capable of being constructed in stages, they provided ideal "labor sinks" for elites to regularize demands for human workers and justify them on ideological grounds. In our Cochuah study area, it has been hypothesized that the sites of Ichmul and Yo'okop made extensive use of *sacbeob* for purposes of social integration (in addition to other functions) during the Terminal Classic (850/900–1100 CE), a time of great political changes when the region's population was larger and more diverse than ever before (Shaw 2008).

During the construction of a causeway, this use may have involved something similar to the historically and ethnographically documented institution of *fagina*, which involves compulsory labor contributions by adult males at the discretion of local leaders. Those refusing to take part are potentially forced to leave the community or at least deprived of certain privileges accorded to full members. In early twentieth-century Chan Kom, *fagina* duties included, among other things, road building (Redfield and Villa Rojas 1962 [1934], 30). Evidence for *sacbeob* being constructed in a piecemeal fashion, potentially as the result of crews being assigned discrete sections, includes non-structural internal divisions and unfinished segments visible in roadways at Cobá, Ichmul, Naranjal-San Cosmé, and Yo'okop.[3] Once built, the function of social integration could have continued as residents used the roadways for both practical and ritual activities. At the sites of Ichmul and Yo'okop in the Cochuah region, for example, *sacbeob* are believed to have been used for ancestor- and water-based rituals (Shaw 2008).

Post-conquest observers, including Diego de Landa (in Villa Rojas 1934, 189; Tozzer 1966 [1941], 146) and Bernardo de Lizana (1633 [1988], 56), report that the principal function of causeways was to serve as pathways for ceremonial processions and pilgrimages among related nobility (Schele and Freidel 1990, 498). David Freidel and Jeremy Sabloff (1984, 82) believe that Postclassic Cozumel roadways within sites would have hosted processions, while inter-site roads functioned as pilgrimage routes. Still other Classic Maya sites exhibit what appear to be internal procession ways (Tourtellot 1988). With the exception of short causeways to permit movement across its defensive ditches (Haviland 2003, 134–7), Tikal's causeways also appear to have bound primarily ritual loci together (Carr and Hazard 1961; Chase and Chase 2001, 279).

The symbolic meanings of *sacbeob* are more difficult to penetrate, being based largely upon limited textual references, ethnographic and historical analogies, and archaeological patterning. William Folan (1991, 226–7) states that, like other types of monumental architecture (cf. Aveni 1980; Aveni et al. 2004; Fuson 1969), some *sacbeob* may have been laid out in alignment with significant astronomical bodies; he provides several significant orientations for the roadways of Cobá. Nicholas Dunning (1992, 147–8) believes that the Uxmal–Nohpat–Kabah *sacbe* system is part of a geomantic alignment that recreated the celestial serpent on the landscape. *Sacbeob* have been further related to the *kusansum* concept of the Yucatec Maya (a large rope through which blood flowed, frequently pictured as twisted cords [Tozzer 1978 (1907), 153]), which provided an axis mundi for their model of space (Miller 1974). Thus, causeways served as the physical devices through which powerful forces flowed to connect material spaces and the peoples who populated them.

Who Built *Sacbeob*?

The questions of why *sacbeob* were built and who built them are closely tied together. As with other forms of monumental architecture, Mayanists have long assumed that the central government, commonly conceived of as a king for Classic Maya polities, was responsible for the construction of causeways. However, as researchers are beginning to challenge this supposition for some forms of monumental architecture (cf. Lucero 2007), it seems reasonable to consider other options for *sacbeob*. Potentially, this assumption is an artifact of our own western cultures, whose road networks are paid for by taxes, and then built and maintained by various federal, state, and local governments. However, we too have private toll roads, private lanes, and driveways paid for, used, and maintained by individuals, businesses, clubs, religious organizations, and academic institutions.

When considering the ancient Maya, it is difficult to separate the religious from the political, with the former being closely tied to the latter and used to justify its power (Schele and Freidel 1990). A causeway built at the behest of a king may have been used for religious processions that increased confidence in the ruler's ability to influence the supernatural and therefore what we might term his political power. Likewise, some corporate groups, without direct control of the entire site but with influence over a large group and perhaps still heavily imbued with religious meaning, may have had sufficient resources to construct roadways. As in our own western cultures, it is unlikely that they did so without the permission, or at least complicit support, of the central government.

While religion permeated nearly all aspects of Maya life, no distinct "church" existed as a separate entity from the "state." Therefore, as we currently understand ancient Maya society, the best candidate for a distinct corporate group potentially capable of marshalling the resources needed to build a roadway is probably a lineage of individuals related by blood or marriage. Such a kin unit would have not only included living persons; it would have also contained, and been based upon, the group's ancestors (McAnany 1995). Not all ancestors would have been equally revered; instead, people who had held positions of particular respect within the household or community would have received particular attention. For the ancient Maya, the house is the home of one's ancestors, with subfloor burials a frequent occurrence (Webster 1997). The deceased did not go away, surviving only as memories; one literally lived with them (McAnany 1995). Ancestors interred in public places, such as temples, were traditionally officeholders, who were believed to hold authority in the spirit world (Bunzel 1952, 270; McAnany 1995, 49). Their descendants could continue to call upon them for guidance or intercession. When the living family member was a ruler, this might even include matters of state. A famous illustration of this possibility is a set of lintels from Yaxchilan, which depict the ruler Shield-Jaguar performing a series of rituals, assisted by his wife Lady Xoc, in order to communicate with his ancestor Yat-Balam as a part of his governing responsibilities. Other sites have provided evidence of the bundled bones and relics of important ancestors being kept as relics or disinterred in order to "attend" the ceremonies of their descendants (Schele and Freidel 1990). Therefore, it is quite likely that a kin group's causeway might be concerned with connecting its living, as well as its deceased, members to each other or to public monuments.

If a lineage were responsible for building a *sacbe*, how would this be distinct from that built by a central government? With the limited pool of potentially available evidence, it seems most logical to look at the locations that a given road connects, as well as the route that it takes to get there. These provide clues about the "why" that, in turn, implies the "who." Testing such a hypothesis, if even possible, would require extensive excavations to explore the functions and contemporaneity of the associated features.

The Postclassic site of Mayapan provides an example of a roadway that, based upon its associations, might have been built by a lineage. Harry Pollock (1954; 1956) postulates that Mayapan's principal *sacbe* served to connect an elite domestic unit (Structures R-95 to R-99), or palace, to a domestic-ceremonial group (Z-50). The function of the road appears to have been ceremonial, potentially a procession path for the occupants of the group formed by Structures R-95 to R-99, although it certainly would have had social and perhaps political implications as well. Pollock believes that the connection between the two groups was completed relatively late in Mayapan's main occupation; this occupation is now thought to have begun around 1050/1100 CE, with major constructions continuing until around 1350 CE (Milbrath and Peraza 2003, 21–4).

Other examples are much less clear, however, with elite domestic structures being connected to ostensibly "public" ceremonial buildings. Gair Tourtellot (1988) has suggested that Sayil's internal causeway connects a number of functionally distinct locations, serving as a ritual procession path from the ruling family's residence to an architectural group including the ballcourt. As a corporate group, an elite lineage would have had many motivations to make this physical connection, which would have provided them with unique physical, symbolic, cosmological, social, and political ties. However, the "central government" (if such a thing can be considered to be distinct from a ruling or other elite lineage)

Figure 6.2 Photograph of *sacbe* 3 at Yo'okop.
Source: Photograph by Justine M. Shaw.

would also have had reasons to construct such an obvious link. Dispersing power in this manner, using the "social currency" (Reents-Budet 1994) of a causeway to tie in elite lineages, might have helped to gain or maintain the support of key community constituencies. Lisa LeCount (1999) suggests that at Terminal Classic Xunantunich local elites attempted to build consensus and establish links to subgroups within the community by giving luxury items, including polychrome ceramics, down through the social hierarchy. At Copán, this took the form of hieroglyphic benches in four elite residential compounds in the eastern half of the valley (Fash et al. 2004), while at Tikal and Uaxactún the strategy of "democratization" included non-ruling nobles erecting their own monuments as early as the Early Classic (Valdés and Fahsen 2004). By the late ninth century CE, rulers of Ixlú and Jimbal were using the Tikal emblem glyph (Valdés and Fahsen 2004, 151). Allowing lineages to construct causeways, or even paying for *sacbeob* that largely serviced particular corporate groups, would be consistent with these better documented examples.

Sacbeob would have made a particularly public statement about a given social group being tied to the central power, whether that group was a lineage or even a formerly independent settlement. Although erecting a carved stela or bench might be impressive to other elites, who might enter the more restricted-access contexts in which inscribed monuments were generally placed and who would have the ability to read them, a causeway could be "read" by all. The sight of the remnants of a roadway thrust above the deep red soil of the Northern Maya Lowlands is still impressive today (Figure 6.2). When it was newly built, paved in brilliant white, packed, powdered limestone, it must have been stunning. This physical metaphor for a social, political, and cosmological link would have been evident to all residents and visitors.

Who Used *Sacbeob*?

While *sacbeob* would have been visible to all, would everyone actually have had the right to use a given roadway? Who would have been its intended users, and how might these have varied from its actual users? As with questions related to who built *sacbeob*, these concerns are linked to why a particular road was built. However, they move beyond this initial stage of conception to include actions that took place, and attitudes that evolved, during the entire useful life of a given causeway.

The originally intended users of a *sacbe* can be deduced through an examination of the road's destinations, as well as the course that it takes to get there and the forms of the road itself. Nearly all Maya causeways are straight, although a limited number do exhibit minor angle changes. At Calakmul, some roads change angles in order to allow them to circumvent seasonally swampy areas (Folan et al. 1995a, 277), while others cut directly through these hazards (Folan et al. 1995b, 313; 2001, 294–6). However, evidence from Ichmul (Flores and Normark 2004), Yaxuna (Shaw 1998), and Yo'okop (Shaw et al. 2001) indicates that, even when features of moderate size lie in the projected path of a *sacbe*, every effort is made to maintain the same line, even to the point of covering earlier constructions (Figure 6.3). As stated earlier, the height of a particular road frequently varies, with the apparent intent of maintaining a relatively even grade. The width, however, is generally consistent along the entire span of a causeway. Within the entire feature class, widths from about 1 m to 20 m are seen (Shaw 2008).

Such variation in width certainly raises questions about whether or not the Maya would have seen all *sacbeob* as a single feature class. Archaeological, ethnohistoric, and ethnographic evidence indicates that they did not; documented systems of form- and function-based terms for various types of roads vary through time and space (Bolles and Folan 2001; Shaw 2001; 2008). Regardless of this classification issue, who used the things that Mayanists currently call *sacbeob* and what were they used for?

Ross Hassig (1990; 2006) points out that with all Mesoamerican traffic being pedestrian, roads took the shortest distance between two points, disregarding most changes in the terrain, which would have posed much less of a problem for foot traffic. In contrast, roadways designed for vehicles, such as today's highways, attempt to alleviate significant topographic variation at the cost of taking a longer route to link points. At the same time, roads traveled by pedestrians generally attempt to link as many people and places as possible, see primarily local traffic, and tend to link to pre-existing local routes. On the micro-scale, they tend to consist of a series of fairly straight lines. When the entire courses of pedestrian roads are examined, however, they zigzag between the destinations being connected.

The straight and generally relatively short Maya *sacbeob* do not necessarily fit Hassig's predictions for roadways used by the populace. While they do link two particular points in the shortest manner possible, most, with a purposefully-straight path, do not make an effort to link multiple locales. Today's footpaths, and presumably those of the ancient Maya, do follow Hassig's predictions. They

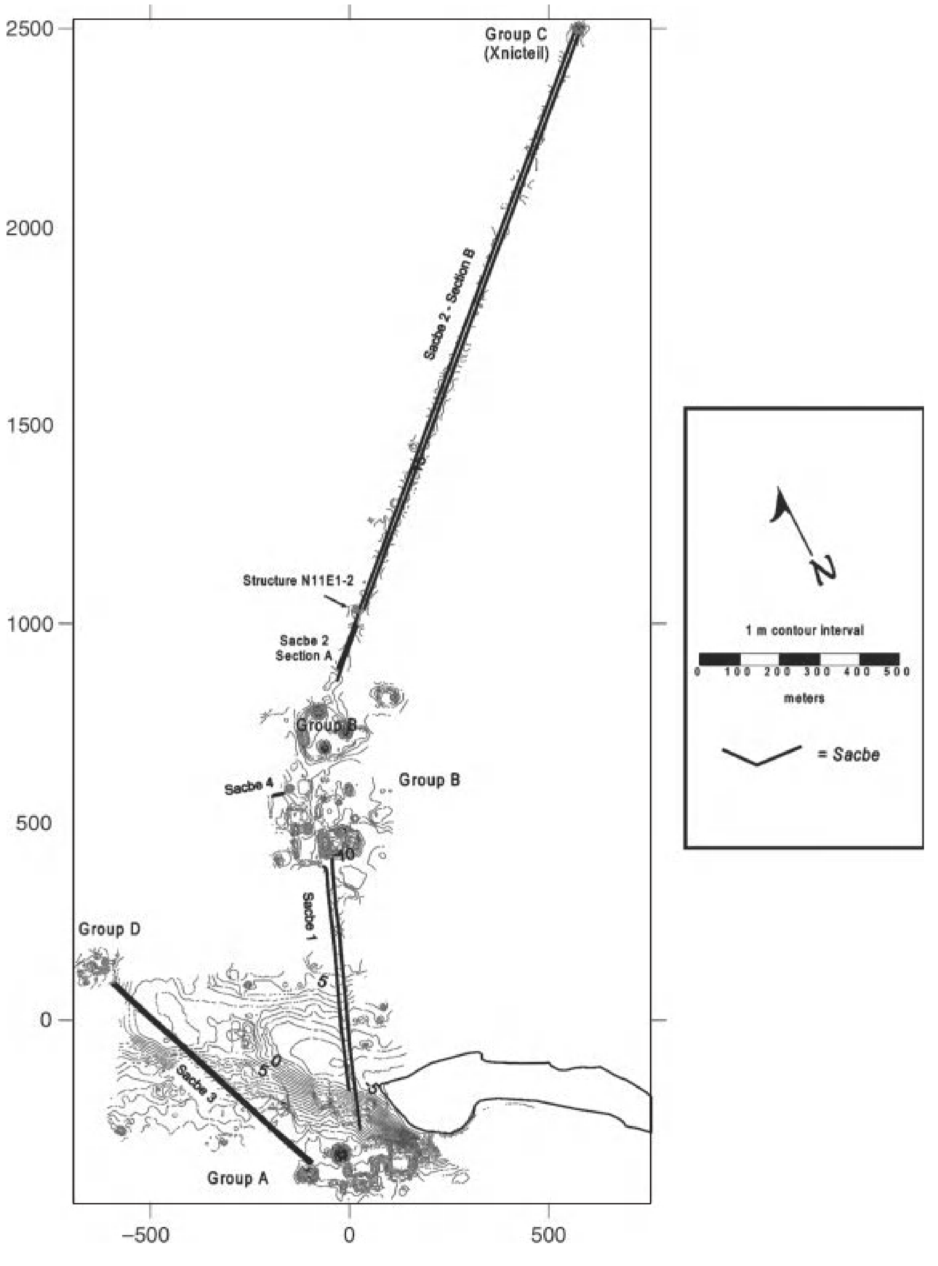


Figure 6.3 Yo'okop's *sacbe* system.
Source: Map by Alberto Flores and Justine M. Shaw.

skirt significant topographic changes and obstacles that would take a considerable effort to move, such as a large tree or bedrock outcrop, but otherwise maintain a relatively straight path between two points of interest. However, along their courses they weave between multiple points; when a population center, water source, or other resource of interest is nearby, the path will turn or branch to provide access or to include the local traffic. An example of this contrast is seen at the site of San Felipe, where a modern path sharply turns to avoid private property walls within a village and then winds between trees and other obstacles, while the ancient *sacbe* that it bisects maintains a straight course over equivalent terrain (Figure 6.4).

This characteristic implies that, regardless of their actual use following construction, *sacbeob* were not designed to be used simply as everyday traffic paths to connect the populace with destinations of everyday interest. Instead, forms and destinations of *sacbeob* imply that they were not designed for "common" users or uses. Even if their eventual, actual uses did include helping people to cross through otherwise congested zones, their intended use appears to have been for relatively special purposes and, potentially, for relatively special people.

Further examination of the form, and especially the width, of Maya causeways shows that, with rare exceptions, they are far wider than the average modern Maya footpath. The latter, at its widest, allows two people to walk abreast without brushing vegetation or each other. Yet, only one of the two people is actually able to follow the worn, smoother course of the true path. As my colleagues and I commute to and from our archaeological sites, we have noticed that the wider paths are good for conversation. However, in my experience, these "doublewide" paths are primarily present where cattle are regularly moved from one field to another, or there is some reason that a truck must occasionally use the path. Nearly all Maya *sacbeob*, however, allow multiple people to walk next to each other.

Few of the common potential functions of causeways – transporting people and goods, capturing or containing water, expressing political hegemony, socially integrating a populace, and conducting a religious ceremony – seem to require such a wide roadway. As seen above, the form and course of most *sacbeob* are not consistent with basic transportation as a primary intended purpose. Water management might require a somewhat thicker causeway in order to dam a reservoir, but there would be no need to maintain this same width beyond the water or in the absence of any water at all. To our knowledge, the Maya did not maintain standing armies, and there is no evidence that their style of combat would have involved marching any sort of offensive armed force in a European-style formation down an open causeway. Potentially, a wider causeway might be more impressive to the viewer, thereby increasing the building site's political stature, as well as the degree to which a recipient population felt valued and therefore integrated socially. Equally, a wider causeway might involve more workers and therefore assist in the incorporation of a group. However, the most likely intended purpose may be that of religion, most specifically for processions,

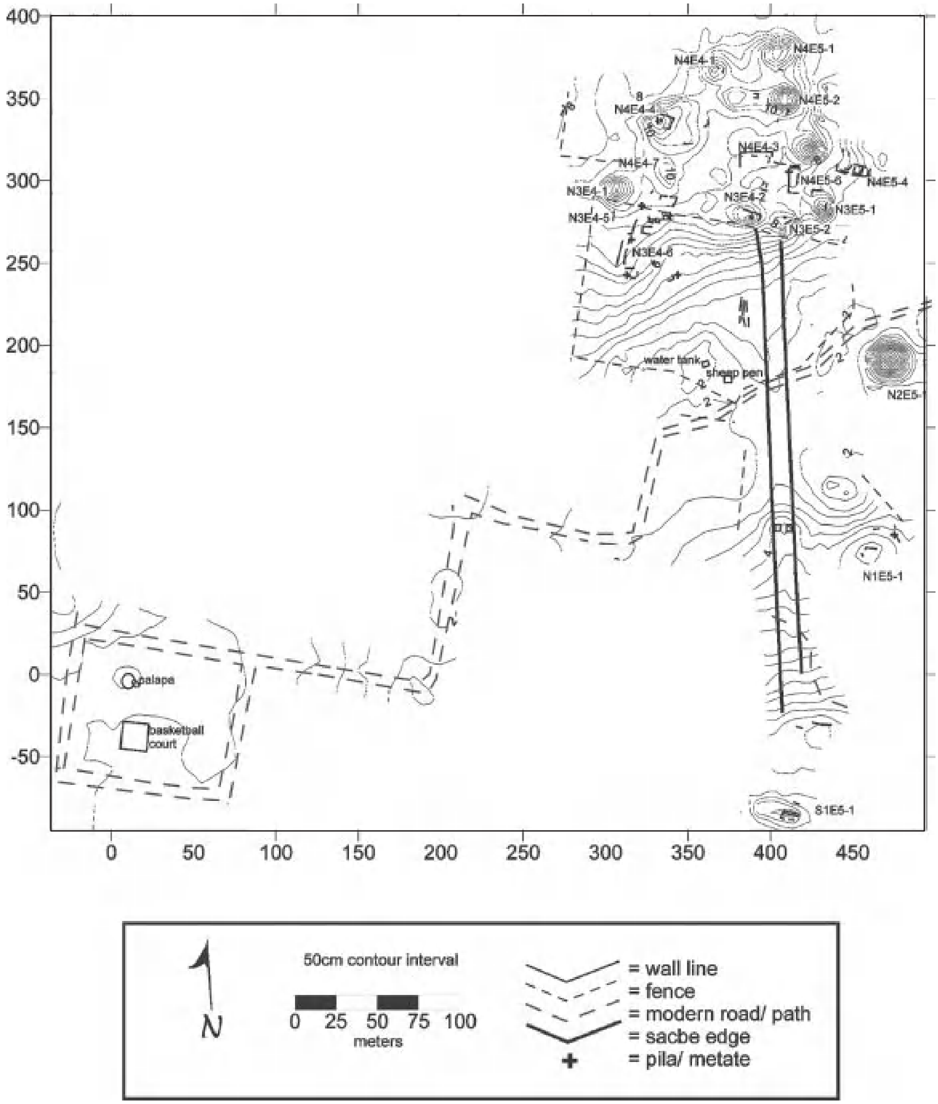


Figure 6.4 Modern roads, footpaths, and a *sacbe* at San Felipe.
Source: Map by Justine M. Shaw and Alberto Flores.

which would have required sizeable numbers of people to march together from one shared destination to another as part of a larger ceremony. Such a function, with the intended users being the participants in a ceremony that could also be both religious and political, is consistent with the termini of many, but not all, *sacbeob*.

The actual users, beyond those envisioned in the planning of the road, might have included others, who may have found the causeway a useful way to traverse part of their intended courses. Alternately, as a feature devoted to such a special purpose, it could be that *sacbeob* were off limits for such casual use. For many examples, such exclusion seems unlikely, since an effort not to tread on the roadway would have frequently resulted in a significant deviation, and enforcing such a taboo might have therefore necessitated considerable energy (Figure 6.4). Furthermore, it is not uncommon for *sacbeob* to contain ramps or steps to provide access along segments of the length of their courses (cf. Shaw et al. 2003; Uriarte Torres 2005). These would seem to provide an invitation for individuals to ascend and utilize the roadway, rather than signaling that all but a select few were barred. In contrast, Yo'okop's Sacbe 2 (Figure 6.5) seems to discourage casual use with an exceptionally high elevation and a vaulted passage at one point to permit passage without actually climbing up to the surface of the roadway.

Figure 6.5 Photograph of *sacbe* 2 at Yo'okop.
Source: Photograph by Justine M. Shaw.

Roads and Ruins

Walking along the surface of what remains of an ancient Maya *sacbeob* can be, in some ways, thrilling, in that one can be certain that several hundred years ago, someone else took these same steps along a surface that was considerably smoother. The view would have been of a bustling city, with today's collapsed mounds instead being the plastered and brightly painted facades of temples, palaces, and homes. These are the types of visions seen in *National Geographic* re-creations, designed to make sense of the rock piles for the general public.

However, as a settlement researcher with an interest in the everyday, common architecture used by the people, be it an apsidal foundation brace for a perishable superstructure or the few rocks that composed an altar, I must admit to being somehow more enthralled by the vision of our Yucatec Maya crew members trudging along a dirt path as we commute to and from work. While individual examples have come and gone, paths like this undoubtedly were relied upon as a critical part of the transportation network of their ancestors. Today's ruined *sacbeob*, even in their glory, were but a small part of the roads that would have been used in the past.

At the same time, due to the nature of these causeways, they are all that remain of the ancient road systems built and used by the Maya. As such, it is my hope that the current push to further document and analyze these roadways will continue. It is only by better examining both *sacbeob* and their contexts that we will be able to better understand, support, or refute the how and why questions that we have only begun to formulate.

Notes

Research at Ichmul and Yo'okop was funded by the Selz Foundation, the Antiqua Foundation, the H. John Heinz III Fund of the Heinz Family Foundation (reference number H1305), and the Foundation for the Advancement of Mesoamerican Studies Inc. (FAMSI project number 99016). Without these funds, our research in this region would not have been possible. I also would like to thank many relatives, co-workers, and hosts.

1 Cf. Benavides Castillo 1981; Chase and Chase 2001; Cobos 2003; Cobos and Winemiller 2001; Folan et al. 2001; Kurjack 1977; Shaw 2001; 2008.
2 See Dahlin 1984; Dahlin et al. 1980, 41, 45, 47–8; Dunning et al. 2006, 89; Scarborough 1993, 31.
3 See Bolles and Folan 2001, 307, 309; Flores and Normark 2004; Reid 1995, 127; Shaw 2008.

References

Adams, R. E. W. 1986. "The Maya City of Rio Azul." *National Geographic Magazine* 169.4: 420–51.

Ashmore, W. and J. A. Sabloff. 2000. "El Orden del Espacio en los Planes Cívicos Mayas." In S. Trejo, ed., *Arquitectura e Ideología de los Antiguos Mayas: Memoria de la Segunda*

Mesa Redonda de Palenque, 15–33. Mexico City: Instituto Nacional de Antropología e Historia and Consejo Nacional Para la Cultura y las Artes.

Ashmore, W. and J. A. Sabloff. 2002. "Spatial Orders in Maya Civic Plans." *Latin American Antiquity* 13.2: 201–15.

Aveni, A. 1980. *Skywatchers of Ancient Mexico.* Austin: University of Texas Press.

Aveni, A., S. Milbrath, and C. Peraza Lope. 2004. "Chichén Itzá's Legacy in the Astronomically Oriented Architecture of Mayapan." *Res* 45: 123–44.

Benavides Castillo, A. 1981. *Los Caminos de Cobá y sus Implicaciones Sociales.* Mexico City: Instituto Nacional de Antropología e Historia, Centro Regional del Sureste, Coleccion Cientifica.

Bolles, D. and W. J. Folan. 2001. "An Analysis of Roads Listed in the Colonial Dictionaries and Their Relevance to Pre-Hispanic Linear Features in the Yucatan Peninsula." *Ancient Mesoamerica* 12.2: 299–314.

Bunzel, R. 1952. *Chichicastenango: A Guatemalan Village*. American Ethnological Society 22. Seattle: University of Washington Press.

Carr, R. F. and J. E. Hazard. 1961. *Tikal Report No. 11: Map of the Ruins of Tikal, El Peten, Guatemala*. Philadelphia: University Museum, University of Pennsylvania.

Carrasco Vargas, R. 1993. "Formacion Sociopolitica en el Puuc: El Sacbe Uxmal-Nohpat-Kabah." In Ma. J. I. Ponce de Leon and F. Ligorred Perramon, eds., *Perspectivas Antropologicas en el Mundo Maya*, 199–212. Girona, Spain: Publicaciones de la Sociedad Española de Estudios Mayas no. 2.

Castañeda, Q. E. 1996. *In the Museum of Maya Culture: Touring Chichén Itzá*. Minneapolis: University of Minnesota Press.

Chase, A. F. and D. Z. Chase. 2001. "Ancient Maya Causeways and Site Organization at Caracol, Belize." *Ancient Mesoamerica* 12.2: 273–81.

Cobos, R. 2003. "The Settlement Patterns of Chichén Itzá, Yucatan, Mexico." PhD diss., Tulane University.

Cobos, R. and T. L. Winemiller. 2001. "The Late and Terminal Classic-Period Causeway Systems of Chichen Itza, Yucatan, Mexico." *Ancient Mesoamerica* 12.2: 283–92.

Coe, M. 1992. *Breaking the Maya Code*. New York: Thames and Hudson.

Dahlin, B. 1984. "A Colossus in Guatemala: The Preclassic Maya City of El Mirador." *Archaeology* 37.5: 18–25.

Dahlin, B. 2000. "The Barricade and Abandonment of Chunchucmil: Implications for Northern Maya Warfare." *Latin American Antiquity* 11.3: 283–98.

Dahlin, B. and T. Ardren. 2002. "Modes of Exchange and Regional Patterns: Chunchucmil, Yucatan." In M. A. Masson and D. A. Freidel, eds., *Ancient Maya Political Economies*, 249–84. Walnut Creek: Altamira Press.

Dahlin, B., J. E. Foss, and M. E. Chambers. 1980. "Project Acalches: Reconstructing the Natural and Cultural History of a Seasonal Swamp at El Mirador Guatemala/ Preliminary Results." In R. T. Matheny, ed., *El Mirador, Peten, Guatemala: An Interim Report*, 37–57. Papers of the New World Archaeological Foundation no. 45. Provo, UT: Brigham Young University.

Dahlin, B., C. T. Jensen, R. E. Terry, D. R. Wright, and T. Beach. 2007. "In Search of an Ancient Maya Market." *Latin American Antiquity* 18.4: 363–84.

Demarest, A. A., P. M. Rice, and D. S. Rice, eds. 2004. *The Terminal Classic in the Maya Lowlands: Collapse, Transition, and Transformation*. Boulder: University of Colorado Press.

Dunning, N. P. 1992. *Lord of the Hills: Ancient Maya Settlement in the Puuc Region, Yucatán, Mexico.* Monographs in World Archaeology no. 15. Madison: Prehistory Press.

Dunning, N. P., T. Beach, and S. Luzzadder-Beach. 2006. “Environmental Variability among Bajos in the Southern Maya Lowlands and its Implications for Ancient Maya Civilization and Archaeology.” In L. J. Lucero and B. W. Fash, eds., *Precolumbian Water Management: Ideology, Ritual, and Power*, 81–99. Tucson: University of Arizona Press.

Fash, W. L. 1991. *Scribes, Warriors and Kings: The City of Copán and the Ancient Maya.* New York: Thames and Hudson.

Fash, W. L. and D. Stuart. 1991. “Dynastic History and Cultural Evolution at Copán, Honduras.” In T. P. Culbert, ed., *Classic Maya Political History*, 147–79. Cambridge: Cambridge University Press.

Fash, W. L., E. W. Andrews, and T. K. Manahan. 2004. “Political Decentralization, Dynastic Collapse, and the Early Postclassic in the Urban Center of Copán, Honduras.” In Demarest, Rice, and Rice, 260–87.

Flores Colin, A. and J. Normark. 2004. “All Roads Lead to Ichmul: Sacbeob in the Ichmul Region.” In J. M. Shaw, ed., *Final Report of the Cochuah Regional Archaeological Survey’s 2004 Field Season*, 72–94. Eureka: College of the Redwoods.

Folan, W. J. 1977. “El Sacbé Coba-Ixil: Un Camino Maya del Pasado.” *Nueva Antropología* 2.6: 30–42.

Folan, W. J. 1991. “Sacbes of the Northern Maya.” In C. D. Trombold, ed., *Ancient Road Networks and Settlement Hierarchies in the New World*, 222–9. Cambridge: Cambridge University Press.

Folan, W. J. 1992. “Calakmul, Campeche: A Centralized Urban Administrative Center in the Northern Petén.” *World Archaeology* 24.2: 158–68.

Folan, W. J. and G. E. Stuart. 1983. “El Proyecto Cartográfico Arqueológico de Cobá, Q. Roo: Informes Interinos Numeros 1, 2, y 3.” *Boletin de la Escuela de Ciencias Antropológicas* 4.22-3: 14–70.

Folan, W. J., J. Marcus, and W. F. Miller. 1995a. “Verification of a Maya Settlement Model through Remote Sensing.” *Cambridge Archaeological Journal* 5.2: 277–301.

Folan, W. J., et al. 1995b. “Calakmul: New Data from an Ancient Maya Capital in Campeche, Mexico.” *Latin American Antiquity* 6.4: 310–34.

Folan, W. J., L. A. Fletcher, J. May Hau, and L. F. Folan. 2001. *Las Ruinas de Calakmul, Campeche, México: Un Lugar Central y su Paisaje Cultural.* Campeche: Universidad Autónoma de Campeche, Centro de Investigaciones Históricas y Sociales.

Freidel, D. and J. A. Sabloff. 1984. *Cozumel: Late Maya Settlement Patterns.* New York: Academic Press.

Fuson, R. H. 1969. “The Orientation of Mayan Ceremonial Centers.” *Annals of the Association of American Geographers* 59.3: 494–511.

Gabbert, W. 2004. *Becoming Maya: Ethnicity and Social Inequality in Yucatán since 1500.* Tucson: University of Arizona Press.

Hassig, R. 1990. “Comercio, tributo y transportes.” *La economía política en el Valle de México en el siglo XVI.* Mexico City: Alianza Editorial Mexicana.

Hassig, R. 2006. “Rutas y caminos de los mexicas.” *Arqueología Mexicana* 14.81: 54–9.

Haviland, W. A. 2003. “Settlement, Society, and Demography at Tikal.” In J. A. Sabloff, ed., *Tikal: Dynasties, Foreigners, and Affairs of State,* 111–42. Santa Fe: School of American Research Press.

Hirth, K. 1982. “Transportation Architecture at Xochicalco, Morelos, Mexico.” *Current Anthropology* 23.3: 322–4.

Houston, S. 1993. *Hieroglyphs and History at Dos Pilas: Dynastic Politics of the Classic Maya.* Austin: University of Texas Press.

Johnson, G. A. 1989. "Dynamics of Southwestern Prehistory: Far Outside – Looking In." In L. S. Cordell and G. J. Gumerman, eds., *Dynamics of Southwest Prehistory*, 371–89. Washington: Smithsonian Institution Press.

Kurjack, E. B. 1977. "Sacbeob: Parentesco y Desarrollo del Estado Maya." In *XV Mesa Redonda,* 1: *Mesoamérica y Areas Circunvecinas*, 217–30. Guanajuanto: Sociedad Mexicana de Antropología.

LeCount, L. J. 1999. "Polychrome Pottery and Political Strategies in Late and Terminal Classic Lowland Maya Society." *Latin American Antiquity* 10.3: 239–58.

Lizana, B. de. 1988 [1633]. *Historia de Yucatan* (Historia 16; Edición Félix Jiménez Villaba). Madrid.

Lucero, L. 2007. "Classic Maya Temples, Politics, and the Voice of the People." *Latin American Antiquity* 18.4: 407–27.

Maldonado Cárdenas, R. 1995. "Los Sistemas de Caminos del Norte de Yucatán." In E. Vargas Pacheco, ed., *Seis Ensayos Sobre Antiguos Patrones de Asentamiento en el Área Maya*, 68–92. Mexico City: Instituto de Investigaciones Antropológicas, Universidad Autónoma de México.

Marcus, J. 1976. *Emblem and State in the Classic Maya Lowlands: An Epigraphic Approach to Territorial Organization*. Washington: Dumbarton Oaks.

Martin, S. and N. Grube 1995. "Maya Superstates." *Archaeology* 48.6: 41–6.

Mathews, P. 1991. "Classic Maya Emblem Glyphs." In T. P. Culbert, ed., *Classic Maya Political History: Hieroglyphic and Archaeological Evidence*, 19–29. New York: Cambridge University Press.

McAnany, P. 1995. *Living with the Ancestors: Kinship and Kingship in Ancient Maya Society.* Austin: University of Texas Press.

Milbrath, S. and C. Peraza Lope. 2003. "Revisiting Mayapan: Mexico's Last Maya Capital." *Ancient Mesoamerica* 14.1: 1–46.

Miller, A. G. 1974. "The Iconography of the Painting in the Temple of the Diving God, Tulum, Quintana Roo, Mexico: The Twisted Cords." In N. Hammond, ed., *Mesoamerican Archaeology: New Approaches*, 167–86. Austin: University of Texas Press.

Pollock, H. E. D. 1954. "The Northern Terminus of the Principal Sacbe at Mayapan." *Current Reports, Carnegie Institution of Washington, Department of Archaeology* 2:15: 529–49.

Pollock, H. E. D. 1956. "The Southern Terminus of the Principal Sacbe at Mayapan-Group Z. 50." *Current Reports, Carnegie Institution of Washington, Department of Archaeology* 2.37: 1–14.

Redfield, R. and A. Villa Rojas. 1962 [1934]. *Chan Kom: A Maya Village*. Chicago: University of Chicago Press.

Reents-Budet, D. 1994. *Painting the Maya Universe: Royal Ceramics of the Classic Period.* Durham, NC: Duke University Press.

Reid, D. M. 1995. "Inter- and Intra-Site Sacbeob of the Naranjal Area." In S. L. Fedick and K. A. Taube, eds., *The View from Yalahau: 1993 Archaeological Investigations in Northern Quintana Roo, Mexico,* 121–28. Riverside: University of California.

Scarborough, V. 1983. "A Preclassic Maya Water System." *American Antiquity* 48.4: 720–44.

Scarborough, V. 1993. "Water Management in the Southern Maya Lowlands: An Accretive Model for the Engineered Landscape." In V. Scarborough and B. Isaac, eds., *Economic Aspects of Water Management in the Prehispanic New World*, 17–69. Greenwich, CT: JAI Press.

Scarborough, V. 1998. "Ecology and Ritual: Water Management and the Maya." *Latin American Antiquity* 9.2: 135–59.

Schele, L. and D. Freidel. 1990. *A Forest of Kings: The Untold Story of the Ancient Maya*. New York: William Morrow.

Shaw, J. M. 1998. "The Community Settlement Patterns and Residential Architecture of Yaxuná, Yucatan, Mexico from AD 600–1400." PhD diss., Southern Methodist University, Dallas.

Shaw, J. M. 2001. "Maya Sacbeob: Form and Function." *Ancient Mesoamerica* 12.2: 261–72.

Shaw, J. M. 2008. *White Roads of the Yucatan: Changing Social Landscapes of the Yucatec Maya*. Tucson: University of Arizona Press.

Shaw, J. M., ed., et al. 2001. *Final Report of the Selz Foundation's Proyecto Arqueológico Yo'okop 2001 Field Season: Excavations and Continued Mapping*. Eureka: College of the Redwoods.

Shaw, J. M., ed., et al. 2003. *Final Report of the Cochuah Regional Archaeological Survey's 2003 Field Season*. Eureka: College of the Redwoods.

Tourtellot, G. 1988. *Excavations at Seibal, Department of Peten, Guatemala: Peripheral Survey and Excavation, Settlement and Community Patterns*. Memoirs of the Peabody Museum of Archaeology and Ethnology 16. Cambridge, MA: Harvard University Press.

Tozzer, A. M. 1966 [1941]. *Landa's Relación de las Cosas de Yucatán: A Translation*. Papers of the Peabody Museum of American Archaeology and Ethnology. Cambridge, MA: Harvard University. Repr. New York: Kraus Reprint Corporation.

Tozzer, A. M. 1978 [1907]. *A Comparative Study of the Mayas and the Lacandones*. Report of the Fellow in American Archaeology 1902–1905, Archaeological Institute of America. New York: Macmillan Company. Repr. New York: AMS Press.

Uriarte Torres, A. J. 2005. "Aproximación al Estudio de la Funcionalidad del Sistema de Caminos de Dzibilchaltún: Estructuras Asociadas a los Sacbeob 2 y 5." Paper presented at the *Segundo Congreso Internacional de Cultura Maya*, Mérida, Yucatán, March 15, 2005.

Valdés Gomez, J. A. and F. Fahsen. 2004. "Disaster in Sight: The Terminal Classic at Tikal and Uaxactun." In Demarest, Rice, and Rice, 140–61.

Villa Rojas, A. 1934. *The Yaxuná-Cobá Causeway* (Contributions to American Archaeology 2.9). Washington: Carnegie Institution of Washington.

Webster, D. 1997. "Studying Maya Burials." In S. L. Whittington and D. M. Reed, eds., *Bones of the Ancient Maya: Studies of Ancient Skeletons*, 3–12. Washington: Smithsonian Institution Press.

Witschey, W. R. T. 1993. "The Archaeology of Muyil, Quintana Roo, Mexico: A Maya Site on the East Coast of the Yucatan Peninsula." PhD diss., Tulane University.

7

The Chinchaysuyu Road and the Definition of an Inca Imperial Landscape

Catherine Julien

Introduction

"Tawantinsuyu" described the union of four *suyus*, the territory annexed by the Incas during the century or so before Spaniards arrived in the Andes during the 1520s (Figure 7.1; Table 7.1). The *suyu* names were taken from an important polity in each; they referred simultaneously to the larger territory and to a road that departed from Cuzco, the Inca capital, in the direction of the *suyu*. The roads were an essential part of the conceptualization of Tawantinsuyu, as well as an important structuring feature of an initial form of imperial administration. They were also integral features of uniquely imperial landscapes, particularly the Inca road of Chinchaysuyu as it neared Cuzco.

The Inca imprint on the landscape has been known largely from what Inca builders constructed in stone. Simultaneously architects and engineers, the Incas left a corpus of stonework – roads, terraces, canals, buildings, and sculpted bedrock – impressive on first sight for both its monumentality and its permanence. Our gaze tends to focus on what was built, but the Incas looked further – in most instances as far as the eye can see, to the horizon. They also perceived a relationship between people and the land, involving sacred features on the landscape, called *huacas*, to which they made sacrifice. A case in point is the landscape of the Cuzco Valley, the Inca homeland. The Incas organized an official cult of sacrifice to more than 400 *huacas* located here, an area extending from the urban precincts of the Inca city to

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

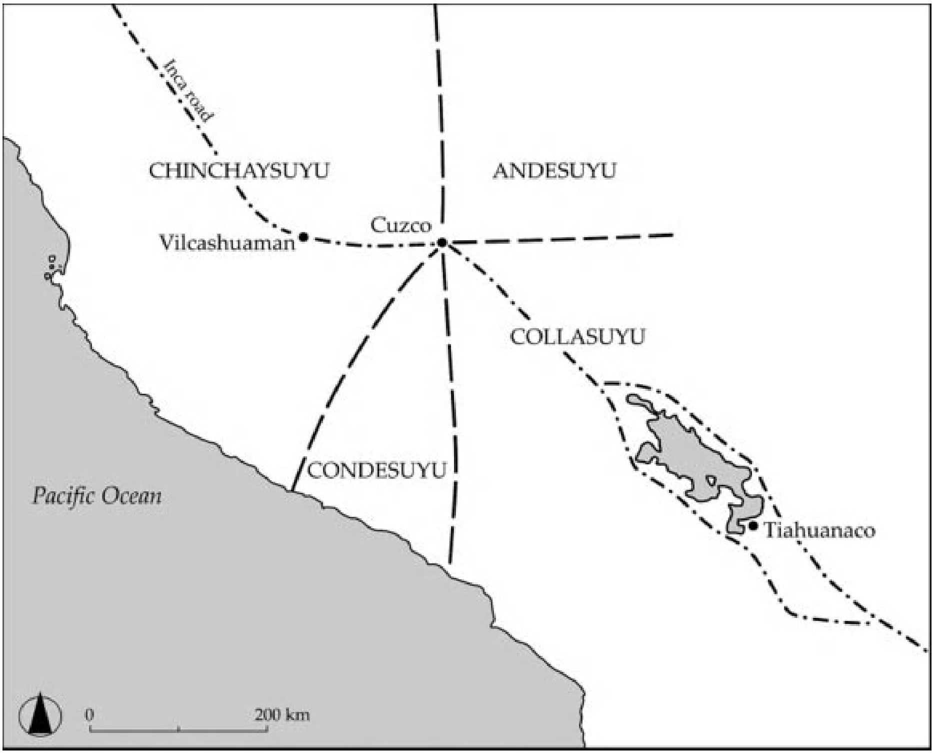


Figure 7.1 Tawantinsuyu.

Table 7.1 Correlation between Inca genealogy and the European calendar.

Spaniards arrive in Cuzco	December 1533
Death of Huayna Capac, the eleventh Inca	1528
Rule of Tupa Inca, the tenth Inca	Late fifteenth century
Defeat of the Chancas by Pachacuti, the ninth Inca, initiation of campaigning in Chinchaysuyu	Early fifteenth century
Consolidation of Inca control in the Cuzco region and the beginning of campaigns beyond it (during the rule of the eighth Inca)	Late fourteenth century
Consolidation of Inca control in the Cuzco Valley (when the fourth Inca was young)	Late eleventh century

the horizon (Julien 2008; Rowe 1979). Some of the *huacas* were natural features of the landscape, such as stone outcrops or springs, while others were portable objects or places associated with historical personages or events, in particular the timespan covered by an Inca dynastic genealogy of eleven generations (Table 7.1). The obligation to make sacrifices to particular *huacas* was distributed among the diverse communities in the valley.[1] The list was organized following the *suyu* division, and certain inferences can be drawn from the list's features. Its definition of landscape

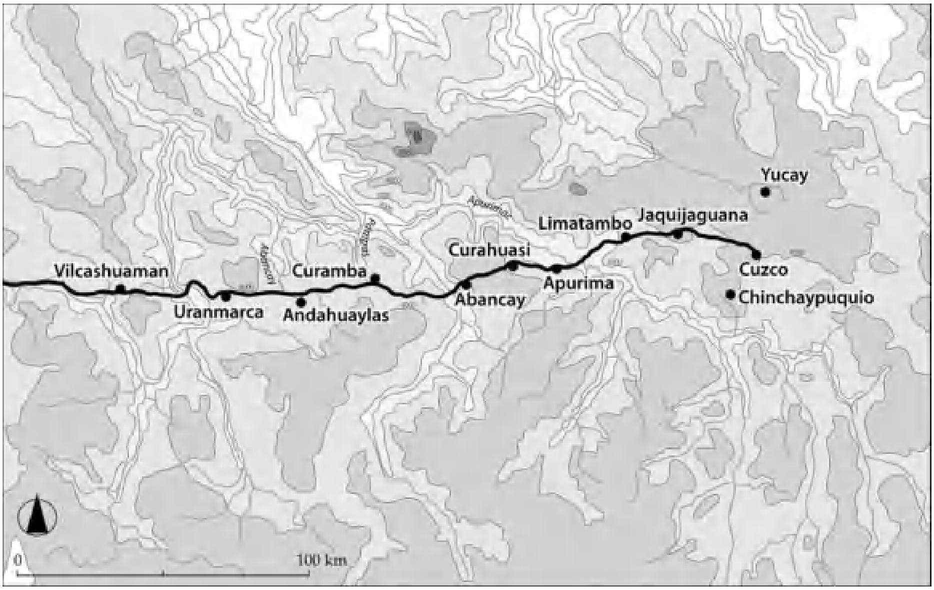


Figure 7.2 The Chinchaysuyu road from Vilcashuaman to Cuzco.

reflects a particular moment in time and the capacity of its author(s) to define what was sacred on the landscape. The process of definition appears to have been a dynamic one, though the particular definition evident from this list does not antedate the time of the Inca imperial expansion.

With the expansion came new opportunities to impose an Inca order on the land. The most obvious and spectacular case of an Inca imperial landscape may be the region traversed by the Chinchaysuyu road as it neared Cuzco (Figure 7.2). Pachacuti, the ninth Inca in the official genealogy (Table 7.1), was the first to campaign in Chinchaysuyu beyond the region of Cuzco. He developed the road and began the transformation of the landscape, an initiative furthered by both his son and grandson in a surprisingly coherent manner. They reshaped the land by redefining communities and their ties to it. The Chinchaysuyu road from Vilcashuaman to Cuzco will provide the focus for this chapter, especially two landscapes it crossed as it approached Cuzco: the Limatambo Valley and the pampa of Anta. Both documentary and archaeological records make contributions, and although the former are frustratingly limited, they are essential to understanding how to read and interpret the features of an Inca imperial landscape.

The Chinchaysuyu Road from Cuzco to Vilcashuaman

Pachacuti constructed the road from Cuzco to Vilcashuaman in the course of a military campaign, building the road and erecting bridges as he went (Julien 2009). After he stopped campaigning in person, he issued instructions to captains about

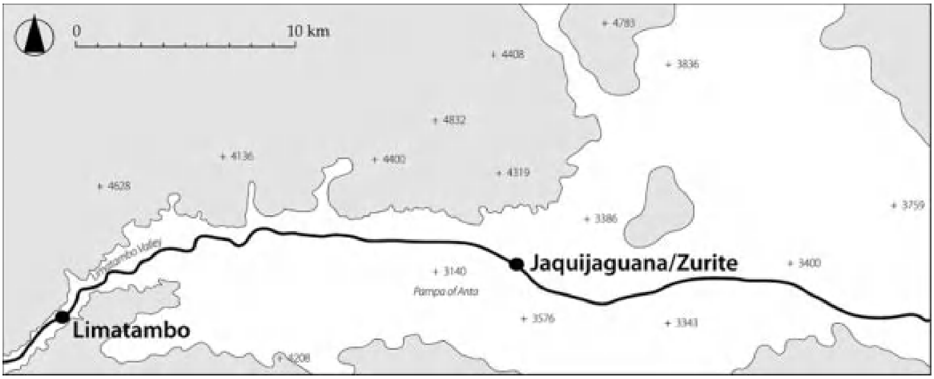


Figure 7.3 The Chinchaysuyu road from Limatambo to Cuzco.

the infrastructure they were to develop as they continued the annexation of territory along the major arteries of Tawantinsuyu (Betanzos 1987 [1551–7], pt. 1, ch. 22). A historical perspective on the development of this Inca road draws heavily from a narrative account of the Inca past by Juan de Betanzos, a Spaniard skilled as an interpreter who was connected by marriage to the segments of the Inca dynastic line, called *panacas*, most involved in the Inca expansion. He draws material from a life history of Pachacuti preserved by the ruler's descent group in Cuzco (Julien 2000, 91–130) and reproduces the instructions just mentioned. Pedro de Cieza de León, a soldier who traveled in the Andes during the 1540s and collected information from Incas and local people about the Inca empire, also provides early eyewitness information about the roads and their use in the time of Inca rule (1984 [1553]; 1986 [ca. 1554]).

Just before arriving in Cuzco, the road traversed a region that a generation before had been the seat of a lord named Tocay Capac who had dominated the Cuzco region. He was defeated by Pachacuti's father, according to Pedro Sarmiento de Gamboa (1906 [1572], chs. 24–5, 57–8), another author who compiled material from Inca sources in Cuzco. Tocay Capac's home territory was centered at Maras, north of the pampa of Anta (Figure 7.3). With his defeat, the Incas may have acquired some kind of authority over the territory in his domain. In any event, their ascendency in the Cuzco region is probably what then attracted the attention of the Chancas, a local power in the Ayacucho region farther north. They attacked Cuzco, provoking a crisis in dynastic authority during which Pachacuti emerged as the new Inca. After defeating the Chancas, his first task was to retaliate against them. He met them in battle at Jaquijaguana, on the pampa of Anta (Figure 7.3), where they had allied with the local residents. Pachacuti won the day (Betanzos 1987, pt. 1, ch. 10: 43). The people of Jaquijaguana had every reason to expect that the Incas would kill all of them, or nearly all, for having participated in the Chancas' campaign. However, Pachacuti spared them, telling them that he did so because they were *orejones* ("big ears" in Spanish, in reference to the ear spools the men wore that marked their initiation to adulthood according to an Inca rite). By contrast, captured Chancas were brutally killed and their bodies left *in situ* as a memorial (Betanzos 1987, pt. 1, ch. 10: 43–5; Julien 2007, 337–40). Pachacuti then planned his first major campaign to annex territory, building the Chinchaysuyu road as far as Vilcashuaman.

There were still Chancas to defeat, but this military campaign and later ones were directed toward annexing territory rather than defeating a particular enemy. According to Betanzos, Pachacuti embarked on the campaign only after rebuilding Cuzco and reorganizing at least part of the larger Cuzco province, so that armies recruited from its territory could be away for extended periods. The idea of a "conquest state" had been born.

The account that Betanzos gives of the Vilcashuaman campaign focuses on the construction of roads and bridges as the army progressed and on the march back to Cuzco with captives. He provides particular detail about the construction of a straw suspension bridge over the Apurimac River, the most impressive span bridged by the Incas. A second impressive bridge was built over the Pampas River later in the same campaign (Bauer 2006). Betanzos says little about battles except to approximate their duration. Several peoples submitted to the Inca onslaught without fighting, including some of the Chancas. Other peoples – including the Soras, Lucanas, and remaining Chancas – fortified themselves in Soras territory and waited for the Inca attack. After ordering his Incas to build centers at Curamba and Vilcashuaman, Pachacuti marched off to meet the peoples defying him, constructing roads and bridges as he went (Betanzos 1987, pt. 1, ch. 18: 87–91).

Pachacuti conducted only two major campaigns in person, the one to Chinchaysuyu and a second to Collasuyu. Though Tawantinsuyu was composed of four parts, the four were not equal, and Inca conquests in Condesuyu and Andesuyu were not described. Nor were the roads there of the same order of importance as the Chinchaysuyu and Collasuyu ones; when united, these two formed the principal highland Inca road from north of Quito in present-day Ecuador to central Chile.[2] The *suyu* division structured the larger territory ruled by the Incas, notably the region around Cuzco, a province which was divided into four districts called by the *suyu* names. Tawantinsuyu as an organizing concept can be linked to the time of Pachacuti's rule, and the *suyu* roads were its framework.

The Chinchaysuyu road also served as the framework for an embryonic form of Inca provincial administration (Julien 2009). Pachacuti sent several captains out on campaign in Chinchaysuyu to extend his conquest, issuing instructions about the infrastructure that was to be built along the road. First, he ordered them to establish posts to facilitate communication with Cuzco, that is, with himself; these posts were to be staffed and supplied by local people. The captains were also to create *tambos* or "lodging-places" for the army, where groups of women were assigned to prepare food and brew beer for the soldiers' sustenance. A transport service was to be established between *tambos*; local people were to transport loads from the *tambo* they served to the next one. The captains were further instructed to build a major center called a *Xuco Guaman* every 40 leagues (220 km, the distance of a "falcon flight," as implied by the name). These centers had greater storage capacity and also herds assigned to them, presumably so that armies could be hosted there for longer periods.

Other features of provincial administration were developed to link newly subject peoples to this infrastructure. Officials known as *llactacamayos* were to be embedded in local towns for the purposes of gathering information and overseeing the collection of goods or foodstuffs produced by subject peoples (Julien 2006). The *llactacamayos* of the smaller towns reported to the *llactacamayos* of larger ones, who in turn reported to an *orejón* embedded in the province. In this case the term *orejón* refers to members of the Inca dynastic line who traced their descent from Manco Capac and one of his sisters, the original Inca ancestors. These *orejones* were the architects of the storage structures in the major centers where they lived (presumably the centers that Betanzos called Xuco Guaman). Such major centers, then, were hubs for an incipient form of provincial administration.

Because Spanish historical narratives about the Incas focus on the Inca expansion, they have little to say about the Vilcashuaman-Cuzco region after the time of Pachacuti. Later Incas campaigned in more distant regions, extending the boundaries of Tawantinsuyu. Cieza de León wrote that Pachacuti's son and grandson built their own roads, noting that roads built by all three Incas could be found in the vicinity of Vilcashuaman; Huayna Capac's road was the one "in use now and that will always be used" (1986, ch. 15: 42). Cieza's statement suggests that the roads built by Pachacuti's successors might vary in route but still served to connect major centers like Vilcashuaman.

It was Huayna Capac's road that the Spaniards traveled as they arrived in Cuzco for the first time in 1533. Again, it was the road network under him that they tried to re-establish only a decade later when they began to consider governing the Andes. The ordinances issued by Governor Cristóbal Vaca de Castro in 1543 (1908) to re-establish the road network and the service that had been provided to travelers includes the names of the *tambos* on the Chinchaysuyu road between Vilcashuaman and Cuzco (Table 7.2; Figure 7.2). No reference was made to the posts mandated by Pachacuti in his ordinances, but the series of *tambos*, spaced almost equidistantly along this segment of the road, indicates the execution of Pachacuti's design. Traces of the road and sites along it have been identified archaeologically, adding further confirmation.

A description of the dispatch of an army from Cuzco by Huayna Capac provides us with an idea of how the chain of *tambos* and the center at Vilcashuaman continued to serve the purpose for which they had been built. An indigenous author named Juan de Santa Cruz Pachacuti Salcamaygua (a native of the Canchis province just southeast of Cuzco, and no relation to the Inca Pachacuti) described a campaign to the Quito region led by Huayna Capac, in which his great-grandfathers had participated. Huayna Capac recruited the army for this campaign while traveling in Collasuyu. Because the army would be too large to assemble in Cuzco, it was dispatched as recruits arrived. Companies of 500 soldiers were formed, and then two of them were placed under the command of a single captain; they were dispatched continuously over a period of three and a half months (Pachacuti Yaqui Salcamaygua 1993 [early seventeenth century], 247–9).

Table 7.2 *Tambos* from Vilcashuaman to Cuzco.

Vilcashuaman
Uranmarca
Andahuaylas
Curamba
Abancay
Curahuasi
Apurima
Limatambo
Jaquixaguana

Source: Vaca de Castro 1908 [1543].

The companies marched eight abreast and were reviewed at points along the road to ensure that they marched in order. The remains of small stepped platform structures have been documented archaeologically at Vilcashuman, Curamba, and Abancay.[3] These structures, called *usnos*, are located in the central plaza of each site. They are ideal for the purpose of reviewing an army, though they had other functions as well (Albornoz 1989 [1581–5], 176; Protzen and Rowe 1994, 241). Pachacuti also describes what took place at a *Guamanin* – his term, it appears, for the major centers that Betanzos called *Xuco Guaman*. Roll was taken, and arms, clothing, and food were distributed. Pachacuti notes that this army halted at Vilcashuaman to celebrate the ritual of *Capac Raymi*, when young Inca men were initiated to adult status. At Cuzco, the events that took place during this ritual unfolded over a period of at least three weeks. Cuzco could not house an army the size of this one for that length of time, but an Inca center like Vilcashuaman, built for the purpose, apparently could.

The road and its associated infrastructure may have been developed entirely during the lifetime of the Inca Pachacuti. Even so, they were to be no more than just a beginning. Later projects, perhaps initiated under Pachacuti but only fully realized under his successors, left an indelible and surprisingly coherent stamp on the surrounding landscape, particularly as the road neared Cuzco.

Imperial Landscapes

Because of the monumentality and permanence of Inca constructions in stone, scholars' attention has focused on archaeological traces of the Inca road and its infrastructure. The same can be said, for the same reasons, about the more spectacular archaeological sites in the Cuzco region, most of them properties that belonged to particular Inca rulers and incorporated elaborate residences.

A prime example is Huayna Capac's estate in the Yucay Valley (Niles 1999). He had palaces built for himself in Quispihuanca, and he developed a lake and hunting precinct in the nearby valley of Chicón for his own recreation. These properties, called "Inca estates" by those who study them, were still administered by members of Huayna Capac's *panaca* at the time of the Spanish arrival, and for this reason we are unusually well informed about them. We know that Huayna Capac began by reclaiming land: first he had the river channeled to drain marshy land, and then he had the hills leveled. Both these steps produced arable lands that could be worked by the *mitima* that he intended to install there, that is, communities of people resettled at a distance from their home province for various purposes. In this instance they comprised 1,000 households (a *waranqa*) from Chinchaysuyu, and a second *waranqa* from Collasuyu. These households worked lands in the Yucay Valley and the eastern lowlands for the benefit of Huayna Capac's *panaca*, as well as allotments of land for their own subsistence. Writings from the following decades have allowed us to learn a great deal more about their purpose and organization than would have been possible by relying on archaeological study alone.

Written sources also tell us about other kinds of properties and projects developed by the Incas, of more relevance to a study of the landscapes developed along the Chinchaysuyu road near Cuzco. One type of property mentioned in the documents is a small province – called *aylluscas* by some authors – dedicated to the service of a particular Inca or the Sun (a supernatural being whose favor was responsible for Inca success) (Albornoz 1989, 175). Such was Andahuaylas: it was annexed under Pachacuti at the time of his campaign to Vilcashuaman but not developed as an *ayllusca* province until the time of Huayna Capac. According to Betanzos (1987, pt. 1, ch. 41: 182–3), he assigned it to Pachacuti's service because he had conquered it. Both Tupa Inca and Huayna Capac created *ayllusca* provinces in the wake of their own conquests, so this posterior act of donation may indicate that this type of property was developed late in Pachacuti's rule or after it.

The name Andahuaylas referred to both a province and a *tambo* (Table 7.2). The Inca road entered the province after crossing the Apurimac River and left it on crossing the Abancay River at the *tambo* of Curamba. A document awarding the province in *encomienda* (a grant by the Spanish crown of the tribute of a particular group) in 1540 lists the names of more than sixty communities located in its territory (Julien 2002). The whole was divided in two halves called Hanan- and Hurinchanca, including various *mitima* communities resettled there from other Chinchaysuyu provinces. Some of these *mitima* communities were from Chinchaysuyu provinces more distant than Vilcashuaman, and they must have been resettled after Pachacuti's campaign. It has yet to be established whether the special status of Andahuaylas was marked by these communities or in some other way; but even without visual signs, the rededication of the province in commemoration of Pachacuti's conquest affected the perception of its territory.

Other forms of repurposing lands similarly altered perception. In the same breath that Betanzos tells us about Huayna Capac's development of an estate in Yucay, he says that this Inca also assigned fields in the same valley to important members of the Inca dynastic line, "living and dead," who settled their own retainers here to work them. Huayna Capac further established "many small communities of 20, 30 and 50 households, where he placed many *mitima* Indians from all

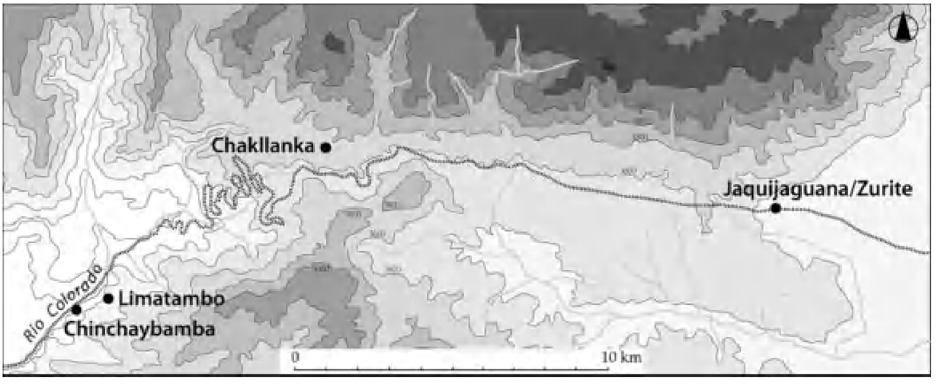


Figure 7.4 The Chinchaysuyu road from Limatambo to Jaquijaguana (modern Zurite).

the nations and provinces of the land" (Betanzos 1987, pt. 1, ch. 43, 187). These small communities were quite distinct from his own Yucay estate, even though their link to him may have been important in defining their status.[4]

Similar *mitima* communities and Inca properties can be traced on the landscape adjoining the Chinchaysuyu road in the province of Cuzco. Individuals interviewed at *tambos* between Vilcashuaman and Cuzco, and at Cuzco and Yucay, as part of an inquiry by Don Francisco de Toledo in 1570–1, provided biographical information about their service to the Incas (Levillier 1940). These biographies were often multi-generational and identified the service of fathers or grandfathers to different generations of Incas. Some were *mitimas*, some were natives of the communities in the area between Limatambo and Cuzco, and some were Incas. The biographies often mention province of origin, the Inca who resettled them, their *encomienda* affiliation, and their current residence; even so, the collection of information is insufficient for mapping out these different kinds of settlements on the ground. Still, the landscapes created through redefining settlement can be localized in the Limatambo Valley, in the area of Chinchaypuquio, and on the pampa of Anta (Figures 7.3 and 7.4).

Of all the *mitimas* interviewed, most identify either Tupa Inca or Huayna Capac as having brought them to the region near Cuzco. Only one claimed his family had been relocated by Pachacuti. This man, Don Alonso Condor, was from Soras. His father had been a *curaca* (that is, assigned to a position in the Inca provincial administration) in Pomaguanpa in the Yucay Valley. The son had served Huayna Capac as a page. Before dying, his father had asked Huayna Capac to look out for the boy, and the Inca had given him his father's post. Another brother had been given a similar political position in Quito (Levillier 1940, 108). The information that these individuals provide about which Inca "brought them" to the region suggests a sporadic pattern of resettlement beginning with Pachacuti and expanding considerably under his son and grandson.

Those interviewed had served the Incas in a variety of capacities. The men who originated in the province of Cuzco most frequently served in military roles or occupied political positions, while those who had been resettled from distant regions had more specialized assignments, such as ones related to weaving or herding. A *mitima* from the province of Huancavelica, Don Martín Haypo, claimed that his grandparents had been resettled to the Cuzco province "as a sign of [Inca] victory" (Levillier 1940, 151). Many *mitimas* appear to have been resettled as an expression of the favor of a particular Inca or Inca spouse. For example, Don Francisco Chachin, a man from the province of Huaylas (where his father had first been given an important administrative post), had been brought by the wife of Huayna Capac to settle in Chinchaypuquio with fifty other *mitimas* from Huaylas at the time when Huayna Capac's mummy returned to Cuzco from Quito (Levillier 1940, 112–13). Those native to the region also told stories about their service. For example, the father of one man from Chinchaypuquio had gone on campaign with Tupa Inca in Ecuador to serve as a guard in newly annexed territory. Having evidently earned the Inca's trust, he was assigned to guard the young Huayna Capac in Quito. His son, Tomas Pilpe (who was interviewed), had been brought back to the Chinchaypuquio area by the general Quizquiz at the time of the Inca civil war (Levillier 1940, 113).

Almost all of those interviewed in the district of Chinchaysuyu had origins in Chinchaysuyu provinces. The *mitimas* resettled to Chinchaypuquio claimed origins in the provinces of Aymaraes, Huaylas, Huánuco, Chachapoyas, and Collaguas. The people from Anta described origins in Jauja, Huánuco, and Chachapoyas. Most of these areas were annexed during Pachacuti's lifetime, mainly under the direct leadership of his son Tupa Inca or other Inca captains, not by Pachacuti himself. If the biographies of those interviewed in the Toledo inquiry indicate something about when these policies were effected, then evidently both Tupa Inca and Huayna Capac had a larger hand in orchestrating settlement in the Chinchaysuyu district than Pachacuti did. Resettlement was an ongoing process.

The Chinchaysuyu district was part of the province of Cuzco. People from within this territory were commonly recruited to participate in Inca campaigns at a distance and to serve as *mitimas* in newly annexed territory.[5] The biographies we have reveal that the communities of *mitimas* introduced into the region helped to counter-balance some of the outflow of inhabitants, though we also see that some of those who originated in the province returned. The net effect of these policies was to create communities of people with particular ties to the empire whose residence in the province was a reward for their service.

The landscape along the Chinchaysuyu road in the region between Limatambo and Cuzco was an imperial one. As in the case of Andahuaylas, redefinition altered perception, but (as will emerge) visible signs also marked the landscape. Before we turn to what could be seen, however, another fundamental though less visible kind of change needs to be mentioned. The Incas knew that peoples were irrevocably tied to the landscapes they inhabited through the worship of origin-places and other sacred features defined on the land. When the Incas orchestrated resettlement, they took care to identify the *huacas* held sacred by local people and to inform themselves about local cult practices. The more important local *huacas* were endowed with retainers, lands, herds, and goods. The most important were *huacas pacarisca*, the *huaca* associated with group origins (Albornoz 1989, 169). When the Incas moved communities from one region to another, as in the case of *mitimas*, they took care to create surrogates for their *huacas pacariscas* in the province where the *mitimas* were resettled. If the *huaca* in their home province had been a spring, for example, the *mitimas* could bring water from it with them and introduce this into a spring near their new town, thereby creating a surrogate. Many *huacas* were stones or had stone surrogates; to create a surrogate for this type of *huaca*, the official in charge of the cult in the home province would give the *mitimas* some clothing belonging to this *huaca*, and, by dressing a stone in the vicinity of their new town, create a surrogate (Albornoz 1989, 163–4, 169–71). The definition of a sacred landscape was a dynamic process, just as it was in the Cuzco Valley.

A list of the local *huacas* in the Chinchaysuyu district of Cuzco was recorded by Cristóbal de Albornoz, a priest who searched out the *huacas* of various highland provinces in order to destroy them in the late 1560s. He lists the names of the principal *huacas* in the "valley of Jaquijaguana," including both the Limatambo Valley and the pampa of Anta (1989, 179–80), using this name to refer to the Chinchaysuyu district of the province of Cuzco. Some of the *huacas* are associated with particular towns (Anta, Mayo, Equeco, Zanco, Huarocondo, and Conchacalla), indicating the local origins of the people in these communities. Other *huacas* commemorated the principal *huacas* of Cuzco and may have been associated with Incas in the dynastic line who were settled in towns on the pampa of Anta. At the end of the list, the practice of dressing stones with clothing brought from elsewhere is mentioned, clearly a reference to the *mitima* communities resettled in this area.[6] If we can use the biographies of people interviewed by Toledo along the Chinchaysuyu road in this region in 1570–1571 as a means of identifying the provinces of origin of some of these *huacas*, then we may suggest that they were surrogates for *huacas pacariscas* in Jauja, Huaylas, Huánuco, Chachapoyas, and elsewhere in Chinchaysuyu.

Outward Signs

The transformation of the landscape along the Chinchaysuyu road as it neared Cuzco also involved outward and visible signs. The social engineering just described was matched by a program of civil engineering that simultaneously reclaimed land for cultivation and imposed an Inca aesthetic on the land. Along the trajectory of the road, the design of these projects took the course of the road into account, extending its straight contours to the planning of terrace walls and fields. Some projects were almost certainly linked to the introduction of *mitima* communities and the re-accommodation of existing communities in Limatambo and Anta, because of the need to reassign rights to water and land. It is at present impossible for us to establish links to particular communities, in part because of the reduction of native settlements to fewer Spanish-style towns carried out by Viceroy Toledo between 1571 and 1575 (Table 7.3; Figure 7.5). The transformation took place over the course of just three generations, so we can treat the changes as part of an ongoing process of change during the time of the Inca empire.

Table 7.3 Resettlement of Inca communities to Spanish-style towns on the pampa of Anta.

Spanish towns	*Inca villages*
Anta	Cazca
	Cuzco
	Anta
	Equeco
	Tanboqui
	Conchacalla
	Mayo, Circa, Tumibamba
	Sanco
Zurite	Zurite [Xaquixaguana]
	Cuzco Marqués
	Mayo, Circa, Tumibamba
	Sanco
Huarocondo	Chiguan Quilliscache
	Huarocondo
	Lacrama
	Lauanqui
	Mayo, Circa, Tumibamba
	Sanco
No information about reduction	Huscollo or Pimapata
	Marco
	Chiuchis

Perhaps the one chronological fact we have is that the development of the road preceded the other changes. The Chinchaysuyu road from Vilcashuaman to Cuzco traversed a region of rugged terrain, over mountain passes and across the deepest river gorges in the Andes, until it reached the Limatambo Valley just west of the location of the *tambo* with that name (Figure 7.3). From that point, it took a relatively level course to the city of Cuzco, interrupted only by the steep ascent up to the pass at Vilcaconga about 8 km from the *tambo* of Limatambo as the crow flies. The road followed the Colorado River through the Limatambo Valley, leaving the confines of the hills as it entered the pampa of Anta near the *tambo* of Jaquijaguana (Heffernan 1996, 70–9). Both the hill country and the pampa were landscapes transformed by the Incas.

Archaeological survey of the Limatambo Valley has revealed the extent to which the landscape was transformed by terracing and canalization projects.[7] Beginning at Chinchaybamba (1 km southwest of Limatambo) and continuing to Chakllanka (12 km to the northeast), broad, stepped terraces were constructed wherever possible close to the river as a means of leveling the land. Toward the valley edges, narrower terraces were built. Though contour terracing would have been less labor-intensive to build in most instances, the Incas preferred straight terraces, building at right angles where a natural promontory was skirted, sometimes in a fret pattern (Figures 7.6, 7.7, and 7.8). Most terraces were faced with cut fieldstone, but some

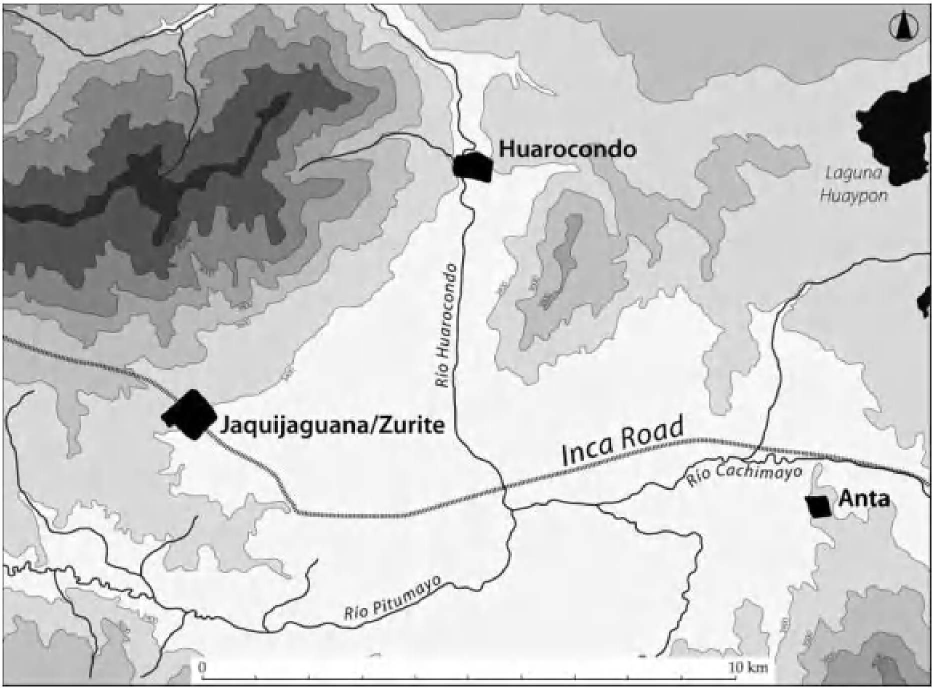


Figure 7.5 Pampa of Anta.

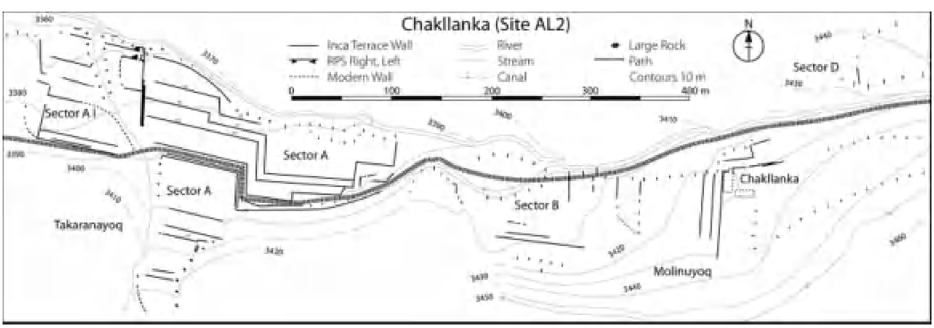


Figure 7.6 Chakllanka terraces near the site of Chakllanka.
Source: After Heffernan 1996.

were built of finely fitted Inca masonry, laid in regular or polygonal courses, as at Limatambo and other urban Inca sites. Some of the lower terraces that ran parallel to the course of the river were exceptionally long, as much as 560 m. The canalization of the river was coincident with the terracing, and should be considered part of the same effort to manicure the valley along the course of the road.

After emerging from the hills, the road arrived at the *tambo* of Jaquijaguana (modern Zurite) at the western edge of the pampa of Anta (Figure 7.5). The pampa was no less manicured than the adjacent valley. The Inca orchestration of settlement here was probably linked to a land reclamation project, as it

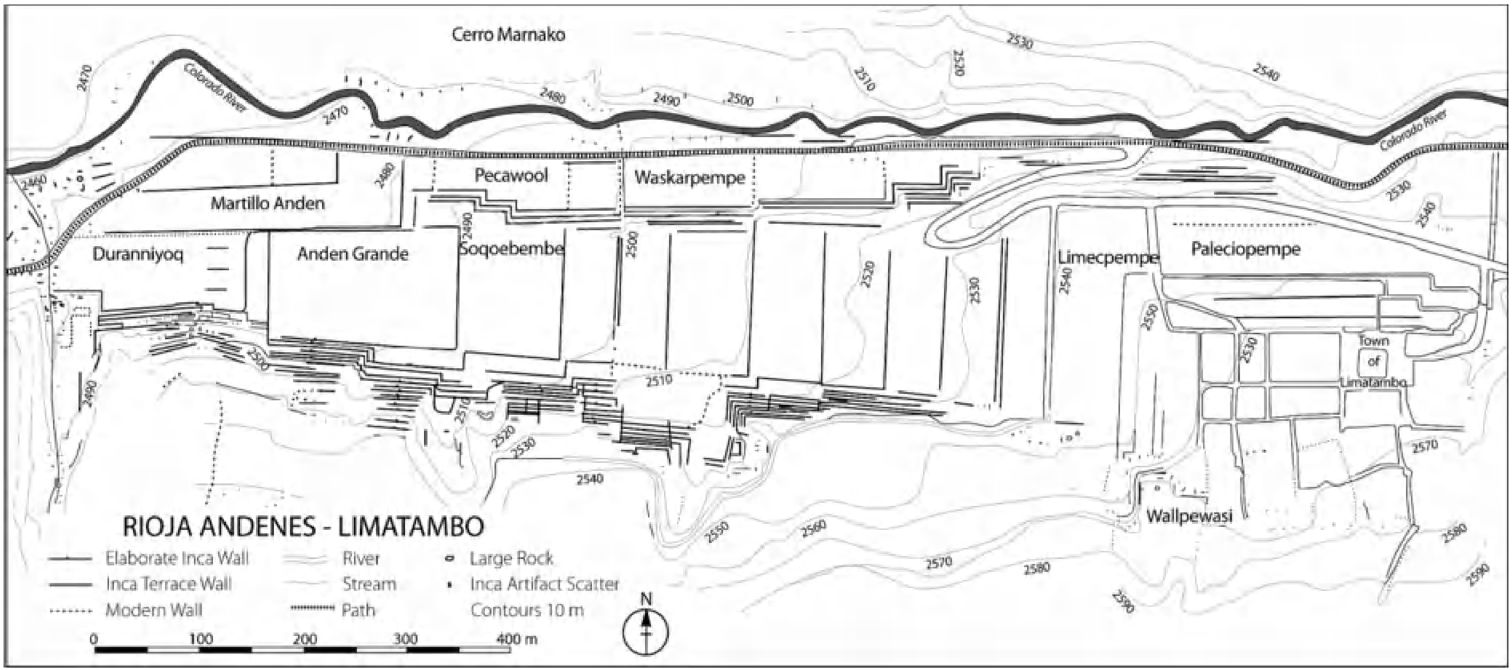


Figure 7.7 Terraces near the site of Limatambo/La Rioja.
Source: After Heffernan 1996.

Figure 7.8 Aerial view of Chakllanka.

was in Yucay. According to a description of the pampa by the *corregidor* (royal magistrate) of Abancay in 1586, the Inca road became a causeway along much of its course across it. The lagoon was fed by a river that flowed into the pampa near Anta.[8] The lagoon may have been seasonal; modern aerial photographs show that the river in question is joined by another from the south before turning north where the waters feed into one large canal, joined shortly by another. Orderly field systems composed of narrow rectangular fields abut the canals (Figure 7.9). The canals and fields are evidence of a reclamation project designed to drain the pampa and create arable land. Just as Huayna Capac created arable land so that new communities could be established in the Yucay Valley, land reclamation may have facilitated the introduction of *mitima* communities on the pampa of Anta.

Figure 7.9 Field Patterns on the pampa of Anta.

Other signs of agricultural intensification are evident. An elaborate system of shallow terraces and fields was developed by the Incas, extending along the foot of the hills to the northeast of the pampa where the Spanish town of Zurite was founded (Figure 7.10). As at Limatambo, these terraces – some of considerable length – were straight. In this respect they reflected the straightness of the rectangular fields, as also of the canals and of a road that branched from the Chinchaysuyu road and led to the Yucay Valley (Figure 7.11).

The Definition of Empire

Those who traveled along the Chinchaysuyu road could not fail to marvel at the reshaping of the land as they approached Cuzco. The straightened contours created by stone-faced terraces, canalized rivers, and narrow rectangular fields were plainly visible from eye level. Other changes, like the introduction of communities from distant provinces, were visible but required an awareness of their special nature. Still others, like the redefinition of sacred sites, may not have been visible from the road at all. Even so, the invisible changes are important: they reflect the power of an empire to define status, alter settlement, and affirm the links between people and the landscapes they inhabit.

The landscape viewed from the Chinchaysuyu road may have been exemplary, and whether similar attention was paid to the landscapes traversed by other *suyu*

Figure 7.10 Jaquijaguana (modern Zurite).

roads near Cuzco remains an open question. The image outlined here has been built up from archaeological traces of the Chinchaysuyu road and accompanying terracing, canalization, and field development, all dependent on the vagaries of preservation. Several types of documentary sources also made a contribution (such as the Toledan interviews, the *huaca* lists of Albornoz, and the 1586 report of the *corregidor* of Abancay); these sources exist only for the Chinchaysuyu district. Inca campaigning in Chinchaysuyu was more intense than in any other region, and the degree of alteration of the landscape here may be a direct reflection of that fact. Because of the differential importance of the *suyu* roads, noted above, the next road in order of importance was Collasuyu. The most likely sign that similar attention was paid to the landscape along it is the monumental gate of Rumicolca, located at the point where the road entered the province of Cuzco.[9] A concerted

Figure 7.11 Terraces and fields near Jaquijaguana.

effort to document terracing, canalization and other modifications may reveal a comparable effort to groom the route of the Collasuyu road, even if these features are more poorly preserved there than in the case of Chinchaysuyu.

What we can learn from such landscapes helps to refine our understanding of Tawantinsuyu. In a very real sense, the modifications we have noted are all part of an inscription of Tawantinsuyu on the land. Beyond the practicalities of rewarding faithful servants, intensifying agricultural production, and moving people along a road, this inscription had a symbolic dimension, signifying the relationship between center and whole. Interpreting its meaning is a risky business, since symbols have the power to encode meaning beyond the power of words to express. What we know is that the idea of Tawantinsuyu appears to have been present from the beginning of the Inca expansion. It was given initial expression at the time of annexation through the building of roads; roads marked its extent and also served to structure an incipient form of administration. The material expression ultimately went well beyond the road to engineering the landscape in accordance with an Inca aesthetic that prescribed the reshaping of natural contours along multiple parallel lines, sometimes mimicking those contours but more often straightening them to create linear and geometric forms rare in nature.

Inca engineering also had a social dimension. The settlement of the Chinchaysuyu district mirrored the ties between distant regions and the imperial heartland. Service to the empire became an important condition for residence. Historic communities were able to preserve ties to their homeland, but service increasingly earned them the right to inhabit it. New communities were introduced and, again, service earned them a place in an increasingly elite place of residence. The memories of the people who inhabited communities in the Chinchaysuyu district and were interviewed in 1570–1 are eloquent testimony to the statuses earned by those who lived there and to the prestige they gained thereby.

Tawantinsuyu, simply defined as four parts around a center, reflected a more complex understanding of the power of the center to impose on the whole an order and an aesthetic of its own design. The symbols of Tawantinsuyu could be as simple as a geometric depiction encoded in a rectangular design format, called *tokapu*, and as complex as the Inca inscription on the land traversed by the Chinchaysuyu road as it neared Cuzco.

Notes

1 All the people appear to have been assigned, although the record of which groups were assigned to care for which *huacas* is incomplete.

2 When the Spaniards attempted to revive the Inca road network a mere ten years after their arrival, the Andesuyu and Condesuyu roads were not on their list of *caminos reales*: see Vaca de Castro 1908 [1543]. The principal highland Inca highway has been given the name Qapac Ñan in recent years and is being considered for nomination to UNESCO's World Heritage List.

3 Espinosa Reyes 2002, 166, 169, 172. The site of Tamburco appears to be the *tambo* of Abancay.

4 They can therefore be distinguished from the *waranqas* he introduced from Chinchaysuyu and Collasuyu to serve on his estate.

5 A number of those interviewed in 1570–1 who were from the Chinchaysuyu district had served in the capacity of captain or soldier. One of them, Don Vicha Pilco from Yacos, described himself as a *guaynacona*, the "son of a soldier who had followed a *capac*" (*hijo de soldado que seguia a capac*) (Levillier 1940, 109). The Incas claimed to be *capac*, that is, a lineage with the support of a powerful solar supernatural who guaranteed their success in warfare (Julien 2000, ch. 2); the term may have recognized a legacy derived from military service.

6 Albornoz 1989, 179. Immediately following is a statement that peoples in the adjacent Yucay valley also worshipped these *huacas*, which were presumably from the *mitima* communities mentioned by Betanzos.

7 The area surveyed does not include the stretch of road between the headwaters of the Colorado River and Zurite.

8 Fornée 1965 [1586], 19. Albornoz (1989, 180) mentions two lagoons in his list of *huacas*, that of Huaypón near Chincheros, and that of Pongo; the latter may be the lagoon on the pampa of Anta. See Cieza for an earlier reference to the lagoon and the Inca causeway (1984 [1553], ch. 91, 256). He thought that the causeway would last for many years, but by the eighteenth century it was in such disrepair from use by cattle that travelers had to detour by way of Huarocondo during the rainy season (Carrio de la Vandera 1959 [ca. 1775], 383).

9 Ephraim George Squier traveled this road to Cuzco in 1859 and described the gate, calling it the gate of the fortress of Pikillacta (1973 [1877], 419–21). Rumicolca is an Inca construction, and Pikillacta a much earlier residential site.

References

Albornoz, C. de. 1989 [1581–5]. "Instrucción para descubrir todas las guacas del Peru y sus camayos y haziendas." In H. Urbano and P. Duviols, eds., *Fábulas y mitos de los incas* (Historia 16), 163–98. Madrid.

Bauer, B. S. 2006. "Suspension Bridges of the Inca Empire." In W. H. Isbell and H. Silverman, eds., *Andean Archaeology*, vol. 3, 468–93. New York: Springer.

Betanzos, J. de. 1987 [1551–7]. *Suma y narración de los Incas*, ed. M. Carmen Martín Rubio. Madrid: Ediciones Atlas.

Carrio de la Vandera, A. [Concolorcorvo]. 1959 [ca. 1775]. "Lazarillo de los ciegos caminantes." In J. Pérez de Tudela, ed., *Relaciones histórico-literarias de la América meridional* (Biblioteca de Autores Españoles 122), 243–402. Madrid: Ediciones Atlas.

Cieza de León, P. de. 1984 [1553]. *Crónica del Perú. Primera parte*, ed. G. Y. Pease. Lima: Pontificia Universidad Católica del Perú.

Cieza de León, P. de. 1986 [ca. 1554]. *Crónica del Perú. Segunda parte*. Edited by F. Cantù. Lima: Pontificia Universidad Católica del Perú.

Espinosa Reyes, R. 2002. *La gran ruta Inca: El Capaq Ñan* (*The Great Inca Route: The Capac Ñan*). Lima: Petróleos el Perú.

Fornée, N. de. 1965 [1586]. "Descripción de la tierra del corregimiento de Abancay." In M. Jiménez de la Espada, ed., *Relaciones geográficas de Indias*, vol. 2, 16–30. (Biblioteca de Autores Españoles 183–5). Madrid: Ediciones Atlas.

Heffernan, K. 1996. *Limatambo: Archaeology, History and the Regional Societies of Inca Cuzco* (BAR International Series 644). Oxford: Tempus Reparatum.

Julien, C. 2000. *Reading Inca History*. Iowa City: University of Iowa Press.

Julien, C. 2002. "Diego Maldonado y los Chancas." *Revista Andina* 34: 183–97.

Julien, C. 2006. "An Inca Information Network." *Ñawpa Pacha* 28: 41–61.

Julien, C. 2007. "War and Peace in the Inca Heartland." In K. A. Raaflaub, ed., *War and Peace in the Ancient World*, 329–47. Malden: Blackwell.

Julien, C. 2008. "Relación de los adoratorios y huacas del Cuzco; Relación de los *ceques*." In J. Pillsbury, ed., *Guide to Documentary Sources for Andean Studies, 1530–1900*, vol. 3, 578–80. Norman: University of Oklahoma Press.

Julien, C. 2009. "The Embryonic Inca Empire, with Particular Reference to Chinchaysuyu." In J. Dehlinger and H. Dehlinger, eds., *Architecture–Design Methods–Inca Structures: Festschrift for Jean-Pierre Protzen*, 104–13. Kassel: Kassel University Press.

Levillier, R. 1940. *Don Francisco de Toledo, supremo organizador del Perú,* II: *sus informaciones sobre los Incas (1570–1572)*. Buenos Aires: Espasa-Calpe, S. A.

Niles, S. A. 1999. *The Shape of Inca History*. Iowa City: University of Iowa Press.

Pachacuti Yamqui Salcamaygua, J. de Santa Cruz. 1993 [early seventeenth century]. P. Duviols, ed., *Relación de antigüedades deste reyno del Piru*. Cuzco: Centro de Estudios Regionales Andinos "Bartolomé de las Casas."

Protzen, J.-P. and J. H. Rowe. 1994. "Hawkaypata: The Terrace of Leisure." In Z. Çelik et al., eds., *Streets: Critical Perspectives on Public Space*, 235–46. Berkeley: University of California Press.

Rowe, J. H. 1979. "An Account of the Shrines of Inca Cuzco." *Ñawpa Pacha* 17: 1–80.
Sarmiento de Gamboa, P. 1906 [1572]. *Geschichte des Inkareichs von Pedro Sarmiento de Gamboa*, ed. R. Pietschmann (Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen, Philologisch-Historische Klasse, n.s. 6, no. 4). Berlin: Weidmannsche Buchhandlung.
Squier, E. G. 1973 [1877]. *Peru: Incidents of Travel in the Land of the Incas.* New York: AMS Press, repr. of the 1877 edn.
Vaca de Castro, C. 1908 [1543]. "Ordenanzas de tambos, distancias de unos a otros, modo de cargar los indios y obligaciones de las justicias respectivas hechas en la ciudad del Cuzco en 31 de mayo de 1543." *Revista Histórica* 3: 426–92.

8

The Sahara as Highway for Trade and Knowledge

Pekka Masonen

The Sahara has never been an obstacle that isolated black Africa from the rest of the world, as western historians used to imagine in the past.[1] Oceans, mountains, and deserts may hinder communication, but the real obstacle to crossing them has been a lack of motivation. The early fifteenth-century Portuguese seafarers, for instance, knew where they were heading when they began to search their way to the south. They knew that the North African Moors were exporting valuable merchandise beyond the great desert and that prosperous cities and powerful realms existed there which could be useful allies for the Christians in their fight against the Muslims. What the Portuguese did not know was the shape of the African continent, its distances and directions.

The Sahara is the largest desert on Earth, and it attained to its present dimensions already during the Post-Neolithic arid phase between 2500 and 1000 BCE. Increasing aridity drove from the central Sahara most of its human and animal occupants, whose previous existence is documented in rock paintings and engravings, many found in places that now lack any life. The Nile River flows through the Sahara in the east, but it did not function as a corridor connecting Sudanic Africa to the Mediterranean and the Middle East until very recently.[2] It was only after the collapse of the Christian kingdoms of Nubia in the early sixteenth century that Muslim pilgrims of Sudanic Africa began to use the Nile Valley as their route to Cairo and further to the Arabian peninsula, but it was never as popular as the trans-Saharan routes (Insoll 2003, 269).

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

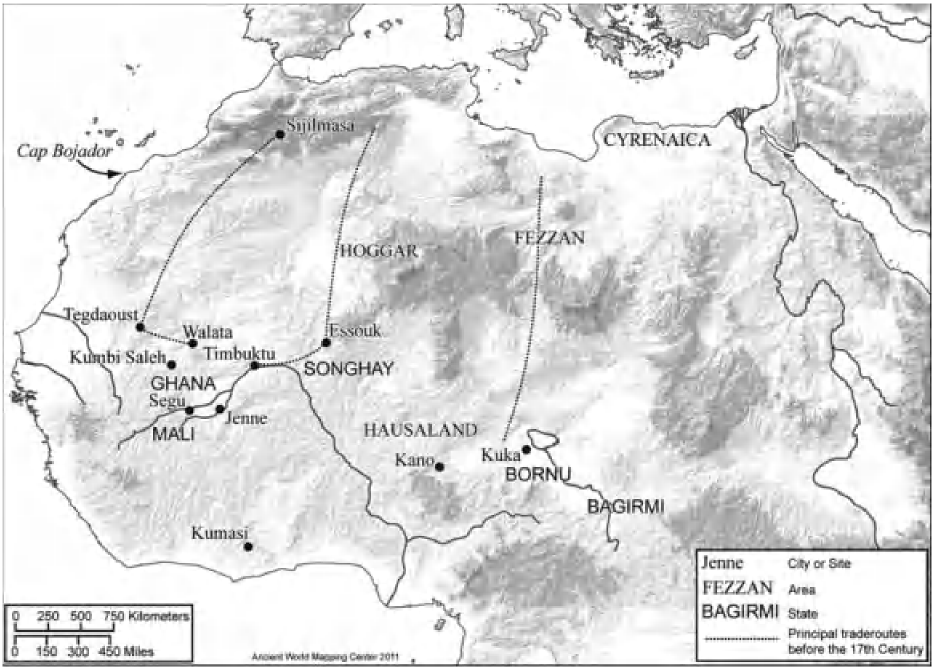


Figure 8.1 Trans-Saharan routes.
Source: Map sketched by Pekka Masonen and drawn by the Ancient World Mapping Center.

The romantic metaphor of the Sahara as an ocean, its oases as islands, its camels as ships reiterates the perceptions of Arabic geographers, whose denomination "Sahel," commonly used for both edges of the desert, means literally "the shore." Those who crossed the Sahara in pre-modern times faced difficulties similar to those faced by early seafarers: vast distances that afforded no possibility of replenishing provisions or finding the right direction in the void. The journey took at least two months each way (see Figure 8.1).

The worst nightmare was going astray, an error that inflicted a painful and unavoidable death. The Moroccan adventurer Ibn Battuta, who crossed the western Sahara from Sijilmasa to Walata in 1352 on his way to Mali, tells of one of his traveling companions becoming lost in the desert and perishing. Another caravan had lost several men, one of whom was later found dead, lying "under a little tree of the kind that grows in the sand. There was water a mile or so away from him." An entire caravan might perish in the wilderness, if the guide was seduced by the demons of the desert and became diverted from his purpose. The guides, Berber nomads of the Sahara, were well paid for their services: the one hired to lead the caravan that Ibn Battuta accompanied received one hundred *mithqals* of gold (Levtzion and Hopkins 2000, 282–3).[3] The caravans also had to pay levies to the nomads for safe passage through their lands.

If the means were available and the necessary skills had been learned, crossing the Sahara remained tedious, uncomfortable, and dangerous – but it was not impossible.

The Ancient Background and Colonial Ideology

Little is known of trans-Saharan contacts before the Arab conquest of North Africa. In the past, it was widely believed that regular trade across the desert began already in ancient times, perhaps as early as 1000 BCE, and continued uninterruptedly until the coming of the Arabs in the seventh century. This trade was carried on by the Garamantes, a Berber people from Fezzan, in modern Libya, who took both slaves and gold from Sudanic Africa to the markets of Roman North Africa (Law 1967). The theory of an ancient trans-Saharan trade was formulated long before any archaeological excavations had been undertaken in sub-Saharan Africa. The key source is Herodotus, according to whom the Garamantes were hunting "Ethiopian troglodytes" from their chariots (*Histories* 4.183). The theory gained additional support when rock paintings and engravings depicting horse-drawn chariots were found in the central Sahara in the early 1930s. These pictures appear to form three routes across the desert towards the Niger bend and Lake Chad region. Interestingly, these routes seem to correspond to the caravan routes that were established in the Islamic period (Insoll 2003, 210).

Scepticism about the historicity of ancient trans-Saharan trade began in the 1970s (Swanson 1975), and the idea has nowadays been abandoned by most historians and archaeologists of Africa, although the "chariot routes" are still introduced in some popular works as historical facts. Several important arguments undermine the theory:

First, no material evidence has been discovered. While Roman objects exist in some central Saharan sites, for instance in the fifth-century tomb of the legendary Tuareg queen Tin Hinan at Abalessa, in the Hoggar Mountains, none have been found in the archaeological sites in Sudanic Africa (Insoll 2003, 212).

Second, there is no indisputable written evidence. No ancient authority actually states that trans-Saharan trade from the Mediterranean world via the Garamantes existed (Insoll 2003, 268). On the contrary, it seems that the Romans had no interest in the Sahara, other than a military one. If regular trade was carried on across the desert, it would have attracted the attention of ancient authors. An appeal to the "conspiracy of silence" on the part of the Garamantes is no counterargument.

Third, the rock paintings and engravings of chariots are difficult to date. Certainly they were not made over a short period in order to function as traffic signs for those who wanted to cross the desert.

Fourth, all the paintings and engravings depict light, two-wheeled vehicles that are not fit for transporting bulky merchandise such as ivory, salt, or slaves – let alone the provisions needed for crossing the desert. Experimental tests carried out by modern scholars have proved that chariots are not even suitable for traveling in the rocky environment of the central Sahara, where most of the pictures are found (Camps 1982). Furthermore, horses do not survive in the desert and were never used in the caravan trade in the Islamic period.

Finally, there was no need to organize any trade across the desert. The Roman world received all the products that Sudanic Africa could offer – gold, ivory, spices, wild beasts, and slaves – more easily from within its own limits. The fact that there was plenty of gold in North Africa at the time of the Arab conquest does not prove that it originated from Sudanic Africa. There were abundant gold mines in Spain, Sicily, and Nubia.

The theory of the ancient trans-Saharan trade was actually a manifestation of two powerful ideologies that have dominated colonial historiography. One is the idea of diffusionism, according to which all important innovations, such as agriculture, metallurgy, writing, monumental architecture, and state-formation always spread through cultural contacts. No people could civilize itself by itself; rather, cultural progress was invariably initiated by representatives of a more advanced people, who introduced new innovations to the less advanced people. According to late nineteenth-century western historians, the cradle of human civilization lay in the Middle East, whence cultural innovations spread all over the world. Analogies were regarded as sufficient proof of contact (Holl 1990). If the mud-houses of Jenne resembled Egyptian mastaba tombs (in the eyes of a European observer), the architectural idea must have been introduced by settlers arriving from Pharaonic Egypt (Masonen 2000, 463).[4]

Another influential ideology is a belief in the historical passivity of black peoples and their incapability of any cultural progress. Colonial historians could not, however, deny that there had once been great cities and realms in sub-Saharan Africa, as described in medieval Arabic sources. There were also visible monuments of ancient African cultures. If blacks were unable to build these monuments and to establish states, whose creations were they? The logical answer was: representatives of more advanced (white) peoples from the Mediterranean (Sanders 1969). The earliest states of Sudanic Africa, for instance, were established by Jews who escaped Roman revenge after their unsuccessful revolt in Cyrenaica in 117 (Masonen 2000, 506). The credibility of these fantastic explanations required the existence of ancient trans-Saharan contacts – otherwise the colonial model of African history would have collapsed.

We know now that cultural progress in Sudanic Africa began independently. The earliest signs of urban development in the Niger inland delta date from the third century BCE, and there is no indication of any outside involvement or alien presence (McIntosh and McIntosh 1993). The development of cities and states in Sudanic Africa did not result from the ancient trans-Saharan trade – though there were certainly some contacts across the desert – but from the increasing regional trade that was organized already in prehistoric times (Connah 1987, 119). The beginning of the trans-Saharan trade in the Islamic period was possible because North African Arabs were able to join an existing regional trade network.

The Islamic Period

The Arabs had conquered the North African littoral by the beginning of the eighth century and had extended their raids even to the Sahara. According to Arabic sources, trans-Saharan trade began soon after the conquest was over, which is perhaps the strongest indication of prior contacts in Roman times: had the Arabs not known that there was something beyond the desert, they would hardly have organized the trade. As Graham Connah concluded, "What ship would ever visit a port unless there was a chance of a cargo to collect?" (1987, 120).

The situation in Islamic North Africa was very different from that in Roman times. Although the political unity of the Abbasid caliphate soon broke, the Islamic world formed a vast economic area, the monetary system of which was based on gold. There are no gold mines in North Africa. The Arab rulers of Egypt exploited the Nubian mines. The Spanish mines were exhausted already before the Arab conquest of the Iberian peninsula, and the mines of Sicily were inaccessible until the Arab invasion of the island began in 827. There was thus a demand for gold in North Africa. The nearest available sources were the gold mines of West Africa. In that situation, it was sensible to risk crossing the desert in order to obtain gold.

Another important change introduced by the Arabs was the camel, or more specifically the dromedary. Camels were known to the Egyptians already in Pharaonic times and to the inhabitants of North Africa in Roman times, but they were not used widely. It seems that the nomads of the Sahara adopted the camel only after the Arab conquest (Insoll 2003, 212). Unlike horses, camels are perfectly adapted to an arid environment. They can survive for days without water. Camels are also stronger than horses. A camel can carry a load weighing up to 150 kg, which means that the caravans could carry both provisions for the journey and the merchandise. The carrying capacity of camels was not wasted on riding: humans crossed the desert by foot.

There was, however, an obstacle to trade. The gold mines of West Africa lay outside the Islamic world. The black inhabitants of Sudanic Africa were *kuffar* or "infidels" (in the eyes of the Muslims). Thus the Arab traders who crossed the desert risked not only their lives but their faith, too. The Muslim rulers of North Africa had no means of forcing the blacks to follow the practices of Islamic law. On the contrary, arrogant and violent behaviour on the part of the Arabs would have put an end to trade. In order to safeguard the constant flow of gold from the south, Arab traders had to adopt a conciliatory attitude towards the blacks, which meant that the Muslims had to be ready to compromise in regard to local practices – even if they contradicted Islamic law. According to some Islamic jurists, that was unacceptable: Muslims should not travel to the lands of infidels, where they could not follow Islamic law (Brett 1983). Another problem was the question of the purity of the merchandise. According to some Islamic jurists, for instance, ivory was unclean, since the elephants were not killed according to Islamic practice (Levtzion and Hopkins 2000, 55). Although these opinions represented minority views, they were not irrelevant. The legitimacy of the trans-Saharan trade required that Islamic religious jurists settle permanently in the southern *termini* of the caravan routes. It was these jurists, rather than itinerant traders, who introduced the elements of Islam and Arabic culture to Sudanic Africa (Levtzion 1987).

External Views

Trans-Saharan trade in the Islamic period is often examined through "North African-tinted spectacles," as Timothy Insoll put it (2003, 231). That is, although new viewpoints have been introduced recently, historians have tended to focus on the economic and political aspects of the trade and on the spread of Islam and Islamic culture in Sudanic Africa (Lydon 2008) and to approach these topics through Arabic sources, most of which were written in Islamic Spain, North Africa, and the Middle East. Considerably less attention has been paid to the role of black Africans in the trade.

The reliance on external Arabic sources contains dangerous pitfalls (Insoll 1994). First, the Arabic sources offer an exaggerated picture of the trans-Saharan trade, with numerous caravans going to and fro, all loaded with huge amounts of gold.[5] Second, the Arabic sources emphasize the passivity of black Africans in the trade. The Arabic writers were not sympathetic observers of the life of non-Muslim societies, especially when these societies were vastly different from their own (Hunwick 1991). As Ibn Hawqal, the most important source for the caravan trade in the western Sahara during the tenth century, concluded:

> We have not mentioned the land of the Sudan in the west … because the orderly government of kingdoms is based upon religious beliefs, good manners, law and order, and the organization of settled life directed by sound policy. These people lack all these qualities and have no share in them. (Levtzion and Hopkins 2000, 44)

Archaeology provides a more humble, and certainly more realistic, picture of the trade. For example, few traces of the flourishing cities described in the Arabic sources have been found. While some places have been identified with relative certainty, such as Awdaghust with modern Tegdaoust and Tadmakka with modern Essouk, many have simply vanished or are still waiting to be discovered. One is the famous capital of Ghana, whose ruler was described by Ibn Hawqal as "the wealthiest king on the face of earth because of his treasures and stocks of gold" (Levtzion and Hopkins 2000, 49).[6]

Material evidence for the trans-Saharan trade before the tenth century is scarce (Insoll 2003, 214; cf. Nixon 2009). While it is certain that the trade was organized earlier, its heyday began with the establishment of the Shiite Fatimid caliphate in North Africa in 910. The Fatimids, who rejected the authority of the Sunnite Abbasid caliphs of Baghdad, aimed first to conquer Egypt and then to proceed to the Middle East. In order to fulfil this plan, the Fatimid rulers needed gold to finance their wars and religious propaganda. Since the only available source was in West Africa, the Fatimids first conquered the northern *termini* of the caravan routes, before turning to the east. Once the Fatimids had secured their grip on Egypt, they lost interest in the Sahara, and the caravan trade began to decline.

The second peak for the trade was during the Almoravid period in the eleventh and twelfth centuries. The Almoravids were originally Berber nomads of the western Sahara. By the year 1100, they had conquered most of North Africa and Islamic Spain. Like the Fatimids, the Almoravids too needed both West African gold and mercenaries to wage their constant wars against Christians in Spain and Muslim rivals in North Africa. From the hands of the Almoravids, gold flew further to north. The first gold coins issued in western Europe after antiquity were made of West African gold. Until the Spanish conquests of Mexico and Peru, West Africa was the main source of gold for western Europe. Again, a brief decline followed after the fall of the Almoravids in 1147 (Messier 1974).

The third peak began in the fourteenth century and lasted until the seventeenth century. This period was marked by the existence of the largest empires in Sudanic Africa, which are conventionally called by modern historians Mali, Songhay, and Bornu. The decline of the caravan trade began with the Moroccan invasion of Timbuktu in 1591, which destroyed the unity of the Songhay empire (Kaba 1981). The process was further deepened by the political and economic decline of North Africa and by increasing European trade on the Atlantic coast. Yet the trans-Saharan trade survived until the colonial period. It was steamboats, railroads, and colonial boundaries that finally put an end to the age of caravans at the dawn of the twentieth century.

Black Africans were not passive bystanders. They soon understood the benefits of the caravan trade.[7] Individuals could enrich themselves by acting as brokers and by providing various services for the foreigners, who were unfamiliar with the local environment, languages, and practices. North African traders never gained direct contact with the producers of gold, but were isolated within the southern limits of the caravan routes by the local rulers and middlemen who controlled the regional trade. They were also unwilling to venture into the savanna, which was as unhealthy to them (and lethal to camels) as the West African Atlantic coast was to Europeans. According to Hugh Clapperton, who visited northern Nigeria in 1824, the Arab merchants in Kano were "more like ghosts than men, as almost all strangers were at this time, suffering from intermittent fever" (1985 [1826], 239).

The policy of the Sudanic empires was to expand horizontally along the desert edge and to control as many *termini* of the caravan routes as possible, in order to maximize tax income from the trade. As al-Bakri wrote about Ghana in the late eleventh century,

> On every donkey-load of salt, when it is brought into the country, their king levies one golden dinar and two dinars when it is sent out. From a load of copper the king's due is five *mithqals*, and from a load of other goods ten *mithqals*. (Levtzion and Hopkins 2000, 81)

Tax revenue from the trade enabled the rulers of the Sudanic empires to maintain large armies equipped with cavalry, with the help of which they were able to enlarge their dominions further. Similarly, a decline in tax revenue meant that the rulers were unable to defend their dominions. The empires of Sudanic Africa grew fast and dissolved with equal speed.

Africans and the Wider World

A neglected aspect in the trans-Saharan trade is the way in which it connected the peoples of Sudanic Africa to the wider world. While the caravan trade was in the hands of North African Arabs, thousands of black Africans visited the Mediterranean and more were in touch with the traders. We may assume that the meetings were not silent. The traders had to spend several months in the southern *termini,* and they were expected to heed the representatives of local rulers. The inhabitants of Sudanic Africa were not indifferent to strangers who arrived in their lands. As G.Mollien wrote, when he was traveling in Senegambia in 1818:

> [W]herever he goes, the traveler is asked his name, that of his family and the place of his birth; this is the customary salutation. By refusing to answer he would excite suspicion, and might even compromise his liberty. (1967 [1820], 71)

European travel accounts testify to African curiosity. Clapperton recorded that in Kano, "the court-yard of my house was crowded with people, from sunrise to sunset, all of whom I had to see with the greatest patience, and to answer their numberless questions" (1985 [1826], 298).

Whereas the spread of Islam and Islamic culture can be traced with the help of archaeological evidence (Insoll 2003, 15–23), it is difficult – though not impossible – to learn now what the Africans' knowledge of the wider world was before the colonial period. There are no primary sources. The peoples of Sudanic Africa were illiterate, though not unintelligent. Even those who were familiar with writing did not record any mental maps of the world known to them.[8] Moreover, Africans who visited the Mediterranean and the Middle East never put down in writing their experiences and thoughts, nor did the Arabs who visited Europe.[9] Yet some information on Africans' knowledge of the wider world can be gleaned from the journals written by European visitors to Sudanic Africa. These journals, of course, represent the authors' views and were meant to entertain European readers. Occasionally, however, we may hear genuine African voices behind the European writing.

The largest group of Africans who crossed the Sahara involuntarily was slaves. The trans-Saharan slave trade began in the eighth century; black slaves in the ancient Mediterranean were from Nubia. The annual volume of the trans-Saharan slave trade was meagre compared to the Atlantic slave trade – less than 10,000 – but it is estimated that altogether some seven and a half million Africans were taken to North Africa by the advent of the twentieth century, when the slave trade was suppressed by colonial powers.[10] This estimate does not include those who died in the Sahara. The average mortality was 20 percent (Moseley 1992, 534).

The trans-Saharan slave trade, however, has gained much less attention from historians of Africa and those concerned with black diaspora studies than the Atlantic slave trade, for two reasons (Hunwick 2002, ix). The first is practical. Research in the trans-Saharan slave trade requires knowledge of Arabic and Turkish, which are not popular languages in western universities, whereas the sources for the Atlantic slave trade are conveniently written in European languages. Moreover, the bulk of the evidence is not available in well-organized archives but is scattered in various places. The researcher must therefore be prepared to spend much time in North African countries, in circumstances that may not be as comfortable as those of the campuses of European and North American universities. The second is ideological. Research in the trans-Saharan slave trade is not encouraged in North African countries. In general, Arab historians are unwilling to deal with issues of slavery and the slave trade, since they hold the opinion that slavery in the Islamic world was more humane and less criminal than slavery in the European colonies of the West Indies and continental America (Howard-Hassmann 2004, 81–4). Nor is the topic popular in the modern countries of Sudanic Africa, most of which are now Islamic. Historically, governments in these countries have also been Islamic and closely involved in the slave trade through capturing their infidel neighbours and selling them to the North African Arabs.

It is true that the concept of slavery was different in the Islamic world, for which slavery was an essential part of a society that was regulated by Islamic law. There never was any anti-slavery movement in the Islamic world. Islamic law provided slaves with certain rights and protection from wanton cruelty. Yet one should not pay undue attention to the legal niceties. As the Sudanese historian Yusuf Fadl Hassan remarked, “slavery is slavery and it cannot be beautified by cosmetics” (Hunwick 2002, x). One important difference was that the manumission of slaves was more common in the Islamic world than it was in the European colonies. Manumission was regarded as a pious act, and often the master freed at least some (if not all) of his slaves in his will. For many former slaves, the change in legal status was not necessarily more than a formality (Fisher 2001, 70–6). Some manumitted slaves, however, decided to return to their original homes and managed to do so (Fisher 2001, 83–7). Some had spent decades in slavery in North Africa and the Middle East. In 1851, the German explorer H. Barth was approached in Kano by a Hausa man who had been in slavery in Constantinople for some twenty years. He had not only learned modern Greek perfectly “but also adopted the manners, and I might almost say the features, of the modern Greeks” (1965 [1857–8], vol. 1, 530).

Pilgrims were another large group of Africans who crossed the desert voluntarily. Pilgrimage to Mecca is an obligation to Muslims, although not all of them perform it. The earliest references to West African pilgrims are from the twelfth century (Levtzion and Hopkins 2000, 98). The number of African pilgrims grew steadily, as Islam gained more footing in Sudanic Africa. Pilgrims visited not only the holy cities of Mecca and Medina but also, in many cases, Baghdad, Jerusalem, Damascus, and Constantinople (Al-Naqar 1972, 124). The journey took easily four or five years. There was always a possibility that the pilgrim might never return. The risks included natural hazards, illness, brigands, and slave hunters. The pilgrimage itself did not require substantial resources: endurance was enough. Pilgrims took their faith seriously and represented all levels of society. Some even performed the pilgrimage twice. An interesting subgroup among the pilgrims was made up of those who went to Mecca as proxies for the rich and nobles who were unwilling to face the hardships of the journey by themselves (Hamilton 1809, 25).

The most noteworthy pilgrimages were those of African rulers, whose magnificent visits to Cairo were remembered long afterwards and were occasionally noticed even in southern Europe. Cairo was an important commercial centre and was frequently visited by Italian traders. The most famous was the pilgrimage of Mansa Musa, the ruler of Mali, who arrived in Cairo in 1324. His picture, with the caption "Rex Melli," appeared on a European portolan map already in 1339 (Masonen 2000, 104 n. 211). On the other hand, the equally grandiose pilgrimage of Askiya Muhammad b. Abi Bakr of Songhay in 1497 left no traces in contemporary European records (Al-Naqar 1972, 18–20). During their journeys, African pilgrims were able to meet other Muslims from all over the Islamic world. Their conversations must have dealt not only with religious issues but also with mundane matters. This explains why Muhammad Bello, ruler of the Sokoto caliphate, was able to discuss current British policy in India with Clapperton and to express his concern regarding the position of Muslims in the areas ruled by the British (Clapperton 1985 [1826], 314).

The third group of regular travelers consists of diplomats dispatched to North Africa by the rulers of Sudanic Africa. We know that the rulers of Mali and the Marinid sultans of Morocco exchanged diplomatic delegations during the fourteenth century (Levtzion and Hopkins 2000, 340–1). Certainly the rulers of Sudanic Africa knew that they were not alone in the world. The Portuguese chronicler João de Barros mentions an otherwise unidentified West African ruler named Mahamed ben Manzugul – clearly, to judge from his name, a Muslim – who greeted the Portuguese king João III in his letter by saying that he had never heard of more powerful kings than those of Alimaen, Baldac, Cairo, and Tucurol; in other words, the rulers of Bornu, Baghdad, Egypt, and Mali, respectively.[11]

Finally, there were also individuals who had various reasons to cross the desert, from simple curiosity to commercial transactions. In Kano, Clapperton met a master builder whose "father having been in Egypt, had there acquired a smattering of Moorish architecture, and had with him at his death all his papers, from which he derived his only architectural knowledge" (1985 [1826], 323). W. Hutchinson, who in 1817 participated in the British mission to Kumasi, the capital of Ashanti, met a trader from Jenne who had been to Alexandria at the time of the Battle of the Nile (August 1, 1798) and could provide a reliable account of events in Egypt up to the surrender of the French forces in August 1801 (Bowdich 1819, 407). An English lady described in a letter in 1789 how she had met in Tripoli a "Prince of Bornu" who was "extremely well informed and much acquainted with the state of Europe" (Dearden 1957 [1816], 224–6). Intriguingly, one of the prince's three wives spoke Italian.

The caravans also brought news from the outside world. The German traveler Gustav Nachtigal learned in Kuka, the capital of Bornu, in January 1871 that France and Germany were at war (Nachtigal 1980 [1881], 305). The Franco-Prussian war began in July 1870, but Nachtigal had been unaware of the conflict, since he had left Tunis in the summer of 1869.[12] News of the Napoleonic invasion of Egypt spread quickly to Sudanic Africa and aroused suspicion towards European travelers (Horneman 1985 [1802], xxii). When Mungo Park arrived in Segu, the capital of the Bambara state on the Niger, in July 1796, he was told fresh news of the naval battles between the British and the French in the western Mediterranean (Edwards 1967 [1810], 381).[13] Before he met Clapperton, Muhammad Bello was aware of the bombardment of Algiers by the British fleet on August 27, 1816, as well as of the ongoing war in Greece (Clapperton 1985 [1826], 313).

Information about the wider world was gained also from books, which were an important commodity in the trans-Saharan trade. Large libraries have survived in Timbuktu (Hunwick 2003, lxi), and the nineteenth-century European travelers to Sudanic Africa noticed that the local rulers and scholars possessed books. Muhammad Bello, for instance, was well acquainted with the history of Islamic Spain (Clapperton 1985 [1826], 331). Sometimes the titles surprised European visitors, as happened with T. Edward Bowdich in Kumasi in 1817:

> Baba had a great number of Arabic manuscripts; … Apokoo astonished us by offering to lend us some books to read: he shewed us two French volumes on Geography, a Dutch Bible, a volume of the Spectator, and a "Dissuasion from Popery, 1620." (1819, 144)

Apokoo was not able to read his books, but he was very interested in learning about England.[14]

In addition to books, the caravans also carried letters. Although diplomatic delegations were no longer exchanged after the seventeenth century, letters between the rulers of Sudanic Africa and North Africa nonetheless continued to be exchanged. It is telling that the European travelers were able both to send letters home and to receive replies while they were in Sudanic Africa. Clapperton, for example, received in Kano, along with British newspapers, letters sent to him from Tripoli by the British consul (1985 [1826], 245). The fact that he received the mail proves how secure the communication across the desert and within Sudanic Africa was. The British consul had no idea of Clapperton's whereabouts and so sent the mail via caravan first to Clapperton's traveling companion, Dixon Denham, who was in Bornu (the goal of Denham's and Clapperton's journey; the latter's excursion to Hausaland was not part of the original plan). Denham forwarded Clapperton's mail to him via local traders who were heading for Hausaland, who were apparently able to trace Clapperton with no difficulty. Letters from Sudanic Africa reached their destination quickly, considering the distances and circumstances.

A letter sent by William D. Cooley from London on January 22, 1852, reached Barth in Bagirmi in mid-July, that is, within six months. A reply sent by Barth to Cooley from Bornu on October 12 arrived in London on February 21, 1853, in slightly more than four months.[15]

In sum, the peoples of Sudanic Africa were neither isolated nor ignorant of the wider world outside their familiar environment.[16] It is certainly true that most Africans knew nothing of the wider world and very little of their own – but the same can be said also of most Europeans and Americans during the nineteenth century. On the other hand, there were Africans who were interested in expanding their knowledge of the world – and who understood the value of this knowledge – such as the governor of Bede-guma in Hausaland, who asked Clapperton "a great many questions about England, of which he had heard" (Clapperton 1985 [1826], 201).[17] In nearby Katagum, Clapperton explained the use of compass, spy-glass, watch, and other instruments to a local scholar, "who had made the pilgrimage of Mecca, and was acquainted with Arabic learning" and who was "a man of sense and discernment" (1985 [1826], 223). In Kano, Clapperton was approached by a young man who was very anxious "to hear all about my country" (1985, 249). Barth passed in Wurno what he described as a "delightful evening" in the company of an "amiable and communicative" Fulani scholar named Abd el Kadir dan Taffa, who, "when a young man, harrassed Clapperton and the Jew Yakob so much in Kano by his inquiries after their religion."[18]

The importance of the Africans' knowledge of the wider world was summarized by H. J. Fisher:

> Nachtigal included freed slaves who knew Tunis, Tripoli, or Constantinople among the many visitors who imposed upon his time in Kuka. What are we to make of such references as those given, rather randomly, above and of the returned slaves who stand behind them? Are they a dispersed group, on the margins of African society, detailed knowledge of whom is largely irrecoverable at this distance in time? Or were they significant mediators in the cultural encounter between black Africa and the wider world, helping to familiarise local peoples with some of the attitudes and practices of the outsiders who, with the rise of European colonialism, were beginning to intrude more and more.[19] A possible research topic, now, though not for long, for some energetic young Africanist?[20] (2001, 94)

When estimating the historical importance of the cultural contacts along the Nile Valley in antiquity, Graham Connah concluded that

> Corridors usually lead to a few rooms, but the Nubian corridor, in which so much happened, does not seem to have led anywhere … For the Nubians, their valley was perhaps a corridor of exciting cultural interaction but for Africa, as a whole … it was a cul-de-sac. (1987, 65–6)

From this point of view, the trans-Saharan caravan routes were true corridors which led the outside world to the African interior and Africans to the outside world.

Notes

1 The Atlantic was a more serious barrier than the Sahara. The prevailing winds beyond Cape Bojador in southern Morocco always blow from the north. Given the sailing technology of antiquity and the Middle Ages, it was possible to sail south, along the African Atlantic coast, but impossible to return. This problem was not solved until the adoption of the lateen sail by Portuguese seafarers in the 1440s. Furthermore, most of the Atlantic coast of Africa from Senegal to the Bight of Biafra is fringed by impassable mangrove swamps. Except where otherwise indicated, all dates are CE.

2 The denomination "Sudanic Africa" refers to the belt between the Sahara and the forest zone in the south, reaching from the Atlantic to the Red Sea, through the African continent. It should not be confused with the present Republic of Sudan (formerly known as the Anglo-Egyptian Sudan, in distinction to the French Sudan, which is now the Republic of Mali in West Africa). The name "Sudan" originates from Arab geographers who called sub-Saharan Africa *Bilad al-Sudan*, literally "Land of the Blacks."

3 A *mithqal* was a standard Arabic measure for weight (ca. 4.72 gm) that was used principally for gold. A *mithqal* of gold was worth one dinar. A camel-load of Saharan rock salt was usually four slabs, each weighing about twenty kilograms, and sold in Walata for eight to ten *mithqals.*

4 A belief in Egyptian influence in West Africa predates the colonial period. G. Mollien, for example, hoped to find there "relics of Egyptian or Carthaginian colonies" (1967 [1820], 2).

5 According to modern estimates, the caravans brought to the north between 1,000 and 3,000 kg of gold annually. These estimates are based on the productivity of West African gold mines using traditional methods of mining (Devisse 1988, 388–9; Austen 1990, Table 10.3).

6 The capital of ancient Ghana is conventionally associated with the ruins of Kumbi Saleh in southern Mauritania, though no decisive proof of this identification has thus far been discovered (Insoll 2003, 228).

7 The peoples of Sudanic Africa started importing salt and copper from the Sahara already long before the coming of the Arabs. Salt and copper were bartered for agricultural products and manufactured goods (pottery, tools, cloth), since the inhabitants of the Sahara had little use for gold. The novelty introduced by the Arabs was the exchange of Saharan salt and North African luxury goods for West African gold.

8 Africans were able to draw maps of their own lands for European visitors, even if the accuracy of their maps did not always correspond with the observations of Europeans. In Sudanic Africa, local ideas of geography were heavily influenced by Arabic learning. When Clapperton inquired about the course of the Niger (which was still unknown to European geographers), Muhammad Bello explained (correctly) that the river flows to the south, where it enters the sea (1985 [1826], 314). According to the map drawn (incorrectly) for Clapperton by the "learned men" of Kano, the Niger flowed to the east, where it was supposed to join the Nile – this was the idea of medieval Arabic geographers.

9 The principal reason was religious prejudice. Mohamed El Mansour describes the nineteenth-century Moroccan attitude towards Europeans: "Writing about the infidels and their manners was not something the author could be proud of, nor was it likely to arouse interest among a reading public whose outlook on the world was moulded within the tradition of Islamic learning" (1989, 48). There was also the danger that a

writer who appeared to be too interested in the infidels would be declared to be an apostate by the Islamic religious leaders – an accusation that had grave consequences.

10 No great black communities comparable to those in Atlantic slave societies were born in North Africa. There were three reasons for this. First, slaves were mainly used in North Africa for domestic tasks, unlike on the plantations in the New World, and therefore no massive concentrations of black populations developed. Second, the majority of the slaves were women whose fertility was low, whereas male slaves were mostly eunuchs or soldiers whose ability to father children was limited. Third, the offspring of black concubines by their Arab masters were free and blended into the local society (Hunwick 1992, 25–7).

11 The contents of this letter are known only through a Portuguese translation included in the first volume of *Asia* by João de Barros, published in Lisbon in 1552 (Masonen 2000, 157–62).

12 Nachtigal received more news in November 1871, when he was in Kanem. There he met a trader who delivered to him a letter written in Kuka by Nachtigal's friend Sherif Ahmed el-Medeni explaining with "laconic brevity" that the Germans had won (Nachtigal 1980 [1881], 498).

13 This detail is not included in Park's journal, *Travels in the Interior Districts of Africa*, London 1799.

14 According to Bowdich, Baba was the "chief Moor in Kumasi," whereas Apokoo was the "keeper of the treasure."

15 The nine letters of Barth to Cooley from Sudanic Africa are preserved in the British Library (MS Add 32117: Miscellaneous letters, etc. 1594–1854).

16 The situation was definitely not as McLynn maintains: "Whatever their achievements, Africans knew nothing of the wider world and little of their own" (1992, ix).

17 Muhammad Bello was impressed by the British newspapers introduced to him by Clapperton: "Having heard of our newspapers, he desired me to send for them, calling them the '*Huber el dineah*,' or 'News of the world.' Being set to read extracts from them, I happened to mention that thousands of them were printed daily, when he exclaimed, 'God is great: You are a wonderful people' " (1985 [1826], 313).

18 The "delightful evening" took place on April 29 and is described in Barth's letter to Cooley of May 6, 1853 (see above, n. 15). It is not mentioned in his published journal (1965 [1857–8], vol. 3, 136–9). For Clapperton's meeting with Abd el Kadir, see Clapperton 1985 [1826], 249. The Gibraltar Jew Jacob Deloyice was Clapperton's servant.

19 This aspect is well evident in the meeting of Clapperton with an unnamed nephew of Muhammad Bello. The young man was very suspicious of Clapperton, and would not dare taste the cup of tea offered by Clapperton before one of Clapperton's African companions had taken a cup. Afterwards the young man confessed that "before his visit, he had considered a Christian little better than a monster" (1985 [1826], 248; see above, n. 9). Mollien was once entertained by a village chief who declared that he esteemed the white men highly, "because in a journey he had made to St. Louis [the French colony in Senegal], he had met with a kind reception from them" (1967 [1820], 118). A more telling example comes from R. Caillié, who traveled from Senegal to Timbuktu and across the Sahara to Morocco in 1824–1828. In Kankan (in the present Republic of Guinea), he met a local trader who had visited European trading posts on the Gambia several times. The man "excited the curiosity

of his countrymen, who assembled round him, by describing the wonders which he had seen on the coast … He described in glowing terms the way in which the Europeans dress and eat, which greatly astonished the simple Negroes, who imagined that there were no other dresses than theirs in the world, and that the custom of eating with the fingers was universal." Yet the man also "complained bitterly of the want of generosity shewn by the whites" (1992 [1830], vol. 1, 334). Caillié disguised himself as an Arab.

20 I may have been the "young Africanist" who inspired Dr. Fisher to write these lines. He was my supervisor when I was preparing my Ph.D. thesis at the School of Oriental and African Studies, London, in 1995–7. I touched the topic for the first time in my presentation in the Third Nordic Conference on Middle Eastern Studies held in Joensuu, Finland, in June 1995. An annotated and expanded version of my presentation appeared in the conference volume that resulted (Masonen 1997).

References

Al-Naqar, 'U. 1972. *The Pilgrimage Tradition in West Africa: An Historical Study with Special Reference to the Nineteenth Century.* Khartoum: Khartoum University Press.

Austen, R. A. 1990. "Marginalization, Stagnation and Growth: The Trans-Saharan Caravan Trade in the Era of European Expansion, 1500–1900." In J. D. Tracy, ed., *The Rise of Merchant Empires. Long-distance Trade in the Early Modern World, 1350–1750*, 311–50. Cambridge: Cambridge University Press.

Barth, H. 1965 [1857–8]. *Travels and Discoveries in North and Central Africa*, 3 vols., centenary edn. London: Frank Cass; 1st English edn., 5 vols., 1857–8.

Bowdich, T. E. 1819. *Mission from Cape Coast Castle to Ashantee, with a Statistical Account of that Kingdom, and Geographical Notices of Other Parts of the Interior of Africa*. London: John Murray.

Brett, M. 1983. "Islam and Trade in the *Bilād al-Sūdān*, 10th–11th Century A.D." *Journal of African History* 24: 431–40.

Caillié, R. 1992 [1830]. *Travels through Central Africa to Timbuctoo; and across the Great Desert, to Morocco, Performed in the Years 1824–1828*, 2 vols. London: Darf; 1st English edn. 1830.

Camps, G. 1982. "Le cheval et le char dans la préhistoire Nord-Africaine et Saharienne." In G. Camps, G. and M. Gast, eds., *Les chars préhistoriques du Sahara. Archéologie et techniques d'attelage. Actes du colloque de Sénanque 21–22 mars 1981*, 9–22. Aix-en-Provence: Université de Provence.

Clapperton, H. 1985 [1826]. "Journal of an Excursion from Kouka in Bornou, through Soudan, to Soccatoo, the Capital of Bello, Sultan of the Felatahs." In D. Denham, H. Clapperton, and W. Oudney, *Narrative of Travels and Discoveries in Northern and Central Africa in the Years 1822, 23 and 24*, vol. 2, 179–369. London: Darf.

Connah, G. 1987. *African Civilizations. Precolonial Cities and States in Tropical Africa: An Archaeological Perspective*. Cambridge: Cambridge University Press.

Dearden, S., ed., 1957 [1816]. *Letters Written During a Ten Years' Residence at the Court of Tripoli. Published from the Originals in the Possession of the Family of the Late Richard Tully. Esq. The British Consul. Comprising Authentic Memoirs and Anecdotes of the Reigning Bashaw, His Family and Other Persons of Distinction. Also an Account of the Domestic Manners of the Moors, Arabs, and Turks.* London: Arthur Barker.

Devisse, J. 1988. "Trade and Trade Routes in West Africa." In *UNESCO General History of Africa,* 3: *Africa from the Seventh to the Eleventh Century*, 367–435. London and Berkeley: Heinemann and University of California Press.

Edwards, B. 1967 [1810]. "An Abstract of Mr. Park's Account of His Travels and Discoveries, Abridged from His Own Minutes by Bryan Edwards, esq. 1798." In *Proceedings of the Association for Promoting the Discovery of the Interior Parts of Africa*, Facsimile Reprint with New Introduction, vol. 1, 327–400. London: Dawsons.

El Mansour, M. 1989. "Moroccan Perceptions of European Civilization in the Nineteenth Century." In G. Joffé, ed., *Morocco and Europe*, 37–45. London: School of Oriental and African Studies.

Fisher, H. J. 2001. *Slavery in the History of Muslim Black Africa*. London: Hurst.

Hamilton, W. 1809. *Remarks on Several Parts of Turkey. Part I. Ægyptiaca, or Some Account of the Antient and Modern State of Egypt, as Obtained in the Years 1801, 1802.* London: T. Payne and Cadell and Davies.

Holl, A. 1990. "West African Archaeology: Colonialism and Nationalism." In P. Robertshaw, ed., *A History of African Archaeology*, 296–308. London: James Currey.

Horneman, F. 1985 [1802]. *The Journal of Frederick Horneman's Travels from Cairo to Mourzouk, the Capital of the Kingdom of Fezzan, in Africa in the Years 1797–8.* London: Darf.

Howard-Hassmann, R. 2004. "Reparations to Africa and the Group of Eminent Persons." *Cahiers d'Études Africaines* 44: 81–97.

Hunwick, J. 1991. *West Africa and the Arab World. Historical and Contemporary Perspectives.* Accra: Ghana Academy of Arts and Sciences.

Hunwick, J. 1992. "Black Slaves in the Mediterranean World: Introduction to a Neglected Aspect of the African Diaspora." In E. Savage, ed., *The Human Commodity. Perspectives on the Trans-Saharan Slave Trade*, 5–38: London: Frank Cass.

Hunwick, J. 2002. "The Same but Different: Africans in Slavery in the Mediterranean Muslim World." In J. Hunwick and E. T. Powell, *The African Diaspora in the Mediterranean Lands of Islam*, ix–xxiv. Princeton: Markus Wiener.

Hunwick, J. 2003. *Timbuktu and the Songhay Empire. Al-Sa'dī's Ta'rīkh al-sūdān down to 1613 and Other Contemporary Documents*, 2nd edn. Leiden: Brill.

Insoll, T. 1994. "The External Creation of the Western Sahel's Past: Use and Abuse of the Arabic Sources." *Archaeological Review from Cambridge* 13: 39–49.

Insoll, T. 2003. *The Archaeology of Islam in Sub-Saharan Africa*. Cambridge: Cambridge University Press.

Kaba, L. 1981. "Archers, Musketeers, and Mosquitoes: The Moroccan Invasion of the Sudan and the Songhay Resistance (1591–1612)." *Journal of African History* 22: 457–75.

Law, R. 1967. "The Garamantes and Trans-Saharan Enterprise in Classical Times." *Journal of African History* 8: 181–200.

Levtzion, N. 1987. "Merchants vs. Scholars and Clerics in West Africa: Differential and Complementary Roles." In N. Levtzion and H. J. Fisher, eds., *Rural and Urban Islam in West Africa*, 21–37. Boulder: Lynne Rienner.

Levtzion, N. and J. F. P. Hopkins, eds. 2000. *Corpus of Early Arabic Sources for West African History*. Princeton: Marcus Wiener; 1st edn. 1981 by Cambridge University Press.

Lydon, G. 2008. "Contracting Caravans: Partnership and Profit in Nineteenth- and Early Twentieth-Century Trans-Saharan Trade." *Journal of Global History* 3: 89–113.

Masonen, P. 1997. "Trans-Saharan Trade and the West African Discovery of the Mediterranean." In M. Sabour and K. S. Vikør, eds., *Ethnic Encounter and Culture Change. Papers from the Third Nordic Conference on Middle Eastern Studies*, 116–42. Bergen: Nordic Society for Middle Eastern Studies.

Masonen, P. 2000. *The Negroland Revisited. Discovery and Invention of the Sudanese Middle Ages.* Helsinki: Finnish Academy of Science and Letters.

McIntosh, S. K. and R. J. McIntosh. 1993. "Cities without Citadels: Understanding Urban Origins along the Middle Niger." In T. Shaw, P. Sinclair, B. Andah, and A. Okpoko, eds., *The Archaeology of Africa: Food, Metals and Towns*, 622–41. London and New York: Routledge.

McLynn, F. 1992. *Hearts of Darkness. The European Exploration of Africa.* London: Hutchinson.

Messier, R. A. 1974. "The Almoravids. West African Gold and the Gold Currency of the Mediterranean Basin." *Journal of the Economic and Social History of the Orient* 17: 31–41.

Mollien, G. 1967 [1820]. *Travels in the Interior of Africa to the Sources of the Senegal and Gambia; Performed by Command of the French Government, in the Year 1818.* London: Frank Cass.

Moseley, K. P. 1992. "Caravel and Caravan. West Africa and the World-Economies, ca. 900–1900 AD." *Review: A Journal of the Fernand Braudel Center for the Study of Economies, Historical Systems and Civilizations* 15: 523–55.

Nachtigal, G. 1980. *Sahara and Sudan,* 2: *Kawar, Bornu, Kanem, Borku, Ennedi*, trans. A. G. B. Fisher and H. J. Fisher. London: Hurst; 1st German edn., 3 vols., 1879–89; English edn., 4 vols., 1971–87.

Nixon, S. 2009. "Excavating Essouk-Tadmakka (Mali): New Archaeological Investigations of Early Islamic Trans-Saharan Trade." *Azania: Archaeological Research in Africa* 44: 217–55.

Park, M. 1799. *Travels in the Interior Districts of Africa.* London: Africa Association.

Sanders, E. 1969. "The Hamitic Hypothesis: Its Origin and Functions in Time Perspective." *Journal of African History* 10: 521–32.

Swanson, J. 1975. "The Myth of Trans-Saharan Trade during the Roman Era." *International Journal of African Historical Studies* 8: 582–600.

From the Indus to the Mediterranean: The Administrative Organization and Logistics of the Great Roads of the Achaemenid Empire[1]

Pierre Briant

The Classical Sources

From the Indus Valley in the east and the Aegean coast in the west, from the Iaxartes/Syr Darya river in the north to Aswan in the south, the Persian Achaemenid empire, for more than two centuries, was the largest empire ever put together in antiquity. During a decade of conquest, Alexander had constituted it precisely to his advantage by appropriating the same boundaries (Elephantine, Syr Darya, and Indus). Already in antiquity, Greek observers highlighted what they regarded as one of the major problems of imperial government: the contrast between the immensity of imperial territories and the will of the Great Kings to establish and maintain their hold. The observation has also been made by modern historians and philosophers, such as Machiavelli and Montesquieu.[2] For the latter, empires too vast were uncontrollable because of their distances. In his view, the Persian empire could have resisted Alexander if Cyrus had not conquered Asia Minor, and the Seleucid empire would have had a longer life if Seleucus had chosen to establish the seat of power in Babylon instead of wishing to control tightly the western parts of his empire. Montesquieu knew only a single exception to this rule: the empire of Alexander, which (Montesquieu maintained) was made viable by the Macedonian king's ability to establish relationships of trust with the Persian elite (Briant 2005–6). Almost the same observation was made by Xenophon, speaking of the empire of Cyrus the Great, who managed to range beneath his domination "the peoples who

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

lived within days of walking, even months, as well as others who had never seen him, and others who knew very well that they would never see him, and yet were willing to submit to him" (*Cyropaedia* 1.1.4–5).

Accordingly, Greek authors often highlighted the difficulties of the Great Kings and their generals in gathering imperial armies, whose contingents had to be levied throughout all the lands of the empire. In fact, the levying of such armies was exceptional throughout Achaemenid history (Briant 1999, 116–20).[3] Furthermore, the same authors generally point out that the empire of the Great Kings had an extremely well organized network of roads, which facilitated communication (Briant 1991; 2002, 357–87, 927–30; Kuhrt 2007, 2,730–62). The well known passage in which Herodotus describes the layout and logistics of the royal road that allowed Susa to be reached from Sardis (5.52–4; Kuhrt 2007, 2.738–9) may leave open to discussion the exact route of its middle part (e.g., Debord 1995; Graf 1994, 175–80), but the existence of the road itself is not in doubt. At the same time, it is not appropriate to call it "the" royal road or to map an Achaemenid empire organized around it (as, surprisingly, Curtis and Tallis 2005, 11; cf. Briant 2002, 366 = Kuhrt 2007, 2.736, fig. 1). The passage of Herodotus needs to be precisely contextualized without being over-interpreted. Herodotus is not here surveying the networks of roads that he knew of throughout the empire; he is simply following the course of a narrative in which Aristagoras is trying to demonstrate to the Spartan Cleomenes the ease of travelling from western Asia Minor (Ephesus and Sardis) "up to the king." The passage certainly does not suggest that the road from Sardis to Susa represented "*the* royal road" *par excellence*. Similarly, if, with the same discursive logic, Herodotus says with reference to Susa that "the Great King has his residence and deposits his treasures there" (5.41), this certainly does not imply that Susa was *the* capital of the empire. It was just one of the royal residences that the king occupied for a few months each year during his periodic travels from one residence to another (Briant 2010, 31–2).

In order to reconstruct the network of Achaemenid roads, we must broaden our perspective and extend our documentation (Figure 9.1). Without discussing here the Neo-Assyrian precedents (e.g., Graf 1994, 181–4; Favaro 2007), we should emphasize that Greek documentation provides further useful information, including an inscription of the Hellenistic period mentioning "the old royal road (*basilikè hodos*) that the nearby peasants turned into cultivation" (Welles 1933, no. 20). In a passage from his *Persika* (F 33), Ctesias describes the road that "went from Ephesus to Bactria and India," and enumerates the relays (*stathmoi*), travel days, and *parasanges* (a Persian unit of distance equaling roughly 5 km). We know nothing more about it, but the fragment suggests that Ctesias's perspective extended across the entire empire from the Mediterranean to the Indus. His description confirms in part what Herodotus says of the distances, stages (*stathmoi*), and very fine resting stops (*kataluseis kallistai*) for travelers that punctuated the route between Sardis and Susa.

Apart from the Greco-Roman sources, the richest body of evidence is represented by stories of the expeditions and conquests carried out first by the

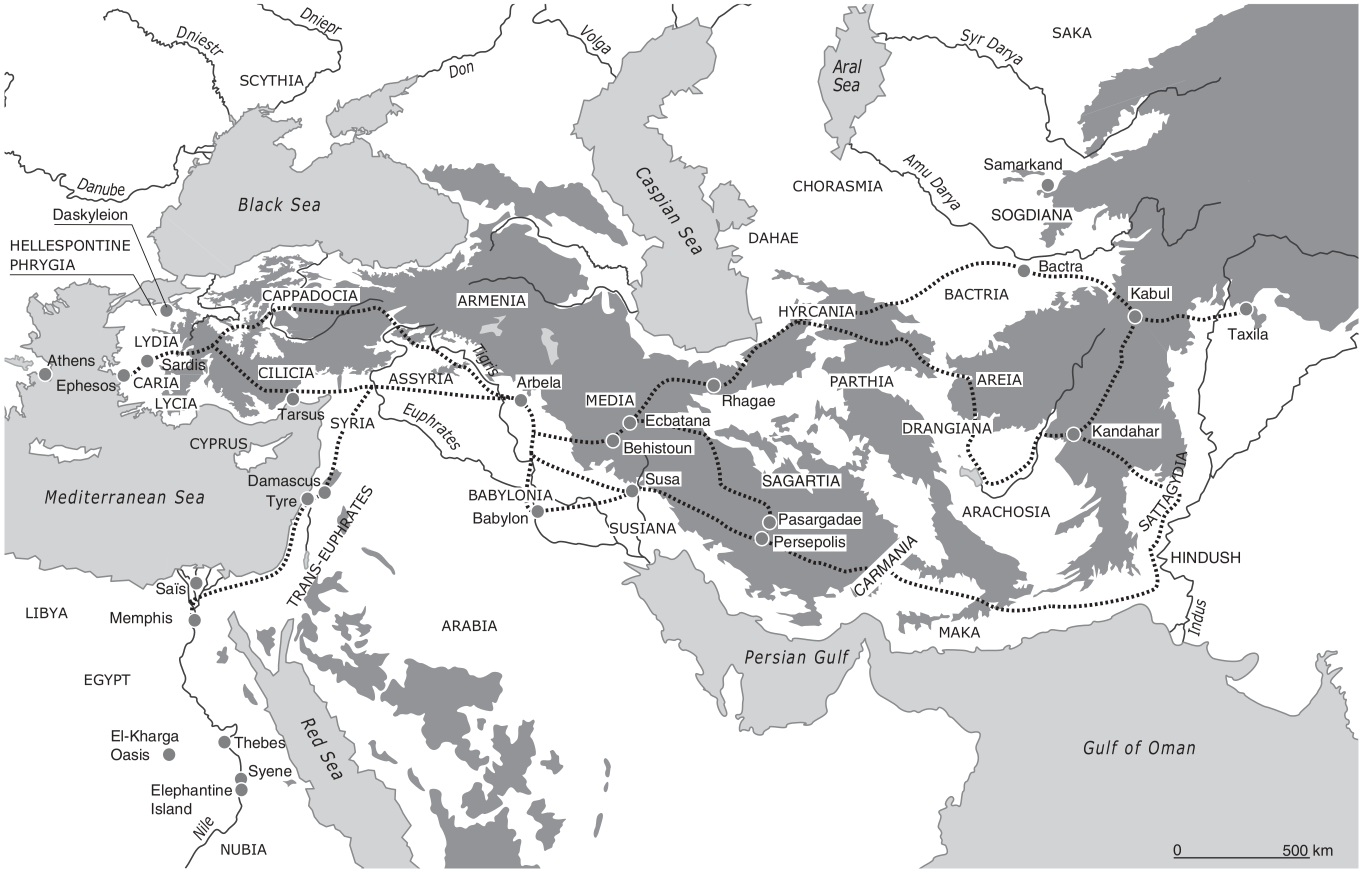


Figure 9.1 The great roads of the Achaemenid empire.
Source: Map by P. Briant.

army of Cyrus the Younger and his mercenaries (the *Anabasis* of Xenophon; see Manfredi 1986 and Briant 1995) and then by Alexander the Great. While Alexander opened roads in areas that had none (e.g., Arrian, *Anabasis* 1.26.1) or borrowed secondary routes to evade enemy positions (Briant 2002, 360–61, 726–33), he generally took advantage of existing routes and logistical arrangements to allow the movement of groups, troops, and even the royal court from one part to another of the imperial territories. The weight of his train forced him to use roads accessible to wagons (*hodoi hamaxitoi*; e.g. Arrian, *Anabasis* 3.18.1), as well as equipped with many supply stations (e.g. Arrian, *Anabasis* 3.16.2). None of this is surprising:

> It could be said that, for the enemies of the Great King to have any chance of success, they would have to take the Achaemenid theater of strategic operations or, in other words, to turn to their own advantage the logistics the Persian authority had established to ensure its survival. (Briant 2002, 373)

We have a fine example of this continuity in a financial scheme reported by the author of *Oeconomica*:

> Antimenes bade satraps to replenish (*anaplēroun*), in accordance with the law of the country (*kata ton nomon ton tes choras*), the magazines along the royal highways (*tous te thesaurous para tas hodous tas basilikas*). Whenever an army passed through the country or any other body of men unaccompanied by the king, he sent an officer to sell (*epolein*) them the contents of the magazines. ([Aristotle], *Oeconomica* 2.2.38, trans. G. C. Armstrong: Loeb)

The episode took place in Babylon during the last months of the reign of Alexander. Antimenes – known only through anecdotes transmitted by Pseudo-Aristotle (*Oeconomica* 2.2.34, 38) – held a high position in the financial administration of Alexander, and it is in this capacity that he is introduced by the author.[4] In this anecdote, as in another (where he shows himself to be equally keen to increase the royal treasury), Antimenes makes decisions which he communicates to satraps. Here, the satraps have an obligation to maintain the level of the food supplies in the warehouses (*thesauroi*) which the royal administration maintained along the royal roads. The reference to "the law of the country" (*ton nomon ton tes choras*) leaves no doubt about the maintenance of Achaemenid regulations, even if the term used for the transfer of goods from storage (*epolein*, "to sell") does not appear to correspond exactly to the mission of the satraps and governors: it was less to sell (in the strict sense) than to issue rations to official travelers.[5]

Of all the classical texts that might be cited, I would emphasize the value of a letter contained in the collection of the so-called *Letters of Themistocles*.[6] We know that the famous Athenian had to flee his city and, after many adventures, decided to win his way to the Grand Court of the King (Briant 2007). Of all the texts that narrate the journey to the center of the empire, the following passage of the *Letters* is especially informative:

> Some people brought the information to Artabazos and took me to Phrygia. For Artabazos was in Phrygia. When he learned among other things that I had decided to go to the King, he approved and sent me immediately. He gave me two horses and an equal number of servants (*oikètai*) and sent me along with thirteen other Persians who were in charge of the road (*hodos*) and the provisions (*epitèdeia*). They rode camels. On the way I passed through a few hills and a deep valley. I saw and traversed great flat plains. The edges of them were inhabited and worked well. The desert part nourished wild beasts and herds of other animals. I sailed down many rivers and visited all kinds of people. From my fellow travelers (*synodoi*) I learned the Persian language, and the journey was no longer unusually tiring or troublesome to me. The trip ended, and I was at the King's, the goal toward which I had started. (*Letters* 20.27, trans. Doenges 1981, 221–2)

According to the anonymous author, Themistocles had obtained official permission from the satrap of Hellespontine Phrygia, who provided him with an escort outfitted with horses and had evidently authorized access to supplies for both men and animals (horses and camels) throughout the journey.

The View from the Center

The "Travel Rations" texts of Persepolis

Since the sources leave no doubt about the need to obtain safe passage from the satraps in order to move freely on the roads and to have access to the relay stations and royal warehouses (Briant 1991, 71–4), naturally, it is imperial sources that offer the most reliable and detailed information. If the Aramaic *ostraka* of Palestine and the Aramaic letters of Bactria invite reflection on the availability of supply stations in these regions (Briant 2009, 148–55), these documents are revealing because they are closer to an infinitely more transparent body of evidence, namely the texts of the so-called Persepolis Fortification tablets, which Richard Hallock devoted himself to publishing.[7] Among the various categories distinguished in his publications of 1969 and 1978, Hallock rightly highlighted the unity of the category Q, which he called "travel rations," and which includes texts as yet unpublished.[8] Although limited in space (Persia) and time (between 509 and 494), we can see from this material, unsurprisingly, that official visits were organized to and from all lands of the empire.[9] For example, consider the journeys to and from Susa, twenty and thirty-eight occurrences respectively, not counting numerous direct trips between Susa and Persepolis (Briant 2010). One finds there almost all the eastern satrapies, above all Kerman (twenty-four times), Hindush (fourteen), Arachosia (ten), but also Aria (four), Gandhara (four), Drangiana (one), and Bactria (two). If we consider the entire corpus (e.g., Koch 1993, 5–46), several examples of travel between Persepolis and Media appear, as well as travel between the center and western regions or satrapies such as Sardis, Babylon, Syria, Egypt, and even Lebanon.[10]

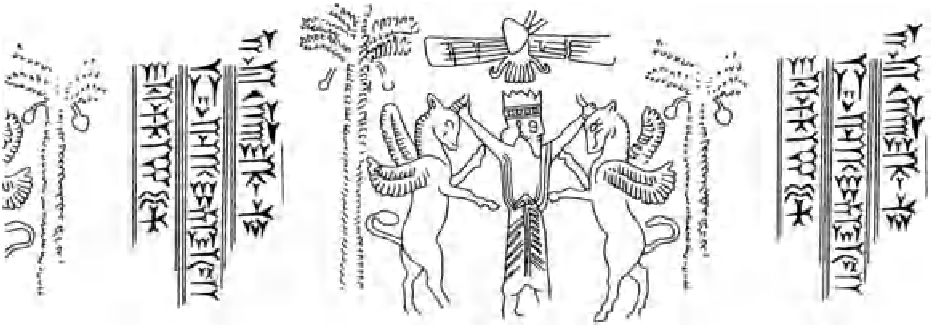


Figure 9.2 PFS*7: collated seal with a trilingual inscription on Persepolis fortification tablets. *Source*: Garrison and Root 2001: 68–70, cat. no. 4.

The identity of the travelers is very varied. The tablets of the J series (PF 691–740, 2033–5) gather documents relating to "royal provisions." To quote Hallock:

> The J texts deal with many different commodities, at many different places, forty-three "dispensed before the king" (*m. sunki tibba makka*) and twelve "before" certain members of the royal family: Irtašduna, wife of Darius (PF 730–2); Irtašduna and Arsames, a son of Darius (PF 733–4, 2035); and the woman Irdabama, whose relationship is unknown (PF 735–40).[11]

These texts are an implicit but clear reference to an Achaemenid courtly custom that particularly struck Greek observers: the "nomadism of the court" which, over the course of the year, moved from residence to residence (Briant 1988; 1994; 2002, 183–95). It is likely that the seasonal rhythm was not as strict as classical authors imply, but the reality of the institution is not in doubt (Tuplin 1998; Henkelman 2010, 713–53, offers detailed analysis of the provisions put at the kings' disposal on tour). As noted by Hallock (1969, 25), it is to the J series that the only Achaemenid-Elamite tablet found at Susa, published by Jean Vincent Scheil in 1911, belongs. It reads: "Sixty-four *marriš* [ca. 170 gallons] (of) first class clarified butter, supplied by Maštetinna, were consumed before the king, at Susa and five villages (*humanuš*), in the twenty-second year" (Henkelman 2010, n. 270–1). The king in question is Darius I, traveling around 500/499 in Susa or between Persepolis and Susa. The tablet is printed with a seal well known at Persepolis (PFS*7), which depicts a royal hero holding a composite animal by the horn with each hand (Figure 9.2). The seal bears a trilingual inscription in Old Persian, Elamite, and Babylonian: "I, Darius, Great."

The interest of PFS*7 lies not only in stylistic considerations but also in its administrative implications. Together with PFS 66* this seal is used only on the tablets of the J series, and it clearly belongs to a high officer of the administration, who may have accompanied the king in all his movements and who was charged with provisions "consumed before the King."[12]

The king, the court, and the high dignitaries are obviously not the only ones who used the highways and who drew from the warehouses of the administration.

Table 9.1 Movements from Susa to Persepolis and Tamukkan (500–499).

Tablet	*From*	*Towards*	*Status*	*Number*
PF 1475	[Susa]	Persepolis	*Kurtaš*	155
PF 1489	?	?	Men	22
			Elite guides	2
			Kurtaš	16
			Puhu [‘servants’]	2
PF 1547	Susa	Matezziš	Egyptian *kurtaš*	30
PF 1557	[Susa]	Tamukkan	Egyptian *kurtaš*	547
NN 327	Susa	Persepolis	*Kurtaš* artisans	23
NN 362	Susa	Persepolis	*Kurtaš*	78?
NN 364	[Susa]	Persepolis	Babylonian *kurtaš* ?	22
NN 435	[Susa]	Persepolis	*Kurtaš* artisans ?	[5?]
NN 487	Susa	Persepolis	*Kurtaš* [...]	140
NN 786	[Susa]	Persepolis	Babylonian *kurtaš*	///
NN 839	Susa	Matezziš	*Kurtaš*	///
NN 1126	Aksuštiš	///	Skudrian *kurtaš*	1014
NN 1216	[Susa]	Persepolis	*Kurtaš zamip* [“exerters”: Hallock]	3?
NN 1798	Susa	Persepolis	*Kurtaš* (men)	40+41
NN 1969	Susa	Persepolis	*Kurtaš*	///
NN 2132	Susa	Persepolis	Babylonian *kurtaš*	124
NN 2426	Susa?	Persia?	Men	321
			Stone-cutters	95

Sometimes these were isolated individuals, but more often groups of between a few persons and several hundreds of people. Sometimes described in terms difficult to translate (“gentlemen,” “servants,” etc.), travelers are occasionally identified by ethnonyms (Elamites, Persians, Lycians/Termiles, Egyptians, etc.) or technical expertise (masons, goldsmiths, herders, stonemasons, etc.), but often they are simply designated with the generic qualifier *kurtaš*, “workers,” at the disposition of the administration (Briant 2002, 429–39, 456–60). The tablets of the Q series illustrate perfectly the management of the labor force, which could be moved in groups of more or less significant size from one location to another within Persia itself, but could also be sent from one end of the empire to the other (e.g., a group of stonemasons between Susa and Aria [PF 1540]). Table 9.1 summarizes some of these movements of *kurtaš* during the twenty-second and twenty-third years of Darius (500 and 499) not only between sites at Susa and Persepolis but also to the major building-works on the site of Tamukkan (Taokè, on the Persian Gulf; Tolini 2008).

The trips were organized from the province of departure by the satrap and his administration through a process that can easily be recognized. Travelers received at their departures a “sealed authorization” (*halmi*) from a high authority, who can be none other than the satrap (Koch 1993, 5–58): for example, Irdabanuš

(Artabanos) in Bactria, Irdarpirna (Artaphernes) at Sardis, Vidarna (Hydarnes) at Ecbatana, or Bakabana (Bagapāta) at Susa.[13] This valuable document might also be issued by the chief administrator of Persepolis, Parnakka, or by the king, as with PF 1318: "He carried a sealed document of the king (*halmi sunkina*). They went forth from India. They went to Susa. Second month, twenty-third year." The text does not imply that the king was in India at the time (*pace* Giovinazzo 1994; cf. Briant 2010, n.54 and n.60, following Tuplin 1998), but rather that a return trip to Susa had been ordered by the king from the center of the empire. This is also true of the unedited tablet PF-NN 1809, which bears the following text: "Datiya received seven *marriš* of beer as rations. He carried a sealed document (*halmi*) of the king. He went forth from Sardis (Išparda) (via) express-service (*pirradaziš*), went to the king (at) Persepolis. Eleventh month, year twenty-seven. (At) Hidali."[14] One sees clearly here that the king was not at Sardis then, since Datiya is to come and join him at Persepolis; this, too, is a return trip. Rather exceptionally, the text mentions one of the numerous stopping-points where Datiya received his rations: Hidali, on the border of Elam and Persia.

What the tablets at our disposal record is not the authority proper entrusted to the head of the delegation, but simply a certificate of payment of rations at a particular stage of the journey by one or another warehouse supervisor.[15] The copy was sent to Persepolis or into the satrap's archives for the annual audit. That is why we sometimes find duplicates of such declarations in two categories of tablets, V (journals) and W (accounts) (Hallock 1969, 55–69; PF-NN 2259 ["religious journal"] with Henkelman 2008a, 385–454). Here, for example, are two excerpts from this type of summary document:

> Forty-nine (*marriš* of wine). Yadaušiya, (who) took Cappadocian workers (*kurtaš*) across from Rakkan to Ušbaka (at) Tamukkan, received for them, as rations (for) one day (in) the ninth month, twenty-first year, 980 workers received each one twentieth (*marriš*) [ca. 0.5 liter]. (*PFa* 30, lines 11–13; Category V: Hallock 1978, 132)
>
> Twenty-one (*marriš* of wine) Hihuddamana received, and gave (it) to princesses, to girls, daughters of Hystaspes, he gave (it). They went from Media to Persepolis. He carried a sealed document of the King. (*PFa* 31, lines 13–16; Category V: Hallock 1978, 115, 131)

It should also be noted that delegations could be accompanied by animals, and indeed must have been in most cases.[16] Here is an example:

> Nine QA [= ca. 9 liters] (of flour), supplied by Barušiyatiš, Karan received (for) rations. Four men each consumed one and a half QA. Three mules each consumed one QA. They carried apples (?). He carried a sealed document of the King. Twenty-third year, twelfth month. (PF 1300)[17]

The tablets of the Q series should thus be joined with those of the S3 series, "Travel rations for animals" (PF 1780–7), which relate to travel and rations

Figure 9.3 Seal of Aršāma.
Source: Porten and Yardeni 1999, 230.

for horses (PF 1780–4), horses and mules (PF 1785), camels (PF 1786–7), or dogs (PF 1264–5).[18]

An official travels from Babylon to Egypt

As I mentioned above (p. 192), following Hallock, the Persepolis tablets do not transcribe the original document (the *halmi*, the sealed document); they simply evoke it transparently (if I may use such an expression). In fact, they record the name of the high official who granted the permission (a satrap, king, or Parnakka) and a certain number of details that were incorporated into the document (the composition of the group, the journey, the amount of rations, etc.).[19] It is our good fortune to have such an explicit authorization among the letters of the satrap Arsamès (Aršāma), who ruled the satrapy of Egypt during the reign of Darius II (on whom see Briant 2002, 1150 s.v.) (Figure 9.3). His correspondence, or part of his correspondence, was found collected in a leather bag that also contained an imprint of his seal with the Aramaic inscription "Seal of [Aršāma] son of [the] ho[use]."[20]

Among his official correspondence is a letter (VI) traditionally titled by editors and commentators "Open Letter of credit for rations" (Whitehead 1974, 59–68, with the best analysis) or "Open Letter of authorization for rations" (Porten and Yardeni 1986, 114) or, more accurately, "The journey of a new steward."[21] Here is the latest translation offered by Bezalel Porten, which differs only in minor details from that proposed by John Whitehead (1974, 65–6, reproduced with commentary in Briant 2002, 364–5):

> From Aršāma to Marduk the official (*pqd*') who is in [*G*°]; Nabudalani [the] officia[l] who is in Lair; Zatuvahya the official [who is in] Arzuhin; Upastabara the official who is in Arbel, Hl- and Matalubash; Bagapharna the official w[ho] is in Salam; Phradapharna and *Hw[..]t* the [off]ic[ials] who are in Damascus.
> And n[o]w, [behol]d (one) named Nakhthor, m[y] official (*pqd*'), [is] g[oing] to Egypt. You, give rations (*ptp*) charged to my house (or, better, "estates": Kuhrt 2007, 739; cf. n. 24 below) (*byt zyly*) which is in your province(s), day by day:
> "white" flour – t[w]o handfuls,
> "inferior" flour – three (E R A S U R E: three) handfuls,
> wine or beer – two handfuls,
> [ ] one.
> And to his servants, ten per[s]ons, to each per day:
> flour – one handful,
> fodder – according to (the number of) his horses.
> Give rations to two Cilician persons (and) one artisan, all (told) three, my servants who are with him to Egypt, to each person per day: flour – one handful.
> Give them this ration, each official in turn, according to the route which is from province to province (*medinah*) until he reaches Egypt. And if he be in one place more than one day, then for those days do not give them extra rations.
> Bagasrava knows this order. Rashta is the scribe.

The content is easy to understand. While in residence at Babylon, the satrap of Egypt sends his steward to the Nile Valley to manage his property and businesses there. Nakhtor is accompanied by ten servants, in addition to two Cilicians and a craftsman; the caravan also includes a number of horses. To judge from the Aramaic document, the travelers were closely monitored. There was to be no dragging out of the route or consuming of extra rations. Each distribution is tied to the completion of a stage of the journey for which the estimated duration is set by the administration: "And if he be in one place more than one day, then for those days do not give them extra rations." Throughout the route, at each stage, the members of the caravan, each according to his grade level, are provided with rations of flour; the same holds for the horses, which are given fodder.[22] That is why the "Open Letter" is addressed to senior officers (also referred to as "stewards"), who managed the warehouses located in cities and towns along the road from Babylon to Egypt. In the following table is a list of the locations and personnel, which includes a significant number (four of six) of Iranian names (in italics in the table, right column):

Stopovers	*Officials* (paqdu)
NN	Marduk
Lair	Nabudalani
Arzuhin	*Zatuvahya*
Arbela, NN, Matalubash	*Upastabara*
Salam	*Bagapharna*
Damascus	*Phradapharna* and NN

From such well-known cities as Arbela and Damascus, we recognize that the road followed the left bank of the Tigris across Upper Mesopotamia before descending the valley of the Euphrates and then arriving at Damascus. The stages of the journey from Damascus to Memphis must have been mentioned in a second authorization – which, we note in passing, prompts reflection on the administrative units "from *medinah* to *medinah*."

The operation of the system at the imperial level

Already in 1950, in a preliminary article where Hallock transcribed, translated, and commented on a tablet he would later publish in 1969 as PF 1404 ("Trip from Sardis to Persepolis, directed by Dauma, bearer of a *halmi* of Irdapirna/Artaphernes"), he pointed out that the tablet was certainly not a duplicate of the sealed authorization: they were two distinct documents. A few years later, pursuing Hallock's observation, Emile Benveniste compared the tablet (FP 1404) with the Aramaic document:

> The Elamite tablet and the Egyptian document are complete. Thanks to the Persepolis tablet, we can recognize the nature of the Aramaic document; that which is called in Elamite *halmi*. The document mentions the places where the traveler should stop and names the local officials instructed to provide food, the nature and quantity of which was supposed to vary with the traveler's rank. These accommodations were both recorded on the spot; one notes the amounts attributed with the name of the responsible beneficiary and the mention of the authority who had issued him with the *halmi*. It is this type of accounting document that is preserved for us in the Elamite tablet reproduced above. (Benveniste 1958, 65–6)

Wisely, Benveniste proposed to understand *halmi* as a "letter of credit" (1958, 63) – terminology that is commonly used today to describe our Aramaic document. In his publication of 1969, Hallock returned to the issue, writing:

> The travel-ration texts also, by their very existence, imply an elaborate system for the transfer of credits. The texts were inscribed at the supply station and sent to Persepolis. There, evidently, the commodities dispensed were credited to the account of the supplier and debited to the account of the official who had provided the travelers with a "sealed document" (*halmi*) or "authorization" (*miyatukkam*). (Hallock 1969, 6)

The issue raised by Hallock is thus connected with other problems too complex to enter into here. To the question: "Were the resources and expenses of the empire generally managed globally, at the imperial level, in a manner similar to what one sees in Persia itself in the Persepolis tablets (Briant 2002, 447–8, 943)?," a positive answer is suggested by the Q series of the Fortifications archive, and by the passage of Pseudo-Aristotle cited above. Antimenes writes to the satraps that they must take care to maintain a constant level of reserves in the warehouses (*thesauroi*) along the royal roads.

What is more, the Aramaic document reminds us of a problem raised by other sources too, that of the porous boundary between the state economy and the economy of the private sector. Examination of the Persepolis tablets strongly suggests that the house of the King (*ulhi sunkina* in Elamite) had its own administration, both distinct from and partially overlapping with the general administration, through the activities of its highest official, Parnakka (Briant 2002, 463–71, 945–7). What was true of the administration of the King's house applied also to the satraps' administration, as well as in the case of what Arsamès calls his "house" (in Aramaic, *beyt*: Briant 2006). It is indeed very difficult to distinguish clearly what in the "house" of a satrap is drawn from his own property, and what is drawn from the property that he holds in his official capacity.[23] A passage from the letter of Arsham/Aršāma encapsulates the problem. It gives orders to the stewards of the warehouses located on the road to take rations "from my house (*byt zyly*)." It is sometimes inferred from this wording that the satrap possessed large private estates along the road and that he deducted the rations of his subordinates on his property. But, as Whitehead showed clearly in 1974, "[Aršāma] is thereby authorizing the superintendents to provide the rations and charge them *to his estate* through the central accounting system witnessed by the Elamite tablets" (Whitehead 1974, 64; my italic).[24] The term *beyt*' – the Aramaic equivalent of Babylonian *bitu*, the Elamite *ulhi*, and Old Persian *viθ* – should be translated "estate," a "house" in the sense of the Greek *oikos* (Briant 2002, 463–71). This is the "house" of the satrap, in the double sense of his own property and the assets attached to his office. In other words, the satrap of Egypt, like all his colleagues, has at his disposal with the central administration a "credit" from which he draws for official expenses, such as the rations of travelers to whom he has entrusted a "sealed document" (*halmi*). At the end of each year, the central government established a balance sheet of income and expenditures – what Pseudo-Aristotle (2.1.2) calls *eisagôgima* and *exagôgima*, which in this context we should avoid translating as "imports" and "exports" (Briant 2002, 451–3, 943–4).

There is no doubt that the management of inventory in the warehouses on the royal roads was a priority in the administration of the empire, not only because the Great King and the court always had to find all the products needed for the table of the King (Briant 1994; 2002, 200–3, 286–92; Henkelman 2010), but also because the workers of the administration circulated in large numbers on all the roads of the empire, and the road system itself formed an essential feature for military strategy and for the organization of territories. The management of these supplies fell to both the central government and the administrations of the satrapies. This is the reality expressed in the passage of Pseudo-Aristotle's *Oeconomica* cited above (p. 188) concerning Antimenes in Babylon.

In opening his chapter on the road system of imperial China, Joseph Needham declared that "the greatest highways of the ancient and medieval worlds were planned and constructed with strategic intent" and that "impressive and complex systems do not develop until the rise of strong and centralized governments." For comparison, he pointed to the examples of the empires of Persia, the Inca, and the Maurya (Needham 1954, 1–2). Between the Persian empire and the empire of the great kings of China, he established an even more direct comparison, quoting a saying of Confucius: "The radiation of virtue is faster than the transmission of (imperial) order by stages and couriers." As he then goes on to observe, "this remark would have been made, it is curious to note, at a time exactly contemporary with the functioning of the Persian Royal Road, ca. 495!" (Needham 1954, 35).

Notes

1 Translated from the original French by J. Bodel. Except where clearly referring to the modern era, all dates are BCE.

2 Machiavelli, *The Prince*, Chapter 4 ("Why the kingdom of Darius which Alexander had seized from his successors did not fail after the death of Alexander," *Cur Darii regnum quod Alexander occupaverat a successoribus suis post Alexandri mortem non defecit*). Charles de Secondat, Baron de Montesquieu, *Considerations on the Causes of the Greatness of the Romans and Their Decline* (ed. 1748), ch. 5.

3 At an earlier period Darius's strategy, when faced with a Macedonian offensive, was normally to entrust the defense of Asia Minor to his satraps under the command of Arsites of Hellespontine Phrygia (Briant 2002, 817–28).

4 On his title (*hemiolos*) and functions, see recently Müller 2005 and Le Rider 2007, 277–80 (not knowing Müller's article).

5 See also [Aristotle], *Oeconomica* 2.2.34 "an ancient law of the country" (*nomou ontos en Babylonia palaiou*) and 34b "according to the regulation in force" (*kata ton nomon ton keimenon*). For administrative continuities between the Achaemenids and Alexander, see Briant 2009, 164–70.

6 This is not the place to discuss the authenticity of the *Letters,* which is highly doubtful. My aim here is simply to note the contextual coherence of the information used in this passage: see Briant 1992.

7 On the present state of research, see Henkelman 2008a, 65–79, and the acts of a colloquium held at the Collège de France in November 2006 in Briant, Henkelman, and Stolper 2008.

8 Hallock 1969, 40–46, presenting tablets PF nos. 1285–1579 and 2049–57, to which add Hallock 1978, 120–24. Unfortunately, there does not exist today an assessment of the current state of research, even in preliminary form, on this aspect of imperial administration. The article of Seibert 2002 is commendable, but is essentially reported at second hand. I have often touched on the question (e.g. Briant 1982, 204–9), and at the time of his death in 1994, David Lewis left a manuscript of his research into the Persepolis

Tablets on the movements of the royal court (see Tuplin 1998 and Briant 2010 concerning travel to and from Susa, on the evidence of numerous tablets as yet unpublished). Discussion has focused mainly on the route and stages of the road between Susa and Persepolis: see, most recently, Potts 2008, with earlier bibliography.

Hallock had transcribed several thousands of unpublished texts (cataloged as PF-NN), which are now being analyzed and published by a group organized by M. W. S. Stolper at the Oriental Institute of the University of Chicago (Briant et al. 2008, 16–25); on the unpublished manuscript of Hallock, see also Henkelman 2008a, 72–5. A synthesis can be achieved only from a comprehensive review of the entire body of evidence, namely the texts themselves and the associated seals: cf. Briant, Stolper, and Henkelman 2008a, 18: "Thanks to the work of Margaret Root and Mark Garrison, seals and seal-use now occupy a central role in the study of the Persepolis Fortification Archive, with rich and growing consequences for understanding Achaemenid art and iconography, but also for identifying the administrators in and outside Persepolis, for reconstructing the network of relationships among them and for ascertaining their social and political status. They also provide, alongside prosopographical analysis, the basis for establishing a relative topography of the Fortification Archive." See Root 2008, esp. 115 (seals on the Q-texts), and Garrrison 2008, esp. 158–69 (seal use).

9 See Henkelman 2008a, 110–23 (territorial extent; cf. Henkelman 2008b) and 123–25 (dates): the known corpus covers the thirteenth through twenty-eighth years of Darius I (509–493), and more than 80 percent of the tablets of category Q are concentrated in his twenty-first through twenty-third years.

10 In addition to Koch 1993, 12–14, see now Henkelman 2008b, 308–12, who adduces the location of Kabaš/Gabai (Strabo 15.3.3) as a stopping-point between Persepolis and Ecbatana. For Sardis, see PF 1404 (Dauma goes from Sardis to Persepolis, accompanied by twenty-three men and a dozen young persons); PF-NN 1809 (a certain Datiya, in January or February 494, goes from Sardis "to the King at Persepolis": see below n. 14); and PF-NN 901 (a stop at Susa by a group coming from Sardis). Lebanon is cited once in an unedited text (PF-NN 1609).

11 Hallock 1969, 24–25. Irtašduna is the Artystonè known from Herodotus (3.88, 7.69, 72). For Irdabama and her travel provisions, see especially Henkelman 2010, 693–97; also Brosius 1996, 129–44.

12 For the tablet and the seal, see Garrison 1996, esp. 25–26. For the same seal elsewhere at Persepolis, see the photos and drawing by Root 2008, 126.

13 *halmi*: in old Persian *viyâtika–*: (Hallock 1969, 733–5 s.v.; Henkelman 2008a, 143).

14 Lewis 1980 proposed to identify Datiya with the famous Datis, returning from an inspection visit in Asia Minor.

15 Since each warehouse specialized in a single commodity (flour, grain, wine, beer, meat, etc.), the fact that a tablet refers to only one type of rations (e.g., flour or wine) should not mislead us; we simply do not have receipts from other warehouses (e.g., for beer or meat) that the caravan would nevertheless have visited according to the travel document (*halmi*).

16 This was implicitly the case with "fast messengers" (*pirradazziš*) mounted on horses also called *pirradazziš*: cf. Hallock 1969, 42; Briant 2002, 369–71, 928; Gabrielli 2006, 49–50, 61–62.

17 1 QA = 1/10th of BAR; 1 BAR (solid) = 1 *marriš* (liquids) = ca. 10 liters; thus 1 QA = ca. 1 liter. Compare also PF 1338 (cattle, between Susa and Persepolis); 1397 (three mules and three horses along with 180 people and fifty boys, from the King to India); 1418

(two men and twenty-eight camels, from Susa to Persepolis; each camel received one half BAR); 1467 (three gentlemen received one half QA of flour; two mules: two QA each); 1508 (twenty "gentlemen," thirty boys, six horses: one BAR each; one horse received eight QA); 1570 (six horses received one BAR each); 1571 (thirty mules received one and a half QA each); 2056 (588 men, one and a half QA each; eighteen horses, three QA each; 100 mules, two QA each: from Aria to Susa).

18 On rations for horses, see Gabrielli 2006, 35–60, without first-hand knowledge of the tablets. For camels, see also PFa 26 and Briant 2002, 464–65.

19 In a certain sense, *Letter 20* of "Themistocles" (above, pp. 188–9) provides an illustration in Greek (albeit fictional) of such a document: the name of the satrap (Artabazos), the travel (from Phrygia to the king), the number and nature of the accompanying entourage (thirteen Persians and two servants), and the animals (two horses, some camels); there is also a clear reference, even if not explicit, to the provisions for travel (*epitèdeia*).

20 See Driver 1957, 1–3 and esp. Whitehead 1974, 1–90, which regrettably remains unpublished. For the court formula "son of the house," see Briant 2002, 310, 959.

21 "Le voyage d'un nouvel intendant" (Grelot 1972, 66–8; French translation with commentary); a French translation was offered earlier by Benveniste 1958, 64.

22 The existence of reserves of fodder is also attested by a passage of Diodorus Siculus 16.41 (Phoenician rebels destroy stocks of fodder accumulated by the satrap), and another Aramaic corpus: the *ostraka* of Edom and the letters exchanged between the Bactrian satrap and his subordinates; see Briant 2009, 149–53, with references.

23 The Aramaic letters of Achaemenid Bactria raise the same issue (Shaked 2004, 14, 30).

24 It is on this understanding that Kuhrt 2007, 739 translates (above, p. 194) "charged to my estates." I arrived at the same conclusion as Whitehead before I knew of his work (Briant 1979, 1395 n. 89 = 1982, 311 n. 89).

References

Benveniste, E. 1958. "Notes sur les tablettes élamites de Persépolis." *Journal Asiatique* 246: 49–65.

Briant, P. 1979. "Des Achéménides aux rois hellénistiques. Continuités et ruptures." *Annali della Scuola Normale di Pisa,* 3rd ser., 9.4: 1379–414; also in Briant 1982, 291–330.

Briant, P. 1982. *Rois, tributs et paysans: études sur les formations tributaires du Moyen-Orient ancien*. Paris: Les Belles Lettres.

Briant, P. 1988. "Le nomadisme du grand roi." *Iranica Antiqua* 23: 253–73.

Briant, P. 1991. "De Sardes à Suse." *Achaemenid History* 6: 67–82.

Briant, P. 1992. "Thémistocle sur la Route royale." *DATA* (Groningen), note 4.

Briant, P. 1994. "L'eau du grand roi." In L. Milano, ed., *Drinking in Ancient Societies. History and Culture of Drinks in the Ancient Near East*, 45–65. Padua: Sargon.

Briant, P., ed. 1995. *Dans les pas des Dix-Mille. Peuples et pays du Proche-Orient vus par un Grec* (*Pallas* 43). Toulouse: Presses universitaires du Mirail.

Briant, P. 1997. "Bulletin d'histoire achéménide." *Topoi*, suppl. 2: 5–127.

Briant, P. 1999. "War, Persian Society and Achaemenid Empire." In K. Raaflaub and N. Rosenstein, eds., *Soldiers, Society and War in the Ancient and Medieval Worlds*, 105–28. Cambridge, MA: Harvard University Press.

Briant, P. 2002. *From Cyrus to Alexander: A History of the Persian Empire*. Winona Lake: Eisenbrauns; French edn. 1996.

Briant, P. 2005–6. "Montesquieu, Mably et Alexandre le Grand: aux sources de l'histoire hellénistique." *Revue Montesquieu* 8: 151–85.

Briant, P. 2006. "L'économie royale entre privé et public." In R. Descat, ed., *Approches de l'économie hellénistique*, 343–58. Saint-Bertrand-de-Comminges: Musée archéologique de Saint-Bertrand-de-Comminges.

Briant, P. 2007. "De Thémistocle à Lamartine. Remarques sur les concessions de terres et de villages en Asie mineure occidentale, de l'époque achéménide à l'époque ottomane." In P. Brun, ed., *Scripta Anatolica. Hommages à Pierre Debord*, 165–91 (Études 18). Paris: de Boccard.

Briant, P. 2009. "The Empire of Darius III in Perspective." In W. Heckel and L. Tritle, eds., *Alexander the Great: A New History*, 141–70. Oxford: Blackwell.

Briant, P. 2010. "Suse et l'empire achéménide." In J. Perrot, ed., *Le palais de Darius à Suse*, 22–48. Paris: Presses Universitaires de Paris-Sorbonne.

Briant, P., W. Henkelman, and M. W. S. Stolper, eds., 2008. *L'archive des Fortifications de Persépolis. État des questions et perspectives de recherches* (Persika 12). Paris: de Boccard.

Brosius, M. 1996. *Women in Ancient Persia (559–331 B.C.)*. Oxford: Oxford University Press.

Curtis, J. and N. Tallis, eds., 2005. *Forgotten Empire: The World of Ancient Persia*. Berkeley: University of California Press.

Debord, P. 1995. "Les routes royales en Asie mineure occidentale." In Briant 1995, 89–97.

Doenges, A. 1981. *The Letters of Themistocles.* New York: Arno Press.

Driver, G. R. 1957. *Aramaic Documents of the Fifth Century B.C.* Oxford: Oxford University Press.

Favaro, S. 2007. *Voyages et voyageurs à l'époque néo-assyrienne* (State Archives of Assyria Studies 18). Helsinki: Neo-Assyrian Text Corpus Project.

Gabrielli, M. 2006. *Le cheval dans l'empire achéménide* (Studia ad Orientem Antiquum Pertinentia 1). Istanbul: Ege Yayları.

Garrison, M. B. 1996. "A Persepolis Fortification Seal on the Tablet MDP 11 308 (Louvre Sb 13978)." *Journal of Near Eastern Studies* 55: 15–35.

Garrison, M. B. 2008. "The Uninscribed Tablets from the Fortification Archive: A Preliminary Analysis." In Briant, Henkelman, and Stolper, 149–236.

Garrison, M. B. and M. C. Root. 2001. *Seals on the Persepolis Fortification Tablets, I: Images of Heroic Encounter* (Oriental Institute Publications 117.1). Chicago.

Giovinazzo, G. 1994. "Les voyages de Darius dans les régions orientales de l'empire." *Annali del'Istituto Orientale di Napoli* 54: 32–44.

Graf, D. 1994. "The Persian Royal Road System." *Achaemenid History* 8: 167–89.

Grelot, P. 1972. *Documents araméens d'Égypte* (Littératures Anciennes du Proche-Orient 5). Paris: Éditions du Cerf.

Hallock, R. T. 1950. "New Light from Persepolis." *Journal of Near Eastern Studies* 94: 237–52.

Hallock, R. T. 1969. *Persepolis Fortification Tablets* (Oriental Institute Publications 92). Chicago.

Hallock, R. T. 1978. "Selected Fortification Texts." *Cahiers de la Délégation Archéologique Française en Iran* 8: 109–36, www.achemenet.com/document/HALLOCK1978_CDAFI8.pdf.

Henkelman, W. 2008a. *The Other Gods Who Are. Studies in Elamite-Iranian Acculturation Based on the Persepolis Fortification Texts* (Achaemenid History 14). Leiden: Nederlands Instituut voor het Nabije Oosten.

Henkelman, W. 2008b. "From Gabae to Taoce: The Geography of the Central Administrative Province." In Briant, Henkelman, and Stolper, 303–16.

Henkelman, W. 2010. "'Consumed before the King.' The Table of Darius, that of Irdabama and Irtaštuna, and that of his Satrap, Karkiš." In B. Jacobs and R. Rollinger, eds., *Der Achämenidenhof* (Classica et Orientalia 2), 667–775. Wiesbaden: Harrassowitz.

Koch, H. 1993. *Achämeniden-Studien*. Wiesbaden: Harrassowitz.

Kuhrt, A. 2007. *The Persian Empire. A Corpus of Sources from the Achaemenid Period*, 2 vols. London and New York: Routledge.

Le Rider, G. 2007. *Alexander the Great. Coinage, Finances and Policy* [French 2003] (Memoirs of the American Philosophical Society 261). Philadelphia.

Lewis, D. 1980. "Datis the Mede." *Journal of Hellenic Studies* 100: 194–5.

Manfredi, V. 1986. *La strada dei Diecimila: topografia e geografia dell'Oriente di Senofonte*. Milan: Jaca.

Müller, H. 2005. "Hemiolos. Eumenes II, Toriaion und die Finanzorganisation des Alexanderreiches." *Chiron* 35: 355–84.

Needham, J. 1954. *Science and Civilisation in China*, 4.3: *Civil Engineering and Nautics*, with the collaboration of Wang Ling and Lu Gwei-Djen. Cambridge: Cambridge University Press.

Porten, B. and A. Yardeni. 1986. *Textbook of Aramaic Documents from Ancient Egypt*, I: *Letters*. Jerusalem: Hebrew University.

Porten, B. and A. Yardeni. 1999. *Textbook of Aramaic Documents from Ancient Egypt*, IV: *Ostraca and Assorted Inscriptions*. Jerusalem: Hebrew University.

Potts, D. 2008. "The Persepolis Fortification Texts and the Royal Road: Another Look at the Fahliyan Area." In Briant, Henkelman, and Stolper, 275–302.

Root, M. C. 2008. "The Legible Image: How Did Seals and Sealing Matter at Persepolis?" In Briant, Henkelman, and Stolper 2008, 87–148.

Seibert, J. 2002. "Unterwegs auf den Straßen Persiens zur Zeit der Achämeniden." *Iranistik* 1: 7–40.

Shaked, S. 2004. *Le satrape de Bactriane et son gouverneur. Documents araméens du IVe s. av. notre ère provenant de Bactriane* (Persika 4). Paris: de Boccard.

Tolini, G. 2008. "Les travailleurs babyloniens et le palais de Taokè." *Achaemenid Research on Texts and Archaeology* 2008.002, www.achemenet.com/document/2008.002-Tolini.pdf.

Tuplin, C. 1998. "The Seasonal Migration of Achaemenid Kings: A Report on Old and New Evidence." In M. Brosius and A. Kuhrt, eds., *Studies in Persian History: Essays in Memory of David Lewis*, 63–114 (Achaemenid History 11). Leiden: Nederlands Instituut voor het Nabije Oosten.

Welles, C. B. 1933. *Royal Correspondence in the Hellenistic Period*. New Haven: Yale University Press.

Whitehead, J. D. 1974. "Early Aramaic Epistolography: The Arsames Correspondence." PhD diss., University of Chicago.

10

The Well-Remembered Path: Roadways and Cultural Memory in Ptolemaic and Roman Egypt

Jennifer Gates-Foster

Introduction

Much of the scholarship on the importance – both economic and symbolic – of roads and highways as components of ancient landscapes has focused on the relationship that the construction, administration, and use of roads and road networks had to some central authority and its agents: the Achaemenid empire, Rome, and the Inca empire (see Briant, Talbert, Julien in this volume). Indeed, many of the essays in this volume take this approach, for understandable reasons; the construction and maintenance of roads often does, without doubt, require the coordination and resources of some centralizing power. Yet all too often this paradigm of road construction and meaning depends on the notion of a state-driven deployment of roads as economic tools or, at the very least, an undertaking that requires the sanction of some super-regional authority and intrinsically conveys the power of that entity.

Only recently has this model been challenged by scholars, especially archaeologists, who have instead emphasized the discursive quality of roads and indeed the incredible variety of forms and contexts, both physical and cultural, that are encompassed by their construction and use. Drawing on models developed in landscape studies, archaeologists have also begun to explore the way that roads must be understood as palimpsests, and their analysis shaped by an awareness of the experience of movement through a complex and layered landscape whose meaning – fluid and complex – is determined by social memory (Trombold 1991; Van Dyke

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

and Alcock 2003; Snead, Erickson, and Darling 2009a, as a recent example). In this sense, roads – especially those with richly layered histories – are to a certain extent defined by the imagined existence of previous travelers, those who have gone before and "made" the road. A road or pathway is, by definition, well remembered.

This essay embraces this more complex approach and takes into account the agency of the individual experience and action in the landscape and the role that memory, marked in the landscape, plays in the use and experience of roadways. It takes as its subject the roads of Egypt, particularly those of the Graeco-Roman period, which, in many cases, overlie those of the Pharaonic era. Scholarly discussion of the roads of ancient Egypt is usually framed within a discourse which asserts that the ruling power – whether the Pharaonic state of the Middle Kingdom or that of later foreign rulers such as the Achaemenid Persians, Ptolemaic Greeks, or Romans – held exclusive rights to the resources of the land and alone possessed sufficient means to exploit its wealth (Shaw 1994; 1998). This perspective encourages a tendency to see the physical traces of activities – such as mining, stone quarrying, and trade – and the roads which were an intrinsic component of these activities as evidence for this overarching power structure. Indeed, the roads are seen as shaped by the geographic knowledge that a ruling entity held and controlled (critique of this approach by Bloxam 2006, 279–80; Adams 2007a). This view is problematic on many levels, not least because it assumes that individuals who were involved in these activities and were using the roadways that supported them would conceptualize their experiences primarily in relation to these pervasive state interests. In other words, the miners, mule drivers, soldiers, and traders would see their participation in these activities as shaped by the ultimate needs of the central authority and would behave in ways that reflected that imperative.

It need not follow, however, that exploitation of a resource by a centralized elite and the creation of infrastructure to support that goal absolutely determine the way that individuals understood their experiences or what elements of their environment shaped their interactions with the landscape. This point may be especially true when other social networks are absent or perceived as alien, as the nomadic tribes of the Egyptian deserts might have been to the eyes of settled Valley dwellers at most periods of Egyptian history (Wendrich and Barnard 2008, 10; Burstein 2008). Although this essay will not focus on the presence of nomadic groups in the desert and their patterns of movement, their presence in the landscape was well known and, along with the harshness of the desert climate and its challenging topography, it defined the desert as a marginal space, inhabited by the gods and "others." The experience of the desert – otherworldly, sacred, dangerous – encouraged the formation of a sense of connection among the individuals who traveled these roads as well as among the temporary communities that sprang up around mines and at other places in the desert.

This sense of community and social connectivity was partially maintained during the Ptolemaic and Roman periods through participation in landscape marking – usually by leaving inscriptions known as *proskynemata* (literally, an act of worship or reverence) or graffiti at sites with ritual or topographic importance. These activities have long been considered a fundamental part of the Ptolemaic and Roman interaction with the Egyptian religious landscape, especially at the sites of temples where visitors and pilgrims left their mark in extraordinary numbers (Rutherford 2003; Adams 2007b, 215; Dijkstra 2008, 186–8). Lynn Meskell, in her discussion of Ptolemaic and Roman *proskynemata* at the New Kingdom settlement of Deir el-Medina in Thebes, also records how these "expressions of awe and piety" were a reaction to the "potent materiality and symbolic landscape" that the ruins of the town presented to the later traveler (2004, 23). Her study – not of a temple, but a ruined townscape – demonstrates how powerfully the physical presence of the ancient remains stimulated an impulse to re-shape the location into a meaningful locus for ritual, in this case practices that had nothing to do with the original purpose of the site.

Her work reminds us that meaning-making is not limited to locales that are constructed specifically for religious purposes, but that other spaces can be converted to this end (or others), including locations that have nothing to recommend them except their place in the landscape and a physical suggestion of remote antiquity. This is a particularly important point to keep in mind since many of the sites discussed in this paper contain no architectural framing, but are natural places along roadsides that have become the focus of cult and other kinds of more ambiguous activity. During the Late, Middle and New Kingdoms, places in the deserts were established to serve mining communities and travelers. Inscriptions were routinely left on prominent rock faces in these areas by individuals traveling through desert landscapes at natural sites that hosted spontaneous, informal ritual activity or were the focus of "official" commemoration of an expedition (J. Darnell 2002a). The cultural memory of these practices, still visually prominent in the landscape of the desert but probably equally mysterious to later eyes, likely served as a potent reminder of previous activity along the roads – much like Deir el-Medina did for the Graeco-Roman tourists in Thebes. Although it is difficult to know precisely what these later travelers made of the markings of their predecessors or what continuities existed in actual ritual or experience, these inscribed spaces became sacred palettes. They were a model provided to later travelers for establishing a communal narrative among transients, a community on and of the road that existed in large part outside of any centralizing-power dynamic and only in reference to itself and the experience of place; this experience was itself formed in the dialectic between these ritual markings (David and Wilson 2002b, 43–5).

In order to explore this dynamic of how travelers marked their experiences on the landscape of Egypt's roads and how we should understand these activities, this essay focuses on evidence for road networks primarily in the Eastern and Western Deserts of Egypt. Here, preservation of the roads themselves is best, and the evidence for graffiti at particular nodal points along the roadways is clear. Using these data, we will consider how these roadways – used throughout the Pharaonic, Ptolemaic, and Roman periods – demonstrate the continued relevance of inscribed landscapes from previous eras for understanding the articulation of road networks and travel in later periods.

Egyptian Conceptual Geography and Religious Practice

No discussion of roads and roadways in Egypt can begin without first taking into account the most obvious "roadway" on the Egyptian landscape, and the one that fundamentally shaped the Egyptian view of the world as both a physical and metaphysical place: the Nile River. The Nile and its cyclical flooding dominated the economic and religious life of ancient Egypt throughout its history, and it is almost *pro forma* to begin with a nod to the notion that Egypt was first and foremost the gift of the Nile (Klimkeit 1975; Allen 2003, 23). This point holds some importance for any discussion of the conceptual interactions of Egyptians with their landscape, since any region of Egypt was framed by its relationship to the life-giving river and the fertile lands of the Valley where crops could be raised and life could be sustained. All roads led to or from the Nile, both literally and figuratively.

The stark contrast of the lush green of the Valley with the desolate, red deserts to the east and west were linked in the minds of ancient Egyptians with the cycle of death, symbolized by the deserts – especially the Western Desert where the sun sank into the hills every evening – and rebirth, which was associated with the fertile lands of the Valley and Delta. This conceptual geography ordered Egyptian life, and balancing these opposing realms was a central focus of Egyptian religious practice (Kemp 1989; Allen 2003; Baines 2007). As eloquently described by Janet Richards, the expression of this dichotomy and balance was inscribed on the landscape of Egypt:

> The maintenance of order [or *ma'at*], the keeping of things in their place through careful adherence to established ritual procedures, was the chief ideological rationale and organizing principle of ancient Egyptian life, and was most exemplified in the development, meaning and use of explicitly sacred landscapes. (1999, 87)

The physical landscape encapsulated the divisions and tensions of Egyptian life and was also the primary venue for the interactions which maintained these interconnected spheres in harmony. No landscape was neutral, therefore, especially a desert landscape, which was a place associated with death, chaos, and the transition between the earthly and heavenly realms. Perhaps, then, it is no surprise that the potent, meaning-laden landscape was itself marked by travelers as an expression of the inherent tensions of the desert atmosphere, with all its religious connotations.

In addition to anchoring the ideological worldview of the Egyptians, the Nile was also a vital means of transportation and travel, although there is a lack of evidence for how this actually worked in practice (Partridge 2010, 370–80). Early depictions of boats and sailing vessels in the Neolithic rock art galleries of the Eastern Desert and at Hierankonpolis attest to the early symbolic importance of river travel (Winkler 1938; Redford and Redford 1989; J. Darnell 2009). The main river channels and the network of canals that branched off them would have been the primary means for moving commodities long distances in ancient Egypt, although this traffic was certainly limited by the annual flood when navigation of the river would have been very difficult, if not impossible (Adams 2001, 146–7; 2007a, 19–22). Even so, the river, in addition to being a source of life and symbol of fertility, was also a conduit that linked the land of Egypt and oriented all life to its course. Desert roads and trails must be understood as part of a larger system of transport whose meaning was fundamentally linked to the life-giving river. To move away from the Nile and into the desert was both a religious experience and a physically treacherous one.

Egyptian Roads in the Pharaonic Period: Construction and the Epigraphic Habit

Archaeologically documented roads in Egypt are very few in comparison with the rest of the Near East where roads, although mostly unstudied, have been recorded for decades (Poidebard 1934; for an overview, see Snead, Erickson, and Darling 2009a, 4–6). In Egypt, systematic study of roads and trails has been sporadic, and has only recently begun to benefit from the employment of new technological tools (Parcak 2004) and careful archaeological survey.[1] The roads of Egypt that led from the lush river Valley into the desert were invested with the metaphorical significance of transition towards a mysterious location (Vittmann 1999; Loprieno 2003; Baines 2007, 10). This significance must have had additional connotations when these roads traversed the liminal space between the Valley and the desert, linking settled population centers to peripheral areas.

The earliest documented road courses appear in the Old Kingdom, although there are extensive petroglyphs in both the Eastern and Western Deserts that date to the Predynastic era (J. Darnell 2009) and suggest regular itineraries existed even at that time (Figure 10.1). The preserved Old Kingdom roadways linked the Nile or another body of water, where shipping facilities would presumably have been located, to resource points in marginal regions – usually stone quarries which were the source of prestigious materials used in prominent royal contexts by Old Kingdom pharaohs (Aston, Harrell, and Shaw 2000).

Most famous are the Chephren Gneiss quarries at Gebel el-Asr, which were exploited during the fourth and third millennia (Murray 1939). The roadways that connected the quarries have been thoroughly documented by the "QuarryScapes" project (Heldal, Bloxam, and Storemyr 2007), which is currently working to record both the intra-site roadways and those which connected the site to the Nile some 80 km away, making this the longest documented quarry road in the world. These roadways were marked with cairns and provided with wells, shelters and other small installations, presumably to provide water and shelter to the individuals traveling between the quarries and Nile (Shaw et al. 2001; Heldal and Storemyr 2003, 20; Storemyr et al. in press). Construction of these roadways – as more generally in later periods as well – is minimalist, often

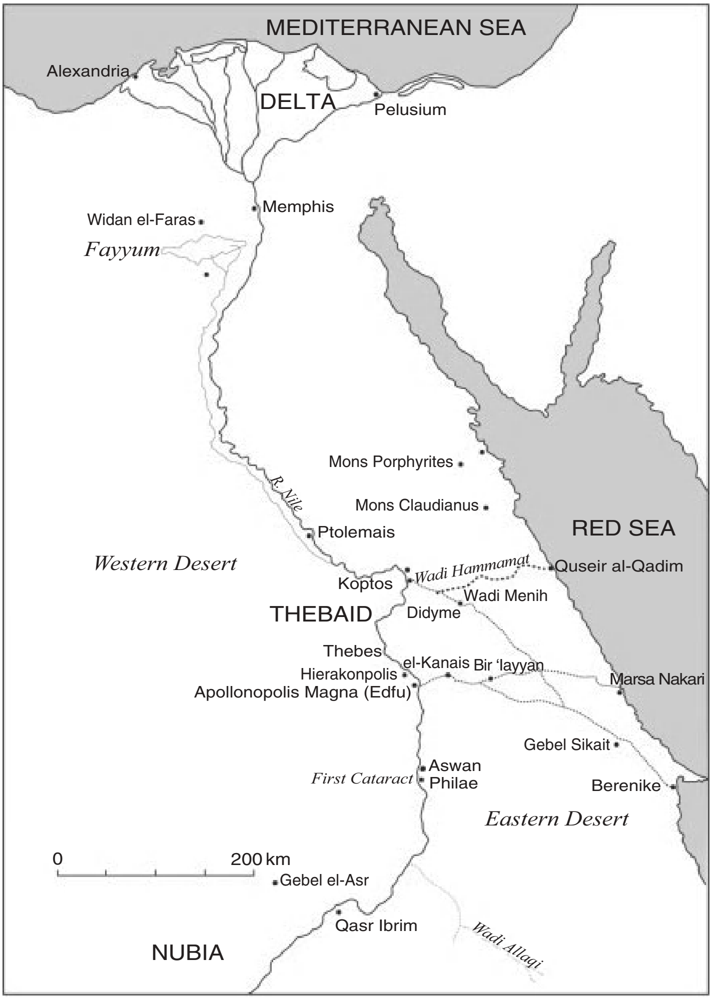


Figure 10.1 Map of Egypt showing places mentioned in the text.
Source: Adapted from Bailey 1996, 6.

taking the form of simple, cleared tracks with heaps of gravel and stones that mark out the boundaries of the traversed area. On the whole, roads in Egypt are rarely marked with milestones or other devices which refer to external measurements, making them frustratingly difficult to date on the basis of construction. The best evidence for dating is the surface pottery collected at locations along the route and the date of the installations to which they lead, although this is of course problematic testimony. The presence of pottery scattered along the surface of the roads – evidence of previous travelers – is perhaps the most consistent signpost of a road in Egypt, and it is reflected in some ancient texts which mention broken pottery as a prominent feature marking the course of a road (J. Darnell 2002a, 106; D. Darnell 2002, 156).

Not all Old Kingdom roads are cleared tracks, however; there are a few documented examples of paved roads dating to this era and to the New Kingdom. The best-preserved example is associated with the basalt quarries at Widan el-Faras in the Fayyum southwest of Cairo. This paved road connected the quarries to a harbor on the shores of the now extinct Lake Moeris 11 km away. It is paved with basalt, limestone, and petrified tree trunks and is thought by scholars to be the oldest paved road in the world, dating to the Fourth and Fifth Dynasties of the Old Kingdom (between 2575 and 2323 BCE). Another example of similar construction, dating to the New Kingdom, is visible at Gebel Sidi Osman on the west bank (Harrell and Bown 1995; Bloxam and Storemyr 2002).[2]

Pharaonic road courses are often marked by inscriptions and figural rock-carvings. At the Old Kingdom mining sites and along the roads that served them, however, the range of inscription types is relatively limited despite the variety of settings (Peden 2001, 4–13; J. Darnell 1997; 2002b). Most recorded examples, written in hieroglyphs, preserve the names and titles of the king responsible for sending out the quarrying expeditions and of the enemies which threatened them or their officials. Such examples are usually free-standing stone stelae integrated into the mine or quarry site, like the stele from the Chephren quarries, which names Chephren (also known as Khufu) and was found by Murray (1939) (Figure 10.2). Likewise, examples can also appear on the natural stone of a site, like the inscription of Sahure which was recorded in 1970 at a turquoise mine in the Wadi Kharig in the Sinai (Giveon 1977).

In the Middle and New Kingdoms, roadside markings become much more common, and the purposes they serve more diverse. The best known example of this new kind of inscription is known as the "Tjauti inscription," the only Pharaonic graffito which explicitly mentions road construction. It was recorded by John and Deborah Darnell in the course of their survey of the Western Desert caravan roads in the great bend of the Nile near Koptos, and dates to the Middle Kingdom. It documents the creation of a road, not for the purpose of accessing a resource in the desert, but presumably as part of a military expedition (Peden 2001, 17–18; J. Darnell 1997; 2002a; 2002b). During the Middle Kingdom the exploitation of desert resources, especially mines and quarries, reached new heights, and desert travel clearly became more widespread and the reasons for it more varied (J. Darnell 1997, 249).

The Late Middle Kingdom and New Kingdom are also the time when cult activity first appears to become explicitly associated with roads. Religious rituals dedicated to the worship of deities appropriate to the desert setting, especially Hathor, appear at locations along the desert roads (J. Darnell 2002a, 112–14; Peden 2001, 28–9), especially rock galleries (large, smooth natural rock faces which become venues for repeated marking) that do not otherwise show signs of industrial activity. Hathor is often depicted in Pharaonic iconography as a cow emerging from the Mountain of the West, and her cult is especially appropriate to the realm of desert roads and mining. Extensive evidence for her cult has also been observed at numerous mining sites dating to the Middle and New Kingdoms,

Figure 10.2 Stele from the Chephren quarries.
Source: After Murray 1939, unnumbered figure.

including amethyst mines in the Western Desert and gold mines in the Eastern Desert (Bloxam 2006, 283–6). Min, the ithyphallic god of the Eastern Desert and part of the Theban triad, was also invoked in many of the Pharaonic expeditionary inscriptions recorded in the Wadi Hammamat in his manifestation as Amun-Min (Bernand 1972a).

This evidence for cultic activity suggests a broadening in the types of behaviors that were appropriate to a roadside setting, and indeed a re-conceptualization of what activities were associated with the roads and roadways of the Late Middle and New Kingdoms. The practice of cultic activities at the mines and rock shelters along the desert roads activated these locations, and they became potent gateways to the landscape, what the Egyptians called the "narrow doors of the desert" (J. Darnell 2002a; 2002c). The rituals or informal, spontaneous acts that resulted in the inscriptions were a way of fashioning this liminal, marginal region into an appropriate contemporary venue for cult ritual. The community of worshippers was made manifest by the repeated marking of inscriptions at these rock galleries. In this way, inscribing the roadside landscape was a way of creating continuity with a community of past worshippers and travelers and framing the experience of travel that linked the present and the past, however distant (Stewart and Strathern 2003; David and Wilson 2002a).

Memory Marked in the Landscape

This type of ritualized interaction with the landscape is well documented in a wide range of archaeological contexts and has been the focus of considerable interest to archaeologists in recent years.[3] What has been less common has been the explicit linkage of these kinds of memory-making activities in the landscape with landscapes of movement and travel (exceptions include Snead 2008; 2009b). These loci where inscriptions are placed in the Egyptian case are nodal points, fixed in place, but they are intrinsically part of a landscape of travel that exists only as part of the larger experience of moving through the desert, which is itself richly significant and potentially activated (Gates 2006).

The continued importance of these locales is attested by their ongoing relevance as places of memory in the later eras of Egyptian history, when desert travelers, many of them foreigners of Greek or Roman extraction, chose to participate in the dialogue of place and memory-making by adding their own Greek or Latin contributions to the inscribed landscape created by earlier ritual and activity. Although much about these later inscriptions is different (language, formulae, etc.), there are powerful continuities, not least of *place*, which suggest that the simple proximity to symbols of previous eras, whether intelligible or not, was deeply compelling. In this respect the rock galleries of the deserts are similar to the ruined town at Deir el-Medina where the material presence of the earlier period stimulated a refashioning of the landscape and an ongoing conversation with that past.

The Ptolemaic period

The conquest of Egypt by the Ptolemies introduced a new agenda into the exploitation of Egyptian resources and, although mining – especially gold mining – continued to be important (Harrell et al. 2006; Gates-Foster, Sidebotham, and Wright forthcoming), the Ptolemies transformed the imperatives at work in the deserts of Egypt, particularly the Eastern Desert. They actively pursued the acquisition of elephants from eastern Africa and accomplished this daring feat by establishing ports, like the Pharaohs before them, along the coast of the Red Sea in order to receive the ships carrying these creatures. These ports, which included Berenike Troglodytica, served as anchor points along the coast, and roads which had previously led only to the mining installations and smaller coastal towns were now funneled towards the nodes provided by the Red Sea ports (Sidebotham and Wendrich 2001–2; Sidebotham and Zych 2010).

The roadways of the Ptolemaic period in many cases overlapped with already established routes, including the road leading from Edfu past a temple of the New Kingdom Pharaoh Seti I at el-Kanais and running across the desert towards the

Figure 10.3 The Seti I temple at el-Kanais.
Source: J. Gates-Foster.

coast (Brand 2000, 279–81) towards Marsa Nakari (Figure 10.3). The New Kingdom dedicatory inscription on the temple makes explicit the connection that this cult space held to its desert, roadside context:

> They said from mouth to mouth: "Amun, give him eternity, double him everlastingness; Gods who are in the well, give him your span of life! For he opened the way for us to go, that had been blocked before us. Of which we said, 'If we pass it we are safe,' we now say, 'If we reach it we live'; the difficult way that troubled us, it has become an excellent way. He made the transport of the gold to be as the falcon's sight, All generations yet to be wish him eternity; May he have jubilees like Atum, may he be young like Horus of Bedhet. For he made a memorial in desert lands to all the gods, he drew water from mountains far away from people; Every foot that treads the desert says, 'Life-stability-dominion' for King Menmare [another of Seti's names], Beloved of Amen-Re, King of Gods." (trans. Lichtheim 1978, 53)

Although Strabo (17.1.45) claims that Ptolemy II Philadelphus re-established this road in the Graeco-Roman era, archaeological evidence indicates that immediately prior to the conquest of Egypt by Alexander in 332 BCE there was already traffic moving into the desert along this route to the gold mines at Barramiyya and Bir Samut as well as to other resource points (Gates 2005; Gates-Foster, Sidebotham, and Wright forthcoming). Activity along the roadways intensified greatly after the establishment of the Red Sea ports. This growth is reflected in the development of increasing numbers of small installations designed to shelter travelers and provide them with water and supplies (Sidebotham and Zitterkopf 1995; Sidebotham and Wendrich 2001–2; Gates 2005).

The roads of this era are much like those of the Pharaonic period: unpaved, cleared tracks marked by cairns and small way stations. There are no documented examples of paved roads. One substantial difference, however, is the first appearance of a marker which refers to distance from a point outside the desert. This Greek inscription, dating to 257 BCE and recovered at Bir ʻIayyan, marks the distance from this small way-station back to the Nile (Bagnall et al. 1996). Bir ʻIayyan is located some 95 km into the desert, and remains the only example of a site in Egypt to preserve a marker of this kind.

In addition to this distance marker, the Ptolemaic roadways of the Eastern Desert are marked by numerous graffiti. Most preserve a name, a dedication to a deity and, occasionally, a drawing of some kind. Some of these rare sketches are religious, like the offering tables and goddesses at the amethyst mine in the Wadi Abu Diyeiba (Harrell et al. 2006). The elephants at Bir Abu Safa (a Ptolemaic-era shrine) and at el-Kanais are illustrative of the commodities that were being transported through the desert during this era (Sidebotham et al. 2004).

The range of inscriptions (which are more common than drawings) and their formulae is noteworthy; most are dedications to the god Pan and express wishes for safe passage and protection (Bernand 1972a; 1972b; 1977; Colin 1998; Adams 2007b). Pan, as the god of remote, dangerous landscapes, is the appropriate deity for this location and his attributes reflect this role; He is Pan "of the good road," "gold-giving," and "he who walks in the mountains" (Aufrère 1998). Indeed, as Colin Adams has clearly demonstrated, the range of epithets ascribed to Pan in the desert inscriptions offers considerable insight into the fears and dangers that were experienced by travelers in the region (2007b, 215–17). In addition, Pan's assimilation with Min, the Pharaonic god of the Desert and of Thebes, indicates how closely Ptolemaic concepts mapped onto the role given to the Theban god in previous centuries (Yoyotte 1952). Given these synchronicities, it is no surprise then that so many of these *Paneia* (or informal sanctuaries to Pan) are located along the roadways that led through the desert. What is perhaps less expected is the degree to which they reflect a *physical* connection to the ritual landscape established by Pharaonic travelers. The site of el-Kanais, which was a kind of gateway to the Eastern Desert, provides a clear example of this phenomenon.

Some of the potency of these invocations is anchored, literally, in their placement. The proximity of the Ptolemaic *proskynemata* to the New Kingdom temple and its powerful imagery suggest that it acted as a stimulus to the Ptolemaic travelers, although their motivations are impossible to decipher. Perhaps they saw in the Seti I inscription a reflection of their own concerns as travelers, and made the connection between their experiences and the people who created the temple some thousand years earlier. Or, as seems more likely, they (like the visitors to Deir el-Medina) felt that the presence of these ancient images and the rock-carved temple anchored this location, and gave it special significance as a place for acknowledging or creating a connection to the divine.

The Roman period

Roman-period roads are without a doubt the most thoroughly studied corpus of Egyptian routeways, although the focus has largely been on the papyrological data (Adams 2001; 2007a), only recently moving on to the physical remains of the roads themselves (Sidebotham and Zitterkopf 1995; Sidebotham, Zitterkopf, and Helms 2000). The fact most often mentioned by scholars who study the physical remains of Roman roads is the almost complete lack of inscribed milestones along the Roman tracks of Egypt (*CIL* III 6633; Adams 2007a, 22). While not unique, this absence is of course a considerable difference from the road marking systems in place in other parts of the empire, including other desert regions (Gates 2006).

Roman roads in Egypt continue to function in much the same way that their predecessors did, namely by connecting waterways with mines, quarries and settlements in the deserts. The quarries in the Eastern Desert at Mons Claudianus and Mons Porphyrites, which were held as imperial monopolies, as well as the beryl mines at Gebel Sikait were extensively worked. Settlements sustained by produce and supplies from the Nile Valley grew up around them (Peacock and Maxfield 1997; 2007; Maxfield and Peacock 2001). In addition, the ports of the Red Sea became the primary conduit for materials shipped from the Indian Ocean and Arabia (Sidebotham and Wendrich 2001–2; Sidebotham and Zych 2010). The traffic in the Eastern Desert intensified accordingly, and the army was introduced onto the scene to regulate the collection of tariffs and to protect the caravans transporting these goods to Koptos (Alston 1995). The more northerly city of Koptos became, rather than Edfu, the primary entrepôt for Roman-era trade in the Eastern Desert.

Large regular enclosures with watch towers and subsidiary structures – much larger than any associated with the Ptolemaic efforts – were built in the desert, and the imperial hand is visible in the dedicatory inscriptions erected by Roman soldiers and officials over the entryways of these desert forts and *hydreumata* (stations provided with wells or cisterns). In the second century, the *Via Hadriana* was built along the Red Sea coast (Sidebotham, Zitterkopf, and Helms 2000). None of these roads, including the imperial *via* and the routes from the quarries held as imperial monopolies, were paved. The ruts from the sledges used to transport the columns quarried at Mons Claudianus are still visible across the sandy plain between the quarry and Koptos, while the *Via Hadriana* is nothing more than a track cleared of large stones.

In the Western Desert, many of the same routes which were used in the Middle and New Kingdoms continued to be used, just as the quarries remained in operation. John Darnell (2002a) has observed, however, that there is much more variety in the tracks which date to this period. Rather than sticking to established patterns, worn visibly into the landscape, Roman-era travelers branched out, improvising, and creating new paths across the sandy desert towards the oases and mines.[4] Likewise, in the Eastern Desert, the main routes which connect the large installations probably saw the bulk of the traffic in valuable goods, but there are many hundreds of other contemporary sites that testify to the movement of individuals along alternative routes (Gates 2005; Sidebotham et al. 2008).

All kinds of traffic – travelers involved in business on behalf of traders, or even on imperial errands, and individuals moving into the desert for their own purposes – engaged in the practice of marking the landscape. The rock shelters located along the route from Koptos to Berenike in the Wadi Menih and in the Wadi Hammamat, among others, provide ample evidence that Roman-era travelers felt the same compulsion to leave their mark along the roadways of the Eastern Desert when traveling between the fortified sites that dotted the desert tracks.[5]

Most of these Roman inscriptions largely fall into the "so and so was here" genre, and often lack the direct invocation of Pan that was common in the Ptolemaic period. The Paneion at el-Kanais, for example, contains very few Roman *proskynemata* (Bernand 1972b; 1977), and none mentions Pan.[6] This absence of the god from these inscriptions and others along the more northerly routes mentioned above has suggested to Colin Adams that travelers felt safer and more secure in the environment of the desert, now thoroughly ordered and controlled by Rome: "Indeed, one gets the impression from the Roman period graffiti (of the Wadi Hammamat) of a transition to a growing confidence in desert travel on roads not so much provided by the god Pan, but by emperors" (2007b, 218). This perception may to some degree be true, especially in the first century CE, when most of the inscriptions are made along the Koptos-Quseir road. The roads were far from uniformly secure, however, as ostraka demonstrate the ongoing threats to travelers from nomadic groups in the south during the early second century CE (Cuvigny 2003, 351–2).[7] One example records a raid on a Roman post by some sixty nomads in 118 CE (O.Krok.87).

The trend in the wording of the Hammamat and Menih inscriptions that Adams (2007b) and Cuvigny (Cuvigny and Bülow-Jacobsen 1999; Cuvigny 2003) note is significant, and the lack of a verbal invocation of Pan certainly indicates a change in the epigraphic habit that might be explained by new practices or beliefs in the Roman era. Their analysis does not, however, take into account the physical location of the inscriptions and their relationship to other, earlier Pharaonic graffiti that may help us understand the choices made by the Roman travelers both in terms of *what* they wrote and *where* they wrote it.

The Paneion at the Wadi Hammamat, for example, has a remarkable number of first century Roman graffiti (Bernand 1972a) which are arranged among, over and around a series of Pharaonic expeditionary inscriptions that supplicate the god Min (Meyer 1999, 869). The range of formulae represented varies considerably, but some (although not many) directly address Pan (e.g., I.Ko.Ko. 38, an Augustan example) and others, which do not do so directly, are positioned around rough rock-hewn images of the ithyphallic god (Figure 10.4). These images of the god include roughly sketched depictions of the deity that are likely contemporary with the later inscriptions as well as much more sophisticated images which are part of the Pharaonic corpus. Min is not, however, the only

Figure 10.4 Graeco-Roman graffiti overlying Pharaonic inscriptions and images of Pan at the Paneion in the Wadi Hammamat.
Source: After Bernand 1972a, plate 18.1.

god present. Horus and Isis are also depicted, as are other kinds of sacred objects such as temple facades and offering tables.

In both cases, the proximity between the later inscriptions and these sacred items is a clear visual appropriation of the divine. Many inscriptions, like the one illustrated, overlie the image of Min himself and make direct claim to the potency of the figure and to the general sanctity of the location. Thus, it seems that despite the lack of an invocation to Pan in the Eastern Desert inscriptions of the Roman period, a direct *visual* connection was often made to the imagery of Pan/Min or to other sacred markings in the landscape. This linkage suggests that these travelers in the first and second centuries CE continued to participate in the creation of a space for cult activity, and to use these locations as a way to mediate their experiences in the desert.

Conclusion

The direct connection made with the imagery of the Pharaonic period or the reproduction of that imagery in later figural graffiti in the Wadi Hammamat is a potent reminder of the deep history marked in the desert landscape to which travelers of the Ptolemaic and Roman eras were responding, and of its complexity. Ptolemaic and Roman travelers were likely responding less to the detailed hieroglyphic formulae of the Seti temple at el-Kanais or the inscriptions of the Wadi Hammamat than to the *visual* cues that were part of the iconography of these spaces. While they were unlikely to be able to read the offering formulae on the walls of these monuments, they grasped the meaningfulness imparted to the place by the continued presence of these images, and they responded to those cues by making their own contributions and performing their own experience.

Ptolemaic and Roman-era responses to roads and roadways were mediated by awareness of an ancient presence in the landscape and reaction to it – an indirect cultural memory (Meskell 2003, 34; David and Wilson 2002a, 6) marked on the terrain as rock-hewn inscriptions created hundreds and, in some cases, thousands of years earlier. These inscriptions, and those added by later travelers, created a community holding in common remembered and imaginary experiences (Stewart and Strathern 2003, 1). This community of memory mediated the complex relationship of individuals with their environment which, although changing significantly over time, was closely tied to religious rituals. It reflects considerable continuity in the way that travelers were united by the common task of "making sense" of the desert landscape, and formulating their own place in it, one mediated by a well-marked and well-remembered path (Küchler 1993). This dynamic experiencing and active "re-visioning" of the landscape remained a constant throughout the changing political fortunes of Egypt.[8]

Notes

1 See Sidebotham and Zitterkopf 1995; Sidebotham 2001; 2002; Gates 2005; Heldal, Bloxam, and Storemyr 2007; J. Darnell 2002a; 2002b; 2002c; 2009; Storemyr et al. in press.

2 Bloxam and Storemyr (2002, 30) note that the closest comparable Old Kingdom structure is a 17 km long road leading from the Hatnub travertine quarries. It shows signs of wear, presumably from sledges being dragged along it. The Widan el-Faras road has no signs of wear.

3 See Tilley 1994; Ashmore and Knapp 1999; Feld and Basso 1996; Baker 2000; Van Dyke and Alcock 2003; Preucel and Meskell 2004; Holtorf and Williams 2006; Yoffee 2007; Shackel 2008.

4 The question of why the road courses diversify so noticeably in the Roman period remains to be answered. The increase in numbers of caravan parties in both deserts may be a factor. Concern about raiding by nomadic groups might also increase the tendency to deviate from a marked or heavily traveled path, although such a hypothesis remains pure speculation at this stage of inquiry.

5 See Meredith 1953, 1954; Bernand 1972a; De Romanis 1996; Adams 2007b; Cuvigny and Bülow-Jacobsen 1999; Cuvigny 2003.

6 The abandonment of the southern route to the Red Sea in the late Ptolemaic period, when the northern route to Koptos was developed as an alternative to the Edfu passage, is certainly a factor. This abrupt shift in practice is supported by archaeological survey in the region, which indicates that the Berenike–Koptos road was preferred from the late first century BCE (Gates 2005).

7 Strabo (17.1.53) also mentions the threat to Roman interests by nomadic groups in the Eastern Desert.

8 Thanks are due to Henry Wright, Sharon Herbert, Steve Sidebotham, and Willeke Wendrich, particularly for archaeological material from the surveys which they oversaw in the Eastern Desert. Colin Adams kindly provided an advance copy of his 2007 article. John Darnell and Per Storemyr shared a number of important references. Jen Ebbeler read and commented on an early draft of this essay, which expands and revises a paper presented at the Archaeological Institute of America's 2005 Annual Meeting.

References

CIL = *Corpus Inscriptionum Latinarum*

I.Ko.Ko.= Bernand, A. 1972. *De Koptos à Kosseir*. Leiden: Brill.

O.Krok. = Cuvigny, H. 2005. *Ostraca de Krokodilô. La correspondance militaire et sa circulation (O. Krok. 1–151)*. *Praesidia du désert de Bérénice* II (Fouilles de l'IFAO 51). Cairo: Institut Français d'Archéologie Orientale.

Adams, C. 2001. "'There and Back Again': Getting around in Roman Egypt." In C. Adams and R. Laurence, eds., *Travel and Geography in the Roman Empire*, 138–66. London: Routledge.

Adams, C. 2007a. *Land Transport in Roman Egypt*. Oxford: Oxford University Press.

Adams, C. 2007b. "Travel and the Perception of Space in the Eastern Desert of Egypt." In M. Rathmann, ed., *Wahrnehmung und Erfassung geographischer Räume in der Antike,* 211–66. Mainz am Rhein: Philipp von Zabern.

Allen, J. P. 2003. "The Ancient Egyptian Concept of the World." In O'Connor and Quirke, 23–30.

Alston, R. 1995. *Soldier and Society in Roman Egypt: A Social History*. London: Routledge.

Ashmore, W. and A. B. Knapp, eds. 1999. *Archaeologies of Landscape: Contemporary Perspectives*. Malden: Blackwell.

Aston, B. G., J. Harrell, and I. Shaw. 2000. "Stones." In P. Nicholson and I. Shaw, eds., *Ancient Egyptian Materials and Technology*, 5–77. Cambridge: Cambridge University Press.

Aufrère, S. H. 1998. "Religious Perceptions of the Mine in the Eastern Desert in Ptolemaic and Roman Times." In O. E. Kaper, ed., *Life on the Fringe: Living in the Southern Egyptian Deserts during the Roman and Early Byzantine Periods. Proceedings of a Colloquium Held on the Occasion of the 25th Anniversary of the Netherlands Institute for Archaeology and Arabic Studies in Cairo 9–12 December 1996*, 5–19. Leiden: CNWS Publications.

Bagnall, R. S., J. G. Manning, S. E. Sidebotham, and R. E. Zitterkopf. 1996. "A Ptolemaic Inscription from Bir 'Iayyan." *Chronique d'Égypte* 71: 317–30.

Bailey, D. M., ed., 1996. *Archaeological Research in Roman Egypt*. Journal of Roman Archaeology Supplementary Series. Ann Arbor: Thomson-Shore.

Baines, J. 2007. "Travel in Third and Second Millennium Egypt." In C. Adams and J. Roy, eds., *Travel, Geography and Culture in Ancient Greece, Egypt and the Near East*, 5–30. Oxford: Oxbow.

Baker, A. R. H. 2000. "Introduction: on Ideology and Landscape." In A. R. H. Baker and G. Biger, eds., *Ideology and Landscape in Historical Perspective*, 1–14. Cambridge: Cambridge University Press.

Barnard, H. and W. Z. Wendrich, eds., 2008. *The Archaeology of Mobility: Old World and New World Nomadism*. Berkeley: University of California Press.

Bernand, A. 1972a. *De Koptos à Kosseir*. Leiden: Brill.

Bernand, A. 1972b. *Le Paneion d'El-Kanaïs: les inscriptions grecques*. Leiden: Brill.

Bernand, A. 1977. *Pan du désert*. Leiden: Brill.

Bloxam, E. 2006. "Miners and Mistresses: Middle Kingdom Mining on the Margins." *Journal of Social Archaeology* 6: 277–303.

Bloxam, E. and P. Storemyr. 2002. "Old Kingdom Basalt Quarrying Activities at Wadi el-Faras, Northern Faiyum Desert." *Journal of Egyptian Archaeology* 88: 23–36.

Brand, P. J. 2000. *The Monuments of Seti*, I*: Epigraphic, Historical, and Art Historical Analysis* (Probleme der Ägyptologie 16). Leiden: Brill.

Burstein, S. M. 2008. "Trogodytes = Blemmyes = Beja? The Misuse of Ancient Ethnography." In Barnard and Wendrich, 250–63.

Colin, F. 1998. "Les Paneia d'El-Buwayb et du Ouadi Minayh sur la piste de Bérénice à Coptos: inscriptions égyptiennes." *Bulletin de l'Institut Français d'Archéologie Orientale* 98: 89–125.

Cuvigny, H., ed. 2003. *La Route de Myos Hormos*. Cairo: Institut Français d'Archéologie Orientale.

Cuvigny, H. and A. Bülow-Jacobsen. 1999. "Inscriptions rupestres vues et revues dans le désert de Bérénice." *Bulletin de l'Institut Français d'Archéologie Orientale* 99: 133–93.

Darnell, D. 2002. "Gravel of the Desert and Broken Pots in the Road: Ceramic Evidence from the Routes between the Nile and Kharga Oasis." In R. Friedman, ed., *Egypt and Nubia: Gifts of the Desert*, 156–77. London: British Museum Press.

Darnell, J. 1997. "New Inscriptions of the Late First Intermediate Period from the Theban Western Desert and the Beginnings of the Northern Expansion of the Eleventh Dynasty." *Journal of Near Eastern Studies* 56: 214–58.

Darnell, J. 2002a. "The Narrow Doors of the Desert: Ancient Egyptian Roads in the Theban Western Desert." In David and Wilson 2002a, 104–21.

Darnell, J. 2002b. *Theban Desert Road Survey in the Egyptian Western Desert*. Chicago: Oriental Institute.

Darnell, J. 2002c. "Opening the Narrow Doors of the Desert: Discoveries of the Theban Desert Road Survey." In R. Friedman, ed., *Egypt and Nubia: Gifts of the Desert*, 132–55. London: British Museum Press.

Darnell, J. 2009. "Iconographic Attraction, Iconographic Syntax, and Tableaux of Royal Ritual Power in the Pre- and Proto-Dynastic Rock Inscriptions of the Theban Western Desert." *Archéo-Nil* 19: 83–107.

David, B. and M. Wilson, eds. 2002a. *Inscribed Landscapes: Making and Marking Place*. Honolulu: University of Hawai'i Press.

David, B. and M. Wilson. 2002b. "Space of Resistance: Graffiti and Indigenous Place Markings in the Early European Contact Period of Northern Australia." In David and Wilson 2002a, 42–60.

De Romanis, F. 1996. "The Paneion at Wadi Menih." *TOPOI* 203–17 (Topoi Orient-Occident 6).

Dijkstra, J. 2008. *Philae and the End of Ancient Egyptian Religion: A Regional Study of Religious Transformation (298–642 CE)*. Leuven: Peeters.

Feld, S. and K. Basso, eds. 1996. *Senses of Place*. Santa Fe: School of American Research Press.

Gates, J. E. 2005. "Traveling the Desert Edge: The Ptolemaic Roadways and Regional Economy of Egypt's Eastern Desert in the Fourth through First Centuries BCE." PhD diss., University of Michigan, Ann Arbor.

Gates, J. E. 2006. "Hidden Passage: Graeco-Roman Roads in Egypt's Eastern Desert." In E. Robertson, J. Seibert, D. Fernandez, and M. Zender, eds., *Space and Spatial Analysis in Archaeology*, 315–22. Calgary: University of Calgary Press.

Gates-Foster, J. E., S. E. Sidebotham, and H. Wright, eds. forthcoming. *Archaeological Survey of the Berenike–Nile, Eastern Desert of Egypt, 1988–2003.*

Giveon, R. 1977. "Inscriptions of Sahur and Sesostris I from Wadi Kharig (Sinai)." *Bulletin of the American Schools of Oriental Research* 226: 61–3.

Harrell, J. and T. M. Bown. 1995. "An Old Kingdom Basalt Quarry at Widan el-Faras and the Quarry Road to Lake Moeris in the Faiyum." *Journal of the American Research Center in Egypt* 32: 71–91.

Harrell, J., et al. 2006. "The Ptolemaic to Early Roman Amethyst Quarry at Abu Diyeiba in Egypt's Eastern Desert." *Bulletin de l'Institut Français d'Archéologie Orientale* 106: 127–62.

Heldal, T. and P. Storemyr. 2003. *Chephren's Quarry, Upper Egypt: Archaeological Registration and Mapping of Ancient Quarry Sites.* Trondheim: Geological Survey of Norway.

Heldal, T., E. Bloxam, and P. Storemyr. 2007. "Unravelling Ancient Stone Quarry Landscapes in the Eastern Mediterranean: Three Egyptian Case Studies." In B. Ooghe and G. Verhoeven, eds., *Broadening Horizons: Multidisciplinary Approaches to Landscape Study*, 90–112. Newcastle: Cambridge Scholars Press.

Holtorf, C. and H. Williams. 2006. "Landscapes and Memories." In D. Hicks and M. Beaudry, eds., *The Cambridge Companion to Historical Archaeology*, 235–54. Cambridge: Cambridge University Press.

Kemp, B. 1989. *Ancient Egypt: Anatomy of a Civilization.* New York: TJ Press.

Klimkeit, H. J. 1975. "Spatial Orientation in Mythical Thinking as Exemplified in Ancient Egypt: Considerations toward a Geography of Religions." *History of Religions* 14.4: 266–81.

Küchler, S. 1993. "Landscape as Memory: The Mapping of Process and its Representation in a Melanesian Society." In B. Bender, ed., *Landscape: Politics and Perspectives*, 85–106. Oxford: Berg.

Lichtheim, M. 1978. *Ancient Egyptian Literature*, II: *The New Kingdom.* Berkeley: University of California Press.

Loprieno, A. 2003. "Travel and Fiction in Egyptian Literature." In O'Connor and Quirke, 31–52.

Maxfield, V. and D. P. S. Peacock. 2001. *The Roman Imperial Quarries: Survey and Excavations at Mons Porphyrites 1994–1998,* 1: *Topography and Quarries.* London: Egypt Exploration Society.

Meredith, D. 1953. "Annius Plocamus: Two Inscriptions from the Berenice Road." *Journal of Roman Studies* 43: 38–40.

Meredith, D. 1954. "Inscriptions from the Berenice Road." *Chronique d'Égypte* 29: 281–7.

Meskell, L. 2003. "Memory's Materiality: Ancestral Presence, Commemorative Practice and Disjunctive Locales." In Van Dyke and Alcock, 34–55.

Meskell, L. 2004. *Object Worlds in Ancient Egypt: Material Biographies Past and Present.* Oxford: Berg.

Meyer, C. 1999. "Wadi Hammamat." In K. Bard, ed., *The Encyclopedia of the Archaeology of Ancient Egypt*, 868–71. London: Routledge.

Murray, G. W. 1939. "The Road to Chephren's Quarries." *Geographical Journal* 94.2: 97–111.

O'Connor, D. and S. Quirke, eds. 2003. *Mysterious Lands.* London: UCL Press.

Parcak, S. 2004. "Finding New Archaeological Sites in Egypt Using Satellite Remote Sensing: Case Studies from Middle Egypt and the Delta." In C. Wang, ed., *International Conference on Remote Sensing Archaeology,* 136–40. Beijing: Chinese Center for Remote Sensing Archaeology.

Partridge, R. B. 2010. "Transport in Ancient Egypt." In A. Lloyd, ed., *A Companion to Ancient Egypt*, 370–89. Malden: Wiley-Blackwell.

Peacock, D. P. S. and V. Maxfield. 1997. *Mons Claudianus 1987–1993: Survey and Excavation.* Cairo: Institut Français d'Archéologie Orientale.

Peacock, D. P. S. and V. Maxfield. 2007. *The Roman Imperial Quarries: The Excavations – Survey and Excavation at Mons Porphyrites 1994–1998,* 2: *The Excavations.* London: Egypt Exploration Society.

Peden, A. J. 2001. *The Graffiti of Pharaonic Egypt: Scope and Roles of Informal Writings (c. 3100–332 B.C.).* Leiden: Brill.

Poidebard, A. 1934. *La Trace de Rome dans le Désert de Syrie* (Bibliothèque Archéologique et Historique 18). Paris: Libraire Orientaliste Paul Geuthner.

Preucel, R. W. and L. Meskell. 2004. "Places." In R. W. Preucel and L. Meskell, eds., *A Companion to Social Archaeology*, 215–29. Malden: Blackwell.

Redford, S. and D. Redford. 1989. "Graffiti and Petroglyphs Old and New from the Eastern Desert." *Journal of the American Research Center in Egypt* 26: 3–49.

Richards, J. E. 1999. "Conceptual Landscapes in the Egyptian Nile Valley." In Ashmore and Knapp, 83–100.

Rutherford, I. 2003. "Pilgrimage in Greco-Roman Egypt: New Perspectives on Graffiti from the Memnaion at Abydos." In R. Matthews and C. Roemer, eds., *Ancient Perspectives on Egypt*, 171–90. London: UCL Press.

Shackel, P. 2008. "Memory Studies in Historical Archaeology." *SAA Archaeological Record* 8.1: 10–12.

Shaw, I. 1994. "Pharaonic Quarrying and Mining: Settlement and Procurement in Egypt's Marginal Regions." *Antiquity* 68: 108–19.

Shaw, I. 1998. "Exploiting the Desert Frontier: the Logistics and Politics of Ancient Egyptian Mining Expeditions." In A. B. Knapp, V. C. Pigott, and E. W. Herbert, eds., *The Archaeology and Anthropology of Mining*, 242–58. London: Routledge.

Shaw, I., et al. 2001. "Survey and Excavation at the Gebel el-Asr Gneiss and Quartz Quarries in Lower Nubia (1997–2000)." *Antiquity* 75: 33–34.

Sidebotham, S. E. 2001. "Marsa Nakari-Nile Road Survey." Unpublished manuscript, Newark.

Sidebotham, S. E. 2002. "From Berenike to Koptos: Recent Results of the Desert Route Survey." *Topoi* suppl. 3: 415–38.

Sidebotham, S. E. and W. Z. Wendrich. 2001–2. "Archaeological Fieldwork at a Ptolemaic-Roman Port on the Red Sea Coast of Egypt, 1999–2001." *Sahara* 13: 23–50.

Sidebotham, S. E. and R. E. Zitterkopf. 1995. "Routes through the Eastern Desert of Egypt." *Expedition* 37.2: 39–52.

Sidebotham, S. E. and I. Zych. 2010. "Berenike: Archaeological Fieldwork at a Ptolemaic-Roman Port on the Red Sea Coast of Egypt 2008–2010." *Sahara* 21: 7–28.

Sidebotham, S. E., R. E. Zitterkopf, and C. Helms. 2000. "Survey of the Via Hadriana: The 1998 Season." *Journal of the American Research Center in Egypt* 37: 115–26.

Sidebotham, S. E., G. Mikhail, J. Harrell, and R. Bagnall. 2004. "A Water Temple at Bir Abu Safa (Eastern Desert)." *Journal of the American Research Center in Egypt* 41: 149–59.

Sidebotham, S. E., M. Hense, and H. Nouwens. 2008. *The Red Land: The Illustrated Archaeology of Egypt's Eastern Desert.* Cairo: American University in Cairo Press.

Snead, J. E. 2008. *Ancestral Landscapes of the Pueblo World.* Tucson: University of Arizona Press.

Snead, J. E., C. L. Erickson, and J. A. Darling. 2009a. "Making Human Space: Archaeology of Trails, Paths and Roads." In Snead, Erickson, and Darling 2009b, 1–19.

Snead, J. E., C. L. Erickson, and J. A. Darling, eds. 2009b. *Landscapes of Movement: Trails, Paths and Roads in Anthropological Perspective.* Philadelphia, PA: University of Philadelphia Press.

Stewart, P. J. and A. Strathern. 2003. "Introduction." In P. J. Stewart and A. Strathern, eds., *Landscape, Memory and History: An Anthropological Perspective*, 1–14. London: Pluto Press.

Storemyr, P., E. Bloxam, T. Heldal, and A. Kelany. In press. "Ancient Desert and Quarry Roads on the West Bank of the Nile in the First Cataract Region." In H. Riemer and F. Förster, eds., *Desert Road Archaeology in the Eastern Sahara.*

Tilley, C. 1994. *A Phenomenology of Landscape: Places, Paths and Monuments.* Oxford: Berg.

Trombold, C. D., ed., 1991. *Ancient Road Networks and Settlement Hierarchies in the New World.* Cambridge: Cambridge University Press.

Van Dyke, R. and S. E. Alcock, eds., 2003. *Archaeologies of Memory.* Malden: Blackwell.

Vittmann, G. 1999. *Altägyptische Wegmetaphorik* (Beiträge zur Ägyptologie 15). Vienna: Institut für Afrikanistik und Ägyptologie.

Wendrich, W. Z. and H. Barnard. 2008. "The Archaeology of Mobility: Definitions and Research Approaches." In Barnard and Wendrich, 1–21.

Winkler, H. A. 1938. *Rock-Drawings of Southern Upper Egypt*, vol. 1. London: Oxford University Press.

Yoffee, N., ed. 2007. *Negotiating the Past in the Past: Identity, Memory and Landscape in Archaeological Research.* Tucson: University of Arizona Press.

Yoyotte, J. 1952. "Une épithète de Min comme explorateur des régions orientales." *Revue d'Égyptologie* 9: 125–37.

11

Roads, Integration, Connectivity, and Economic Performance in the Roman Empire

R. Bruce Hitchner

Can it be demonstrated that the Roman road infrastructure, as a static technology, produced a substantial improvement in the velocity and dissemination of goods, services, and information under the empire by comparison, say, with the pre- and post-Roman periods? This is not an easy question to answer because, as modern development economists have discovered, establishing a clear linkage between transport infrastructure and, say, economic performance can be elusive.[1] First, there is no way to measure precisely the goods and services carried by a transport network nor the physical depreciation resulting from such usage. Second, the benefits derived from the use of a road network are of necessity qualitative and thus difficult to measure quantitatively. It is also hard to demonstrate whether the investment in transport infrastructure is a stimulant to economic growth and socio-cultural integration, or the reverse, though a positive relationship between the two variables is likely (Njoh 2000). In any case, in this paper I wish to offer initially some general empirical observations about the potential of Roman roads to serve as a proxy indicator of growth, and to follow up with two brief case studies from Gaul and Africa.

The Benefits of Roman Roads: General Observations

Contemporaries, even those not favorably inclined to Roman rule, were impressed by Rome's massive investment in road- and bridge-building, extending to an estimated 100,000 km.[2] Admiration for the quality and extent of Roman roads and,

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

significantly, for their continuing benefit for communication has not been restricted to antiquity. In France, for example, much of the network was still in active use until the advent of the railroad. "Some Roman roads had been marked on maps since the seventeenth century, not for antiquarian interest, but because they were the best roads available" (Robb 2007, 221–2). Long stretches of Roman roads or tracks continued to be employed from Arles to Aix, Clermont-Ferrand to Limoges, Arcachon to Bordeaux, Saintes to Poitiers, along the left bank of the Lot River, and elsewhere. Almost all the contemporary "draies," or pastoral track-ways, in the Crau plain still follow built-up Roman tracks. As the Marquis de Mirabeau observed in 1756, "Roman roads had been built for eternity while a typical French road could be wrecked within a year by a moderate-sized colony of moles." Again according to him, a stretch of the Roman road from Besançon to Langres was "so complete and solid … the weight and movement of carriages made no impression on it" (Robb 2007, 222). The quality of Roman construction is also reflected in the terms used by the French to describe their roads: *camin ferrat* or *chemin ferré* (paved road). They were also sometimes called the *chemin de César* or *chemin du Diable*, as it was believed that only Caesar or the devil could build roads capable of lasting so long. Further comments of this sort from early modern European sources could be cited, but the point should be clear.

For all the network's scale and physical impressiveness, not to mention the mass of scholarship devoted to describing and mapping it and appreciating its cost and technical mastery, there has been remarkably little empirical work on its economic and socio-cultural impact. The best that can be said is that most historians and archaeologists assume a positive effect in both respects. Even Raymond Chevallier declared that while "there is no doubt about the connection between the state of the roads and the level of economic activity," he would not pursue this subject further, "for it would mean re-assessing the whole of Roman economic history in relation to Roman roads" (1976, 204).

Any attempt at such an assessment would naturally have to begin with the roads themselves. Here a problem immediately arises, because of the need to define the term "Roman road." Strictly speaking, many trunk roads, if not most, and certainly many secondary roads active in the Roman period, were continuations of early routes dating in some cases as far back as the prehistoric period. Yet under the empire the Roman state and local municipalities also built many new roads that created entirely fresh communications networks. Ultimately, what makes a road Roman for the purposes of economic assessment is evidence of its construction or regular use and repair in the long Roman period. Moreover, all such roads, from the smallest track-way to the great trunk roads, combined to form a single complex network that was unparalleled either in the ancient world or in the history of western Eurasia and North Africa down to the nineteenth century CE.[3]

That said, if the entire network had been comprised of roads that could be wrecked (as the Marquis de Mirabeau noted) "within a year by a moderate-sized colony of moles," it would have amounted to little in economic terms. Indeed, what stands out for our purposes is the degree to which the Roman state took an interest in constructing trunk roads, and even some secondary ones, capable of sustaining year-round wheeled traffic weighing as much as 1,500 Roman pounds per vehicle by law, irrespective of distance and environment.[4] While it is important to recognize that the primary purpose of Roman roads was for state and military functions, this load- and wheel-bearing standard of construction allowed it to transcend this limited purpose. Building roads of such durability at the apex of the network appears to have made the use of wheeled vehicles ubiquitous in many parts of the empire, apart from Egypt where little is known about road maintenance (Rathbone 2007). The point is significant, because economies dependent on wheeled vehicles have historically demonstrated more and faster movement of goods and services and by extension more productivity, more resources, and ultimately more choice and more freedom to move and to choose.[5] In the late first century CE, the poet Statius (*Silvae* 4.4) tells us as much anecdotally, when he praises the upgrading of an old unpaved road between Sinuessa and Cumae for the noticeable improvement it made in the speed of travel by carriage from Rome to Cumae (Laurence 1999, 90–3).

The powerful economic effect of paved roads is also manifested in the archaeological and epigraphic record for the reign of Augustus, for example, when the cutting of high-quality roads and the construction of stations in the Alpine passes substantially eased travel through the high mountains for the first time. The road network here not only improved communications between Italy and the European provinces but also contributed to the emergence of transport companies, such as the *splendidissimum corpus mercatorum Cisalpinorum et Transalpinorum*, which contracted with the army and private individuals to transport large volumes of goods by animal and cart through the Alpine passes. The fact that it came to establish offices as far apart as Rennes, Cologne, and Budapest gives some sense of the importance, scale and scope that transalpine trade gained (Walser 1989; Leveau 2003a).

It is virtually a cliché among historians and archaeologists that land transport was more costly than waterborne commerce and that the construction of Roman roads must have been a severe financial drain. But it must equally be said that there is no general algorithm suitable for calculating costs or benefits for transport in all circumstances. The fact is that under Roman rule a large number of surfaced roads did not lose their quality as they covered more miles, as has often proved the case with long-distance road building in pre-industrial societies. Rather, the Roman state and even local municipalities seemed to have understood that, on land no less than on water, transportation is a value-based transaction involving friction or tension between the advantage gained and the cost involved. Poor roads and bridges, as well as unregulated cartage, loads, and animals, significantly increased time, effort, and expense in terms of transport. Where such conditions existed in both static and dynamic technologies, shorter distance routes were the rule, as many of the local itineraries in the Antonine Itinerary suggest. Good roads, on the other hand, capable of sustaining wheeled traffic within specified legal ranges for weight and load, sufficiently offset the frictions posed by distance and environment to make investment in their construction and maintenance worthwhile. Indeed, the Roman state undertook to deal with the most challenging of such frictions by investing in facilities along roadways – stopping-points in particular (*mansiones* and *mutationes*, *vici* and *fora*), which provided fodder, shelter, and animals. These were quite often new settlements that generated previously non-existent opportunities for agricultural, artisanal, and industrial investment. This type of development was not restricted to the great trunk roads but extended outward along secondary ones as well (Leveau 2003a, 329–30; 2003b).

It goes without saying that the road system was likewise fundamental in the extensive settlement and development of rural landscapes throughout the empire. In this regard, the importance of roads in promoting urbanism is not always sufficiently appreciated. This failure is in part a consequence of the quite understandable emphasis placed by the itineraries and other sources on defining communication networks primarily in terms of connection from town to town. Yet it must not be forgotten that people migrated and traveled to the new towns and settlements in large part because of the ease of movement provided by good, well-maintained roads. Many smaller towns, particularly in the western provinces, owed their origins to the construction and convergence of new roads. Such migration certainly explains the physical growth of metropolises such as Roman Carthage and other major communities along the main trunk roads of Africa, particularly further south, and this pattern was replicated wherever new roads were built. Roads brought people into towns and made it impossible to ignore market conditions.[6] And while roads undoubtedly increased the scale and effectiveness of tax collection, they also made money more accessible and the transaction of business and economies of scale that much greater. The economic effect will have been cumulative. Even so, such improvements were not cost-free.

The weakest links in any pre-modern road network were invariably the locations where waterways had to be crossed. Rivers, including those which only carried water in the winter months, were hazardous even in their most placid conditions, and fords were generally rare and best crossed at low water. In response, the Roman state financed or encouraged investment in high-quality bridge-building, signaling thereby its commitment to roads as a more efficient and reliable mode of transport than water.[7] However, the construction of high-quality roads and bridges would have counted for little in economic terms had they not been kept in regular repair. Both Rome and local municipalities were alive to the importance of this need, especially along the main trunk roads. Some indication of the ongoing investment in road maintenance can be inferred from the fact that it is often difficult to find milestones mentioning repair that pre-date the latest such initiative. Most known stretches of paving are often the final surface surviving from antiquity, even though we are aware from other indices that many public roads were constructed in the earliest phase of a province's history. More generally, studies of milestones suggest the regular repair of trunk roads from the first through fourth centuries in many parts of the empire. In Italy, for example, such work occurred mainly during the first, second, and fourth centuries; in Gaul, Germany, and Africa during the third and early fourth centuries; and in Asia from the second through the early fifth (Salama 1987; Laurence 2004). Indeed, it is the continued maintenance of the road network as a fixed legacy system that is probably the most telling indicator of its fundamental importance to the infrastructure of the Roman economy. It might even be hazarded that this continued maintenance has greater significance as a sign of the lasting vitality of the economy than the more often cited record of municipal building and investment by local aristocrats. Altogether, therefore, a plausible argument can be made that, from a strictly technical and engineering standpoint, Roman roads annihilated distance to an unprecedented degree in antiquity, and in so doing enhanced the efficiency, speed and volume with which people and goods were transported from place to place across the Mediterranean region and beyond.

Case Studies

Turning now from the general to the specific, I present two regional case studies, one from eastern Gaul, the other from the interior of North Africa. Both, I believe, illustrate how provincial communities were connected for the first time to the larger world of the empire by the road system, and how this connectivity stimulated local economy and culture.[8]

My first case study is from the *civitas* or territory of the Gallic people known as the Vocontii, which extended from the Rhone to the eastern Alps (Figure 11.1). Apart from Marseilles, the Vocontii were the only Gallic community to have entered into a formal alliance with Rome during the period of Caesar's conquest. Under the empire Vocontian territory contained two major centers or "capitals," Vaison (*Vasio*) and Luc (*Lucus Augusti*), as well as two larger towns, Sisteron (*Segustero*) and Die (*Dea Augusta*) (Segard 2008). Vaison, the first city listed in Pomponius Mela's (2.74) catalog of the *urbes opulentissimae* of Gallia Narbonensis, had several baths, a theater, and a number of sumptuous urban villas. Luc was perhaps an imperial cult center, as its Latin name *Lucus Augusti* implies. Although few vestiges of the ancient city survive, they include at least two suburban villas, remnants of an aqueduct, inscriptions, and traces of a circuit wall. Die, which later achieved the rank of *colonia*, has likewise yielded numerous inscriptions, two aqueducts, and a theater or amphitheater, among other finds. The region also contained a number of small centers (*vici*) and villas, including the massive villa and cult center at La Bâtie Montesaléon, the ancient Mons Seleucus mentioned in both the Antonine and Bordeaux Itineraries, and the site of the battle between the usurper Magnentius and the emperor Constantius in 353. Pliny the Elder (*Natural History* 14.83) informs us that the Vocontii produced a famous sweet wine that may have derived from Vaison, although a small wine press and architectural allusions to wine production have also been found at La Bâtie Montesaléon.

The territory of the Vocontii was thus a reasonably prosperous region in the Roman period. By contrast, in the late eighteenth century the situation was very different. Various accounts of the Drôme, the modern French name for the region,

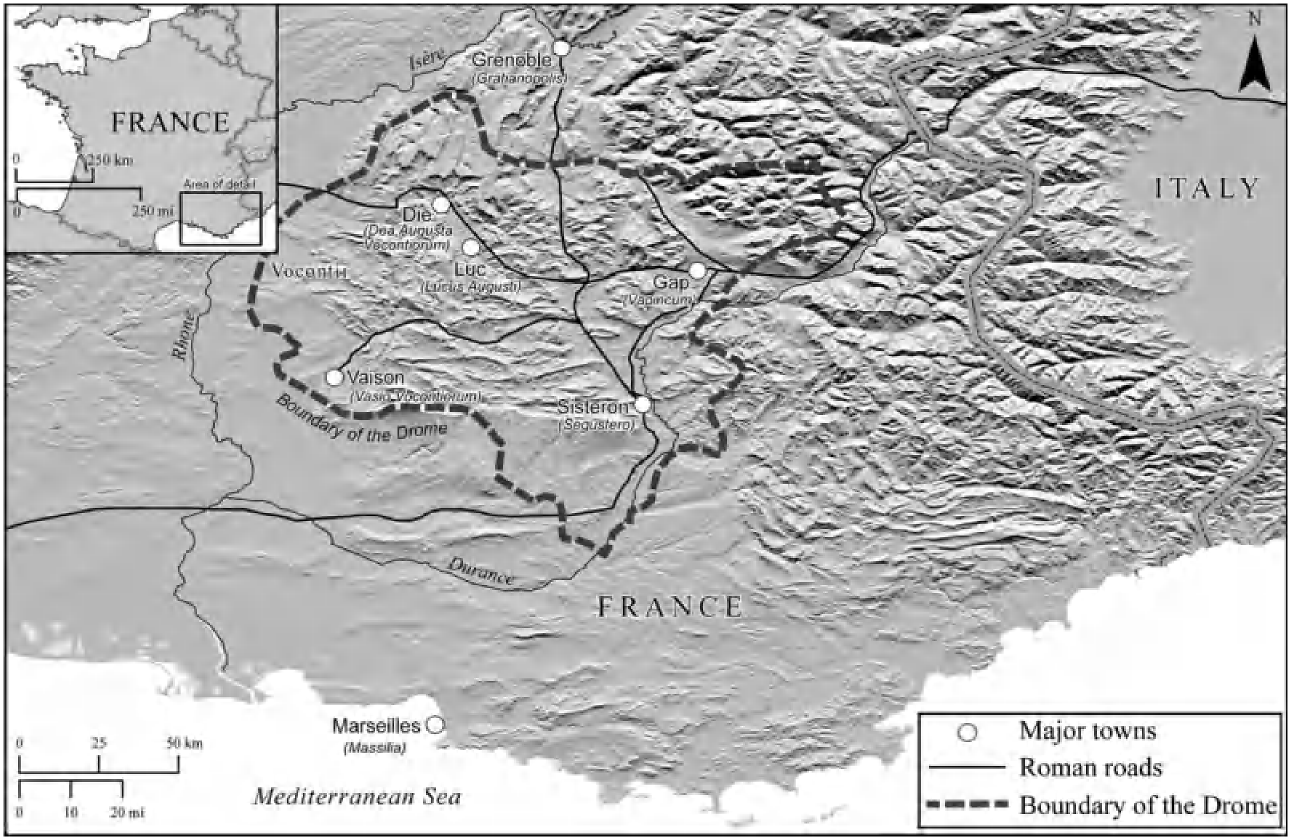


Figure 11.1 Territory of the Vocontii showing main roads and urban centers.

describe it as "one of the poorest and most desolate regions in France," and a "waste land." "Almost everywhere," the early twentieth-century geographer Edouard Sauvan reports, "the region … presented itself as a world divided into numerous isolated compartments" (1921, 531). The rural economy in the eighteenth century was autarkic, depending chiefly on low yields of grain and barley and high-mountain pastoralism. Such conditions, with the constant threat of starvation, compelled the rural poor to migrate to the towns in winter.

What accounts for the differences between the Roman period and the late eighteenth century? The answer is simple: good roads. Under the empire, the Vocontian territory was connected by three major roads to Italy, the interior of Gaul, and the German and Danubian frontiers to the north. The main east–west trunk road, which was likely built under Augustus, was well maintained to judge by the fact that all eight milestones found along it date from the fourth century (Rivet 1988, 292). In 1789, by contrast, the region's poverty and underdevelopment were due to the absence of such high-quality roads, those that existed being no more than mule tracks frequently cut by flooding and by avalanches at the upper elevations. As one local described it, there was "no means of exportation in this land deprived of roads. … The apples and the pears are eaten by the pigs" (Sauvan 1921, 558). Nevertheless, there was a widespread recognition that the construction of good roads connecting the Drôme to Provence, the Rhone Valley, and east and north to Embrun and Briançon and to Grenoble, would stimulate greater investment in agriculture. Precisely this was the outcome from the 1840s when the first new high-quality roads were built (along the lines of the earlier Roman roads), and then again after 1880 when further lines of communication and a rail link were added. As Eugen Weber observed,

> Once roads and railroads breached the mountains and connected this "cell of the French Alps" to the life that flowed some miles away, past the Drôme gorges in the Rhone valley's plains, buyers appeared for cattle, lavender, and in due course fruit from newly developed orchards. (1976, 207)

Roman roads had a similar impact in the high steppe of Africa Proconsularis (Figure 11.2). Here they connected the main Roman towns of Thelepte, Sufetula, and Cillium to one another, as well as to the eastern coast of the province with its many ports. All three communities show evidence of substantial Roman-style urban development in the second and third centuries CE. Rural agricultural settlement kept pace with the growth of the towns over time. Most of the farms and villas in the countryside contained multiple presses of highly efficient and standardized design, as well as very substantial stockyards. Over 350 presses are known, and at least two to three times as many probably existed in the Roman period. The volume of oil produced in this region ran into the millions of hectoliters per year, which was far beyond the requirements of the local cities.[9] Much of the surplus oil found its way – in a classic example of comparative economic advantage and complementarity – to the coast and the larger Mediterranean market, as well as to the

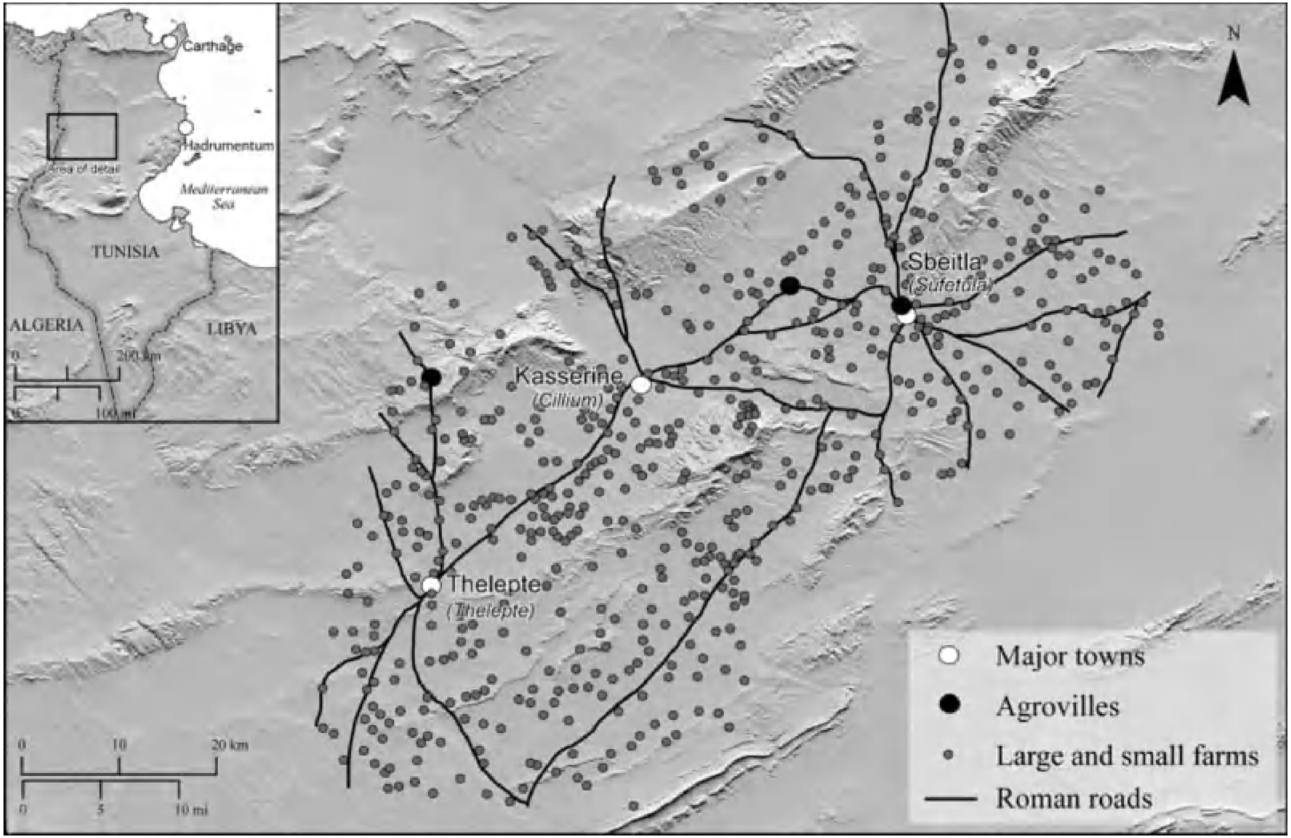


Figure 11.2 The high steppe in Tunisia showing main roads, olive farms, and urban centers.
Source: After Mattingly 1988.

army in the south perhaps, via a well maintained infrastructure of roads capable of handling heavy wheeled vehicles. This included seven roads funneling out from Sufetula, five from Cillium, and six from Thelepte. The high quality of the roads is lucidly demonstrated in a study of the one linking Sufetula via Masclianae to Hadrumetum on the east coast of Tunisia (Barbery and Dalhoume 1982). Here, the roadbed combined blocks of cement and limestone 5–6 m wide with well-preserved stone-curbing up to 60 cm wide. Milestones indicating regular maintenance through the third and fourth centuries have been found along this road as well as others linking Sufetula, Cillium, and Thelepte (Salama 1987).

In sum, it was not just the newly founded Roman cities of the High Steppe that account for the region's massive investment in oil and other goods and their production, but also the great roads which linked the olive-producing farms of this semi-arid region to the markets of the empire and the African military frontier to the south. On present evidence, it is difficult to say whether it was the boom in olive cultivation and large-scale stockraising that stimulated the construction of the roads, or vice versa (though some of the roads clearly follow earlier routes). Even so, the care and attention given to these African roads under the empire is an unequivocal reflection of their importance to the highly specialized production of mass-market olive oil and foodstuffs in this otherwise marginal agricultural environment.

The Global Impact of Roman Roads: A Provisional Assessment

Similar examples could be found from other parts of the empire: southern Spain, northern Italy, central Asia Minor, and the east come quickly to mind in this regard (Sillières 1982; Laurence 1999; Mitchell 1993; Alcock 2007). But as these two particular case studies demonstrate, one of the primary effects of the Roman road system was to lift provincial societies and economies out of their deeply localized and autarkic dependence and to resituate them within the broader economic and cosmopolitan world of the *imperium romanum*. By comparison with communications in the contemporary world, the pace at which this shift occurred was certainly glacial. By ancient and later medieval norms, however, Roman roads must have stimulated a considerable acceleration and intensification of connectivity across the Mediterranean and Europe (Alcock 2007, 690). As we have seen, the process manifested itself in the creation of new types of settlement alongside pre-existing local towns and villages and in the increased flow of goods, materials, capital, and people from region to region and across the empire. It is also apparent, though in a much more anecdotal way, in the documentary evidence for heavy circulation along the roads. While much of this movement involved official travel, and in particular the transport of agricultural goods for state and private purposes, we also hear of the ease of human traffic and of the congestion on roadways caused by merchants, peddlers, travelers to festivals, architects and craftsmen, lawyers and litigants, pilgrims, couriers, students, and, later, Christian clergy (Salama 1987, 66–7 with reference to Africa; Woolf 1997, 9–11).

Human interactions along roads may have taken on a more fleeting, temporary and ephemeral quality as people moved more easily and rapidly across vast swaths of space than ever before. Nonetheless, the experience of so many "passing through" mixed the local and global in new ways, giving rise to a new or intensified consciousness of the world. In the process, provincial communities did not necessarily lose their own sense of identity or become culturally and materially overwhelmed by the economic activity generated by the roads. Rather, they were furnished, I suggest, with a tool-kit of new global knowledge and materials which surpassed anything acquired previously. In essence, the medium of roads helped them to frame their identity in new and more complex ways which blurred the boundaries between what constituted local, as opposed to, Roman global culture.

An especially vivid example of this change may be found at Autun (ancient *Augustodunum*) in central Gaul. In the late third century CE, a large wall map of the Roman world, "a picture of the world," graced the porticoes of the famous school there. The map, we are told, permitted "young men to see and contemplate daily every land and all the seas," as well as "the sites of all locations with their names, their extent, and the distances between them, the sources and terminations of all the rivers, the curves of all the shores, and the Ocean, both where its circuit girds the earth and where its pressure breaks into it." The map was regularly updated "as eager messengers constantly arrive with news from all over the empire. Not only students but the public gazing upon these places will see the entirety of the empire in the words arriving with the messengers."[10] Here we can see most vividly how roads allowed distant knowledge and events to be brought with relative rapidity to expectant audiences in ways that mirror the manner in which news of the world was brought to remote towns and villages by road and rail in nineteenth-century Europe and North America. To be sure, the advantage of well-maintained and heavily used trunk roads could also have the counter-effect of driving away trade and contact from roads and pathways far removed from them, leaving some communities and people more isolated than before. This pattern is perhaps tellingly exposed, albeit in a very gross fashion, in the marked drop-off in inscriptions, building activity, and trade goods in parts of Gaul not connected to the great trunk roads. But such a phenomenon would not be unique to the Roman world, as the impact of the high-speed TGV rail service in France today has plainly shown.

By the second century, then, the Roman Empire was no longer a world to be discovered, secured, explored, and described – thanks in large measure to its vast network of roads. Instead, as the itineraries, the Peutinger Map, the Price Edict of Diocletian and the *Expositio Totius Mundi* all make clear (Graham 2006), it had become an increasingly interconnected and better known world. Documents such as the Bordeaux Itinerary demonstrate familiarity with the many well maintained roads that crisscrossed the empire; they also fed a growing appetite for the consumption of distant places, in this case Christian sites of pilgrimage. Travel and the description of the people and places of the empire may have begun in earnest with Strabo in the reign of Augustus, but as more roads cut through more territory and more goods and ideas passed along them, they became pathways for the many, not just the few. Taken in their totality, the roads nourished an imagined body politic that transcended the purely local, creating in the process an empire which bore all the hallmarks of an early and sustained globalization (Hitchner 2008).

Notes

1 See Njoh 2000; Harmatuck 1996; Gillen 1996; Gramlich 1994.
2 See Dionysius of Halicarnassus, *Roman Antiquities* 3.67.5; Aelius Aristides, *To Rome* 101; Kissel 2002, 127–8. For rabbinical comments, note Feldman 1992.
3 In making this claim, I am sensitive to Leveau 2007, 663–5, who cautions against exaggerating the scope of the Roman road system because modern maps of it fail to take into account that many roads went out of use to be replaced by others, and that interior waterways continued to be important in many provinces; the Romans also invested in canal building. My emphasis here, however, is on the assessment of the impact of roads in particular.
4 The fifth-century *Theodosian Code* mentions three weight-categories of wheeled vehicles: *birotae* drawn by three mules and limited to a maximum carrying-weight of 90 kg; *raedae* drawn by eight mules in summer and ten in winter, limited to 450 kg maximum; *angariae* drawn by two pairs of oxen and limited to 675 kg maximum (= 1,500 Roman pounds). See *CTh* 8.5.8, 8.5.11, 8.5.17; Peña 1998, 163–4.
5 However, so long as animals remained the prime means of transport, it would not be profitable to grow commercial crops such as olive oil or fruits for export.
6 On the other hand, good roads and new, larger towns could generate excessive demand for rural produce, leading to the impoverishment of the countryside.
7 O'Connor 1994; Harris 2000; Kissel 2002; Pekáry 1968; Hitchner 2009.
8 The two studies selected here can readily be matched by others: see, for example, Sillières 1992 for Baetica and Lusitania; Kissel 2003 for southern Syria.
9 Mattingly 1988; Hitchner 1988; 1989; 1993; Hitchner et al. 1990.
10 *Panegyrici Latini* 9.20-1; Graham 2006, 51–2.

References

Alcock, S. 2007. "The Eastern Mediterranean." In Scheidel 2007, 671–97.
Barbery, J. and J.-P. Delhoume. 1982. "La voie romaine de piedmont Sufetula-Masclianae (Djebel Mrhila, Tunisie centrale)." *Antiquités Africaines* 18: 27–43.
Chevallier, R. 1976. *Roman Roads*, trans. N. H. Field. Berkeley: University of California Press.
Feldman, L. H. 1992. "Some Observations on Rabbinic Reaction to Roman Rule in Third Century Palestine." *Hebrew Union College Annual* 63: 39–81.
Gillen, D. W. 1996. "Transportation Infrastructure and Economic Development: A Review of Recent Literature." *Logistics and Transportation Review* 32.1: 39–62.
Graham, M. W. 2006. *News and Frontier Consciousness in the Late Roman Empire*. Ann Arbor: University of Michigan Press.

Gramlich, E. M. 1994. “Infrastructure Investment: A Review-Essay.” *Journal of Economic Literature* 32: 1176–96.

Harmatuck, D. 1996. “The Influence of Transportation Infrastructure on Economic Development.” *Logistics and Transportation Review* 32.1: 63–76.

Harris W. V. 2000. “Trade.” In A. K. Bowman et al., eds., *The Cambridge Ancient History*, XI. *The High Empire, A.D. 70–192*, 710–40. Cambridge: Cambridge University Press.

Hitchner, R. B. 1988. “The Kasserine Archaeological Survey: 1982–86.” *Antiquités Africaines* 24: 7–41.

Hitchner, R. B. 1989. “The Organization of Rural Settlement in the Cillium-Thelepte Region (Kasserine, Central Tunisia).” *L’Africa Romana* 6: 387–402.

Hitchner, R. B. 1993. “Olive Production and the Roman Economy: The Case for Intensive Growth.” In M.-C. Amouretti and J.-P. Brun, eds., *La production du vin et de l’huile en Méditerranée*, 499–503 (Bulletin de Correspondance Héllenique Suppl. 26). Athens. Repr. 2002 in W. Scheidel and S. von Reden, eds., *The Ancient Economy*, 71–83. Edinburgh: Edinburgh University Press.

Hitchner, R. B. 2008. “Globalization Avant la Lettre: Globalization and the History of the Roman Empire.” *New Global Studies* 2.2: Art. 2, www.bepress.com/ngs/vol2/iss2/art2.

Hitchner, R. B. 2009. “The Mediterranean and the History of Antiquity.” In A. Erskine, ed., *A Companion to Ancient History*, 429–35. Oxford: Blackwell.

Hitchner, R. B. et al. 1990. “The Kasserine Archaeological Survey: 1987.” *Antiquités Africaines* 26: 231–60.

Kissel, T. 2002. “Road-Building as a Munus Publicum.” In P. Erdkamp, ed., *The Roman Army and the Economy*, 127–60. Amsterdam: Gieben.

Kissel, T. 2003. “Lokale Identität und imperiale Herrschaft. Römische Straßen in Arabien als Wegbereiter von Akkulturationsprozessen.” In L. Schumacher and O. Stoll, eds., *Sprache und Kultur in der kaiserlichen Provinz Arabia. Althistorische Beiträge zur Erforschung von Akkulturationsphänomenen im römischen Nahen Osten*, 12–69 (Mainzer Althistorische Studien 4). St. Katharinen: Scripta Mercaturae.

Laurence, R. 1999. *The Roads of Roman Italy*. London and New York: Routledge.

Laurence, R. 2004. “Milestones, Communication, and Political Stability.” In L. Ellis and F. L. Kidner, eds., *Travel, Communication and Geography in Late Antiquity*, 38–49. Aldershot: Ashgate.

Leveau, P. 2003a. “Inégalités régionales et développement économique dans l’Occident romain (Gaules, Afrique et Hispanie).” In J.-P. Bost et al., eds., *Itinéraire de Saintes à Dougga. Mélanges offerts à Louis Maurin*, 327–53. Bordeaux: Ausonius.

Leveau, P. 2003b. “La période romaine dans les Alpes occidentales. Un bilan des recherches.” In G. Boëtsch et al., eds., *Permanence et changements dans les sociétés alpines*, 31–56. Edisud: Aix-en-Provence.

Leveau, P. 2007. “The Western Provinces.” In Scheidel 2007, 651–70.

Mattingly, D. J. 1988. “Oil for Export? A Comparison of Libyan, Spanish and Tunisian Olive Oil Production in the Roman Empire.” *Journal of Roman Archaeology* 1: 33–56.

Mitchell, S. 1993. *Anatolia: Land, Men, and Gods in Asia Minor: The Celts and the Impact of Rome*, vol. 1. Oxford: Oxford University Press.

Njoh, A. J. 2000. “Transportation Infrastructure and Economic Development in Subsaharan Africa.” *Public Works Management & Policy* 4.4: 286–96.

O’Connor, C. 1994. *Roman Bridges*. Cambridge: Cambridge University Press.

Pekáry, T. 1968. *Untersuchungen zu den römischen Reichsstrassen* (Antiquitas R. I, Bd. 17). Bonn: Habelt.

Peña, J. T. 1998. "The Mobilization of State Olive Oil in Roman Africa: The Evidence of Late 4th-c. *Ostraca* from Carthage." In J. T. Peña et al., *Carthage Papers: The Early Colony's Economy, Water Supply, a Public Bath, and the Mobilization of State Olive Oil*, 116–238 (*Journal of Roman Archaeology*, suppl. 28). Portsmouth, RI.

Rathbone, D. 2007. "Roman Egypt." In Scheidel 2007, 698–719.

Rivet, A. L. F. 1988. *Gallia Narbonensis. Southern Gaul in Roman Times.* London: Batsford.

Robb, G. 2007. *The Discovery of France: A Historical Geography from the Revolution to the First World War*. New York and London: Norton.

Salama, P. 1987. *Bornes milliaires d'Afrique proconsulaire. Un panorama historique du bas-empire romain*. Rome: Ecole Française de Rome.

Sauvan, M. E. 1921. "L'évolution économique du Haut-Diois." *Revue de Géographie Alpine* 9: 521–624.

Scheidel, W. et al., eds. 2007. *The Cambridge Economic History of the Greco-Roman World*. Cambridge: Cambridge University Press.

Segard, M. 2008. "Les villes alpines des Voconces." In P. Leveau and B. Rémy, eds., *Les villes des Alpes occidentales à l'époque romaine: actes du colloque international (Grenoble, 6–8 Octobre 2006)*, 308–20. Grenoble: Centre de Recherche d'Histoire de l'Italie et des Pays Alpins.

Sillières, P. 1982. *Centuriation et voie romaine au sud de Merida: contribution à la delimitation de la Bétique et la Lusitanie*. Paris: de Boccard.

Walser, G. 1989. "Quelques hypothèses sur le *splendidissimum corpus mercatorum Cisalpinorum et Transalpinorum*." *Ktema* 14: 89–93.

Weber, E. 1976. *Peasants into Frenchmen. The Modernization of Rural France, 1870–1914*. Stanford: Stanford University Press.

Woolf, G. 1997. "The Roman Urbanization of the East." In S. Alcock, ed., *The Early Roman Empire in the East*, 1–14. Oxford: Oxford University Press.

12

Roads Not Featured: A Roman Failure to Communicate?

Richard J. A. Talbert

The Romans are naturally to be counted among those pre-modern societies long admired for their road systems. In their case, moreover, there is no shortage of testimony, both material and written. So it would seem a reasonable expectation that the means exist to determine what place roads occupied in the mindset, values, and self-identity of the Roman authorities and their subjects.

Up to a point, this expectation certainly seems to hold out promise. It is possible to trace how the system developed over several centuries, penetrating to every region of Rome's empire as it expanded immensely.[1] Romans constructed their first paved road – south from the city of Rome itself – in the late fourth century BCE, possibly taking Etruscan practice as their model. Half a millennium thereafter, by the late first century CE, the empire and its highways stretched from the north of England through most of Europe and across Asia Minor to the Euphrates river, as well as along the North African coast, far up the Nile Valley, and over to the Red Sea. The system remained at this astonishing extent for a further three centuries and more, until the west of the empire could no longer be held against outside invasions.[2] Many Roman highways were paved, but not all were; surfaces varied according to local conditions (Figures 12.1a and 12.1b). The courses of highways, too, were not invariably marked by milestones, nor was the milestone a Roman "invention."[3] Even so, it is an accurate impression that paving and milestones did become two distinctive features of the huge accomplishment and investment which Roman highways represented.

Seven to eight thousand of these markers survive – spanning several centuries, scattered very unevenly across the empire. They, and their inscribed record, have

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

understandably attracted intense scholarly attention (Kolb 2004; 2007). As has been recognized, any modern assumption that they were designed primarily to serve as aides to travelers on their journeys may be erroneous. Instead, it would seem the principal purpose was more often to promote the image of the official or emperor responsible for constructing a new stretch of road or for making major repairs to an existing one (Witschel 2002). Take the typical instance that Figure 12.2 represents. Here it is the name and many titles of the emperor (Trajan) who commissioned the construction early in the second century CE that are intended to dominate viewers' attention, together with the affirmation below in smaller lettering that it is his money that funded the work all the (considerable) way from Beneventum to Brundisium (*BAtlas* 44G3–45G3). In addition, the clear

Publisher's Note:
Image not available
in the electronic edition

Figure 12.1a Paved highway: the Via Egnatia near Philippi in northern Greece.
Source: Erich Lessing/Art Resource, NY. Reproduced with permission.

Figure 12.1b Unpaved road in Egypt's eastern desert: a gravel surface cleared of boulders for a width of approximately 8 m.
Source: R. B. Jackson, *At Empire's Edge: Exploring Rome's Egyptian Frontier* (New Haven and London: Yale University Press, 2002), 57. Author's photograph, reproduced with permission.

confirmation that at this stage travelers have reached (mile) 79 is important; but notably missing is any mention of the further distance to the road's endpoint.

Of course, to learn anything from a Roman milestone, travelers needed a modest level of literacy (which is not widespread among the population) and working knowledge of Latin. Increasingly over time, Latin was not a source of difficulty within Italy (where the milestone illustrated was erected). However, it is liable to have remained so elsewhere, in particular throughout the east of the empire, where Greek was the shared language of educated people and where many other "pre-Roman" languages and cultures continued widespread, such as Syriac and Aramaic. Nonetheless, the overwhelming majority of Roman milestones throughout the east are inscribed only in Latin, relentlessly proclaiming the ruling authority's achievement in its own alien language and recording distances in its alien unit of measurement.[4] To be sure, some travelers will have felt informed, proud and safer as a result;[5] others, by contrast, will have had their uncomprehending resentment reawakened every single mile.

Figure 12.2 Milestone 79 on the road from Beneventum to Brundisium in southern Italy constructed by the emperor Trajan (*CIL* IX.6021).
Source: Photograph by L. Keppie. Reproduced with permission.

Contemporary Comment

Given the pervasiveness and undeniable importance of Roman roads, a search for contemporary commentary on them as a phenomenon or system yields surprisingly little. Next-to-nothing overtly hostile seems to have survived,[6] and almost all the favorable comment is articulated by Greeks adopting an outsider's perspective on Roman civilization. The literary critic and historian Dionysius of Halicarnassus is the earliest, writing at the end of the first century BCE. He expresses in passing the personal opinion that the three most impressive forms of Roman construction, best exemplifying the greatness of Rome's hegemony, are the channeling of water, the paving of roads, and the laying of sewers (3.67.5). Not long afterwards the geographer Strabo also praises these same three as distinctively Roman, declaring "they have constructed roads through the countryside by adding both cuts through hills and embankments over valleys, so that wagons carry as much as a boat" (5.3.8; cf. 4.6.6).

Early in the second century CE, the biographer Plutarch in his *Life* of the second century BCE reformer-tribune Gaius Gracchus has special praise for his road-building program. Gaius, he says:

> ensured that the roads were not only functional, but also aesthetically pleasing and attractive. They were to run perfectly straight through the countryside, with a surface of quarried stone firmly bedded in compressed sand. Depressions were filled up, bridges were thrown across every watercourse or ravine which intersected the route, and from one side to the other the roads were made flat and level, so that the work presented an even and beautiful appearance throughout. He also measured every road in miles (a mile is a little less than eight stades), and set up stone columns as distance-markers. At smaller intervals he also placed further blocks of stone either side of the road, to make it easy for riders to mount their horses from them without needing a leg-up. (28.7)[7]

Plutarch's characteristically double compliment – admiring both function and form – must surely reflect his own experience of traveling along Roman roads.[8] The same may be said of the sophist Aelius Aristides in the mid-second century CE. His oration *To Rome* praises the freedom and ease of travel that Roman rule has brought:

> on the one hand you [Romans] have surveyed the whole world (*oikoumene*), on the other you have spanned rivers with all kinds of bridges. By cutting through mountains you have made land travel feasible; you have filled the deserts with way-stations, and you have civilized everything with your lifestyle and organization. (101)

Road-building as an integral component of the spread of Roman civilization is singled out for conspicuous praise on more than one monument in Lycia, following the Roman annexation of this mountainous region of southern Asia Minor in the mid-first century CE (among the last regions with a Mediterranean coastline to be so annexed). In particular, one of the two Greek texts on a tall rectangular pillar at the harbor of Patara first proclaims that Claudius, "emperor of the world (*oikoumene*)," has – through his governor on the spot – constructed roads throughout Lycia (Şahin and Adak 2007; Grasshoff and Mittenhuber 2009). It then lists the distances between at least fifty places there, as well as onwards to a few others in the neighboring province of Asia (Figure 12.3). Equally, a roadside altar in the territory of Limyra records a dedication to Claudius by the Lycians (again in Greek) expressing their gratitude for peace and road-building.[9]

Given Claudius' emulation of Rome's first emperor, Augustus, it is conceivable that the Patara pillar was meant to recall the so-called *miliarium aureum* or "golden

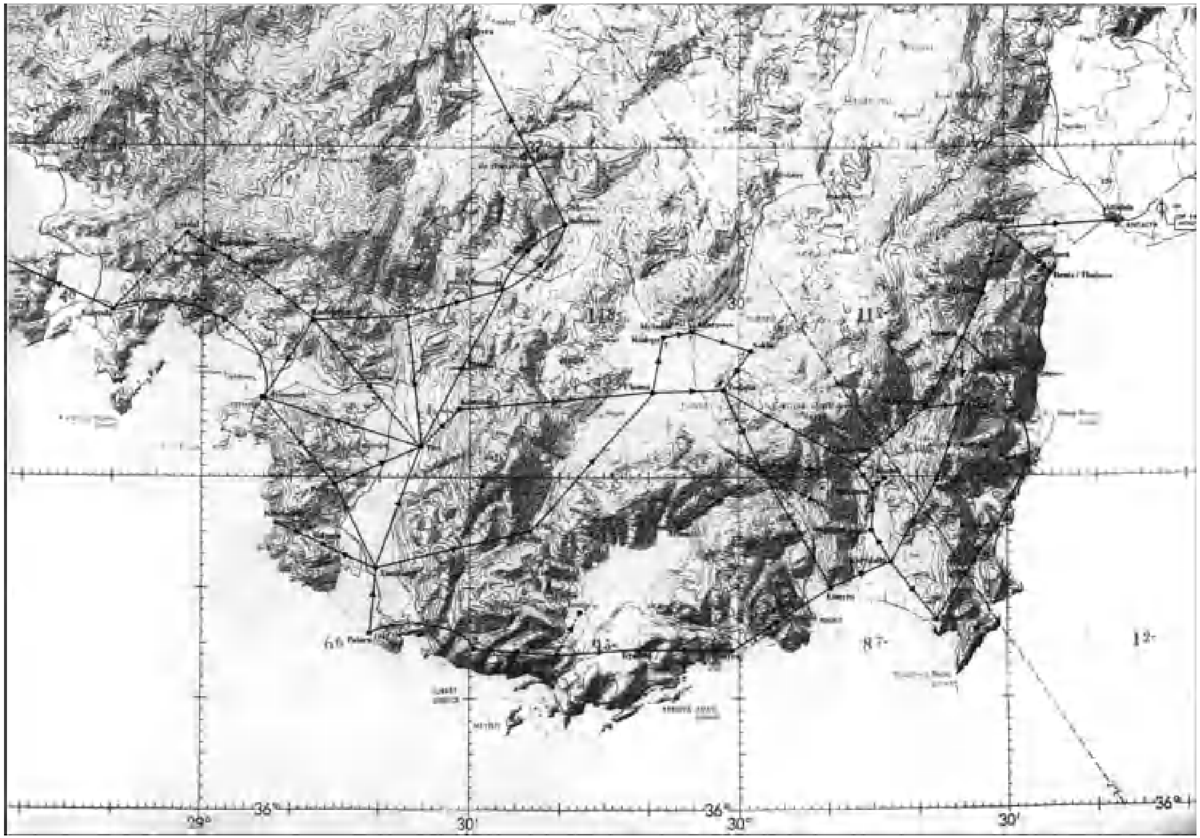


Figure 12.3 Routes as listed on the pillar at Patara mapped out according to modern conventions and numbered.
Source: Grasshof and Mittenhuber 2009, 225. Reproduced with permission.

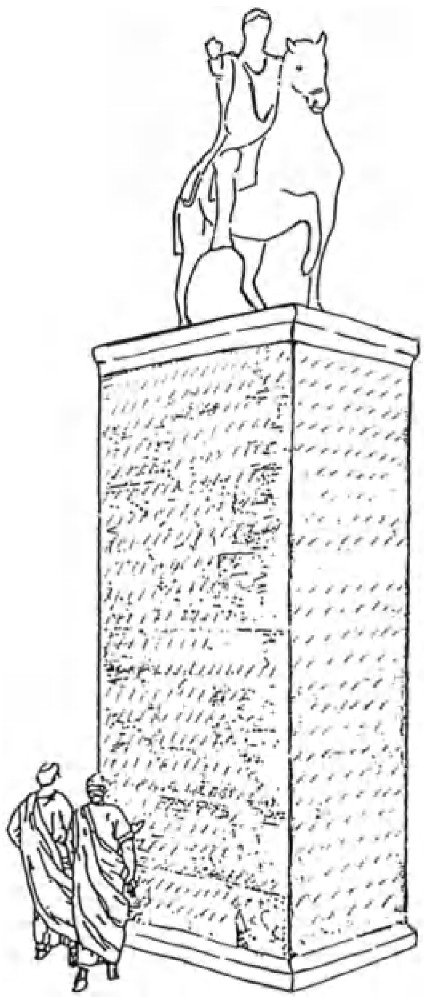


Figure 12.4 The pillar at Patara as it might have appeared to viewers. Approximate dimensions are 1.6 m wide x 2.35 m deep x 5.5 m high.
Source: Sketch by R. W. B. Salway. Reproduced with permission.

milestone" (now lost) that Augustus set up in the forum at Rome in 20 BCE, evidently also in the form of a pillar.[10] Certainly at Patara, and perhaps at Rome earlier too, the information inscribed on the pillar must be reckoned to fulfill more of a symbolic role than one genuinely useful to travelers, because much of it was set too high up for viewers to read (Figure 12.4). Augustus erected the golden milestone as part of a long-term commission to restore and manage the roads of Italy.[11] We find this work of his variously recognized. In 27 BCE, the senate and Roman people erected an arch to him at Ariminum (modern Rimini), "[because thanks] to his initiative and funding, the Via Flaminia and the rest of Italy's most celebrated roads have been repaired ([*mu*]*niteis*)"[12] (Figure 12.5). Likewise, the legend on silver coins issued between 18 and 16 BCE runs: "because roads have been built (*munitae*)"[13] (Figure 12.6).

Publisher's Note:
Image not available
in the electronic edition

Figure 12.5 Arch erected to Augustus at Ariminum (modern Rimini), endpoint of the Via Flaminia, to commemorate his repair of Italy's highways.
Source: Alinari/Art Resource, New York. Reproduced with permission.

Publisher's Note:
Image not available
in the electronic edition

Figure 12.6 Reverse of one of several silver coin-types issued between 18 and 16 BCE featuring Augustus' construction or repair of roads (QVOD VIAE MVNITAE SVNT). The design recognizes the speed of travel now attainable, and the importance of bridges or viaducts.
Source: Courtesy of the American Numismatic Society (1944.100.39075).

Muted Imperial Engagement and Possible Explanations

Remarkably, Augustus' work on the Via Flaminia is the only road-building or repair anywhere that he chooses to mention in the extensive record of his achievements that was set up in prominent centers across the empire after his death in 14 CE (*Res Gestae* 20.5). In consequence, Augustus misses what would seem to be an ideal opportunity to convey how his concern for the road system (both in Italy and far beyond), and his control of it, combine to reinforce his grip on the empire. It would appear that his successors, in turn, never articulate this point explicitly either, let alone feature it as a matter of pride or celebration on, say, inscriptions or coins.[14] Nor are Augustus' successors praised explicitly in such terms by others. It is true that around 100 CE both the court poet Statius in Latin (*Silvae* 4.3.20-3) and the orator/philosopher Dio Chrysostom in Greek (*Oration* 3.127) each happen to affirm to the emperors Domitian and Trajan respectively that it is characteristic of the "good ruler" to build roads for his subjects. In this way, the poet and the philosopher are choosing to promote the so-called "beneficial ideology" for which second-century emperors gained special praise. At the same time, both authors perhaps deliberately stop short of formulating any unequivocal statement that recognizes imperial control of roads.

Such silence and restraint – if correctly suspected – seem surprising and in need of explanation. By contrast, in the case of other imperial states with a highway system, neither rulers themselves nor observers of them have been slow to express their realization of how vital the control of highways was to the maintenance of the regime. Writing in the fourth century BCE, the Greek observer Xenophon stated without hesitation that he saw the rapid delivery of comprehensive intelligence to the Great King as the primary function of Achaemenid highways (*Cyropaedia* 8.6.17–18). Comparable insight underlay Ibn Khurradādhbih's presentation of a detailed *Book of Routes and Kingdoms* (*Kitāb al-masālik wa al-mamālik*) to the Abbasid caliph in the mid-ninth century. It specified among much else exactly how many stations there were and how many dinars the upkeep of the entire centralized system cost.[15] In the tenth century, lands and routes across them were a particular concern of the so-called "Balkhī school" of Islamic cartographers.[16] Japan's Tokugawa rulers, too, considered it vital to maintain control of the country's overland transport. In consequence, travel along the *Gokaidô*, or Five Highway, system with its post stations was tightly regulated (see further Vaporis, this volume).

It would be a mistake to imagine that Augustus and his successors during the next three centuries somehow altogether failed to grasp the potential value of the Roman system both to themselves and to their enemies (within the empire and beyond) for the rapid delivery of intelligence and the movement of troops. According to the contemporary officer and historian Velleius Paterculus (2.111.1), Augustus was so shaken by the scale and effectiveness of the Pannonian rebellion on the Danube in 6 CE that he expressed to the senate his fear of the enemy reaching

Rome itself within ten days.[17] Later, the biographer Suetonius explains in his *Life of Augustus*:

> And so that events in all the provinces could be more speedily and promptly reported and known, he first stationed young men, and later vehicles, at moderate intervals along the military roads. The latter arrangement seems more convenient as it means that the men who bring letters from a particular place can also be questioned, if the need arises.(49)

Notable here is Augustus' evident improvement of his initial arrangement, as well as Suetonius' use of the loose term *militaris via* (military road). This term is widely attested in different types of source from the 50s BCE onwards to signify a road made for the army, by the army, or both (Rathmann 2003, 23–41). It is important to understand, however, that neither the Roman army, nor the courier service (*vehiculatio*) that Augustus instituted for government business, ever enjoyed exclusive use of any highway. It is true that a traveler needed an official permit, or *diploma*, for the right to claim accommodation, animals, and vehicles at stopping-points; the authorities found themselves constantly struggling to prevent fraudulent claims and the exploitation of poor folk by this means.[18] Even so, travel itself was genuinely unrestricted throughout the Roman empire for almost all free civilians, male and female. There was next-to-no regulation or taxation of movement as such,[19] nor of the types of traffic allowed on a road, as was clearly the case in Japan and elsewhere, by comparison. This said about Japan, it is also clear that such controls there were far from being very repressive in practice, let alone uniform. But still the very notion of comprehensively regulating civilians' freedom of movement represents a fundamental contrast. To the best of our knowledge, no such attempt was ever contemplated by the Roman authorities; the empire was too vast, and the Roman administrative presence too thinly spread across it. That guards were placed on Italy's roads and even paths by the emperor Maximinus' opponents in 238 CE – with a view to blocking his return there from the north, as well as the transmission of any news to him – was an exceptional precaution worthy of record (Herodian 8.5.5).

Augustus' introduction of restrictions on the movement of the group from which he had most to fear, his 600 or so fellow senators, plainly indicates his awareness of the constant risks to his rule from rivals. Senators were banned altogether from the strategically sensitive new province of Egypt annexed in 30 BCE; and whenever any senator wished to travel elsewhere outside Italy, he was required to gain permission in advance from the emperor.[20] Cassius Dio, a senator of the early third century, states that this requirement still applied in his own day (52.42.6), although it is impossible to say how methodically it was enforced over time. It is no coincidence that during Augustus' rule, too, exile became a standard sentence for a senator convicted of some high crime. In fact two levels of this sentence were instituted – comfortable exile (*relegatio*), potentially for a limited period only; and harsh exile (*deportatio*), in principle for life. As a further innovation, both levels required residence on an island designated by the authorities, no doubt in order to keep the exile under closer surveillance, and to limit access to him more effectively than might be feasible at any mainland location on a highway or near one (Drogula 2011).

In referring to Augustus' exclusion of senators from Egypt, the historian Tacitus terms this ban as being among the *arcana dominationis*, "the secrets of his domination" (*Annals* 2.59). Silence on the part of Augustus and his successors about the road network and their control of it could be reckoned as deliberate concealment of another such *arcanum*. It is also conceivable that the network, for all its conspicuousness, was so taken for granted as an everyday feature of the Roman environment that it did not occur to the authorities to exploit its propaganda potential, except on a local basis with milestones or, in rare instances, an arch. Of course, these two possibilities need not be mutually exclusive.

We may well imagine that no emperor would be eager to raise public awareness of the overall excellence of his empire's road network in ways that might come to the attention of enemies across the Rhine, Danube, or Euphrates rivers and only serve to encourage them. Equally, the more the emperor promoted *his* control of *his* network, the greater the likelihood that the empire's communities might press for *him*, therefore, to organize and fund its day-to-day maintenance, as well as that of the official courier service. During the first three centuries CE, in fact, these were unwelcome burdens largely passed on to the communities, along with the provision of multiple other services.[21] At this period, except in remote frontier zones of strategic importance, the Roman authorities typically kept their administrative responsibilities to a bare minimum. It was in part Rome's sheer dependence that caused emperors to maintain an attitude of *civilitas* towards cities and peoples,

Publisher's Note:
Image not available
in the electronic edition

Figure 12.7a Even though not widely attested, the norm for representation of a road evidently became a female figure reclining on a wheel, presumably a match for the typical personification of a river. The silver coin reverse celebrates Trajan's construction of the new VIA TRAIANA from Beneventum to Brundisium (cf. Figure 12.2).

Publisher's Note:
Image not available
in the electronic edition

Figure 12.7b The panel, originally from a triumphal arch of Marcus Aurelius and later reused in the Arch of Constantine at Rome, depicts a "departure" ceremony *(profectio)*. The female figure (lower right) who reclines on a wheel and greets the emperor is taken to personify a road, probably the Via Flaminia, along which he would travel north from Rome across the Apennines (cf. Figures 12.5, 12.8).
Source: Figure 12.7a courtesy of the American Numismatic Society (1905.57.344).
Figure 12.7b Vanni/Art Resource, New York. Reproduced with permission.

respecting them and fostering local pride, rather than cowing and alienating them with arrogant affirmations of power. To boast of controlling roads as opposed to, say, conquering a people or region, had in any case never featured among traditional Roman means of flaunting and legitimating power.[22] In addition, it would seem that no visually compelling form of image for representing a road – an awkward challenge – was ever developed[23] (Figures 12.7a and 12.7b).

Limits of Conceptual Awareness

More fundamentally, there is cause to question how far even emperors or their better-educated subjects were in the habit of conceptualizing the empire's highways as a "network." To be sure, this is a perspective unhesitatingly adopted by modern students of the Roman empire. To them, both long-distance road travel and global cartographic awareness are routine, while centralized control of a state's infrastructure by its proactive government is to be taken for granted. The Roman mindset was quite different, however. Long-distance travel of any kind was perilous, and Augustus may not have been alone in his preference for making journeys by water rather than overland whenever possible (Suet. *Aug.* 82). Of like mind were the Praetorian Guardsmen rapidly shipped out (it seems) from Rome to Spain in order to escort the new emperor Galba overland through the Pyrenees and Alps back to Italy in 68 CE; this march by road, in armor, over a huge distance (*immensa viarum spatia*) became a ready source of complaint (Tac. *Hist.* 1.23). Moreover, in general Romans' cartographic awareness was minimal, and they appear to have had little practical use for maps, except perhaps very local ones of the landholdings within their community.[24] Nor was there any kind of "Imperial Roads Department" for either construction or maintenance; there is no clue to how such work was actually initiated.

Consideration should be given to the possibility that it may not have been typical for Romans to conceive of their empire having a single connected network of roads. The one instance known to me where such a reference occurs (without recourse to any special term) is poetic. Statius (the "court poet" mentioned above), in a eulogy for a deceased ex-slave who rose to be the emperor's chief financial accountant (*a rationibus*), lists among his budgeting responsibilities the needs of "the far extended network/system of roads" (*longe series porrecta viarum*; *Silvae* 3.3.102). There are occasional instances in the provinces where a milestone does state the distance from faraway Rome itself: one at Savaria (modern Szombathely, Hungary) records 675 miles.[25] Even so, the strong impression from such notices and much other varied testimony is that most of the empire's inhabitants had only a local perspective, or at a stretch a regional or provincial one; the need to think more broadly than this seldom arose for them in any case. At the same time, decisions by emperors or their staffs on where to invest heavily in road repair can by no means always have been governed by strategic priorities. In that event, Trajan would never have authorized such a massive repair program in Spain in the early second century CE, for example, nor would Maximinus have authorized a similar one in Africa during the 230s (Rathmann 2003, 229, 254). In each instance neither Spain nor Africa was a region of current strategic concern, whereas others were. Needless to add, the empire had no Pentagon nor military staff college. The claim made by Brian Campbell in his *Rivers and the Power of Ancient Rome* (2012) – "The Romans had no empire-wide strategy or policy for using rivers consistently as some kind of military control" – applies equally to roads.

Comprehensive route data for the empire's highways does not seem to have been available, and quite possibly was not gathered and organized systematically (Talbert 2007). A few highways happened to be named, but randomly; there was never coordinated naming of them, let alone any numbering. Nor does even the merest hint survive of a handbook comparable to the one by Ibn Khurradādhbih mentioned above. It is conceivable that emperors purposely blocked the production of such a useful reference tool; or maybe the apparent lack of one is just another illustration of the "unprofessional" approach which Romans so long maintained towards administration of their empire (Potter 2006, 192). In the same vein, if anyone did decide to seek out a map displaying the empire's highways comprehensively as a network, it is dubious whether there was one to be found. Such few references to maps as survive never mention roads as a feature. This point applies in particular to the famous (but now lost) map of the "world" (*orbis terrarum*) sponsored by Augustus' close associate Agrippa and placed on public display in Rome around the end of the first century BCE (Arnaud 2007–8); the spread of Roman highways was in any case only just beginning at this period. Ptolemy's *Geography* of the mid-second century CE, a surviving scientific reference work in the Alexandrian tradition, proves equally uninformative in this connection; roads are not among the types of feature for which it offers coordinates.[26]

The Peutinger Map: A Creative Advance?

Against this background, a large map only known to us from an incomplete medieval copy in eleven parchment segments merits closer attention as a creative advance than it has so far received. This so-called "Peutinger Map" (named after its sixteenth-century owner) lacks all context, but must be Roman in origin.[27] Its shape – approximately 7 m wide or long by 33 cm tall – is extreme, and the lefthand end is missing (perhaps another 2 m). Even so, there can be little doubt that the original map represented almost the entire world known to the Romans, from the British Isles and the Atlantic across to Persia and India. To compress this vast arc into such a squat frame, with the city of Rome, moreover, boldly sited at its center, much open water is drained and closed up, and the principal landmasses are made the main focus of viewers' attention. Conspicuous among the many features selected for marking are land routes, presented as red linework that fans out from Rome to forge horizontally across the entire empire and even beyond to the east (Figure 12.8).

The traditional interpretation of this map is in my view an unduly selective and literal one, which assumes it to be no more than the equivalent of a modern automobile association's atlas for drivers. The fact is, however, that Rome's central placement inevitably compounds the already severe skewing of the landmasses, while lack of concern to present the routes in ways designed to be of practical help to travelers is all too often apparent when they are subjected to close scrutiny. I think it more appropriate to see this as a map for display, therefore, designed as propaganda to reinforce Roman claims to world power, most plausibly during the

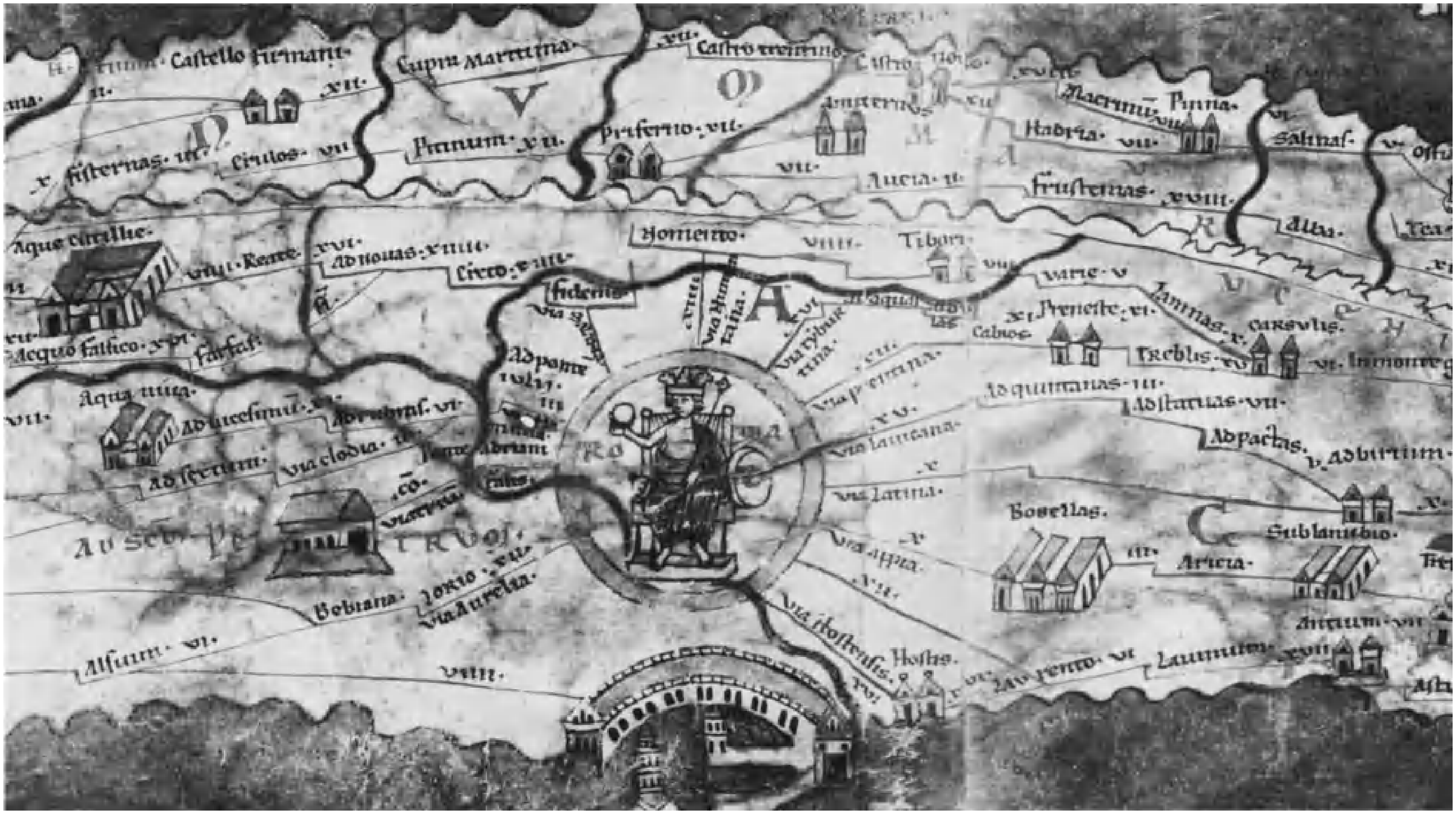


Figure 12.8 The city of Rome with roads (named) fanning out in all directions on the Peutinger map, segments 4–5.
Source: *Peutingeriana Tabula Itineraria in Bibliotheca Palatina Vindobonensi asservata nunc primum arte photographica expressa* (Vienna: Angerer and Göschl, 1888). Reproduced with permission of the Ancient World Mapping Center, University of North Carolina, Chapel Hill.

period of Diocletian's Tetrarchy around 300 CE. The Tetrarchs instituted a style of rule far more openly autocratic and ritualized than the Augustan model (Smith 2007, 187–96), and the appearance of the roads on the map may be regarded as an inspired reflection of that shift. Here – quite possibly for the first time – an ingenious designer exploited the opportunity to highlight the roads as an interconnected system and their control as a key component of Roman imperial power. It is striking that even so the presentation lacks menace, because no overtly military feature is marked; legionary bases, garrisons, and fortified frontier lines are all absent. Instead, the Tetrarchy's formidable military might is taken for granted.

The map's aim, rather, is to demonstrate that the empire is now restored to peace and stability, rebellions and invasions are overcome, and everyone may relax and travel freely in all directions as they please. In this respect the map skillfully recalls the "beneficial ideology" of the utopian second century, while diverting attention from the Tetrarchy's harshness and ongoing struggles. Altogether the map can be viewed as a faithful cartographic representation of the new era that the Tetrarchs themselves proudly characterize in their preamble to an edict of 301 CE as:

> a time when the world is in tranquility, placed in the lap of a most profound calm, as well as benefiting from a peace which was toiled for with abundant sweat. Let us therefore, we who with the kind favor of the deities crushed the previous seething ravages of barbarian peoples by destroying those very nations, protect the peace established for eternity with the appropriate defences of justice.[28]

Whatever statement the map may be making about imperial control of roads, it is still a restrained one when so many other features are conspicuously visible, all of which between them serve to prompt a variety of impressions. Consequently, whether viewers of the map in antiquity would have shared traditional modern scholarship's highly focused preoccupation with its presentation of roads alone has to remain a matter of considerable doubt.

Conclusion

Let me preface my conclusion by stressing that the claims and concerns articulated in this essay are not meant to call into question the approaches and insights of those scholars (notably Hitchner, Maas and Ruths, this volume) who treat Roman roads as an interconnected network and on that basis advance broad findings about the development of the empire's economy and society. To be sure, the perspective they adopt for their purpose is a valid one, but at the same time it is distinctly modern. My concern, rather, has been merely to doubt whether we should assume the same conceptual awareness on the part of the Romans themselves. Ample justification for caution emerges. Even at the highest level, it seems, the mindset, motivation, reference tools, and administrative resources to recognize the empire's highways as an interconnected network and to exploit their potential as such were all absent. Disappointing these shortcomings may well be to us today, given our admiration for the network and our recognition of its extraordinary potential. However, to judge by the patent and persistent limitations of Roman imperial government in many other respects, such lack of more active appreciation for roads among much else should hardly be a surprise.

Notes

1 Note, for example, Staccioli 2003; and in more depth *BNP* 12 (2008) *s.v.* Roads V, cols. 622–47, with Wittke et al. 2010, 194–9, 261–2. The puzzle of how the long straight stretches of many Roman roads were planned is addressed by Lewis 2001, 217–45. On road construction, see further Oleson 2008, 551–79 (by L. Quilici).

2 For changes in late antiquity, see Belke 2008; Leyerle 2009; McCormick 2001, 64–82.

3 Such markers were already to be found along Persian highways; on these, and their Assyrian forerunners, note the valuable overview by Silverstein 2007, 7–28, esp. 16.

4 See further Isaac 1992, 304–9. Some milestones inscribed in both Latin and Greek are found in Asia Minor; from the late second century CE, distance figures commonly appear in both languages on milestones in Judaea, Syria, and Arabia.

5 As both the rhetorician Quintilian in the late first century CE (*Institutio Oratoria* 4.5.22) and the poet Rutilius Namatianus in the early fifth (*De Reditu Suo* 2.7–8) reflect, the weary traveler can be soothed by reading the distances on successive milestones.

6 Among the rebel Britons' grievances in the 80s CE was supposedly the compulsion to build roads through forest and marsh under harsh conditions, although the sole testimony is a speech composed by the Roman historian Tacitus (*Agricola* 31.2). According to the Babylonian Talmud, a second-century CE rabbi counters a fellow rabbi's praise of Roman market-places, baths, and bridges (and thus, by extension, roads) by declaring: "Everything they have made they have made for themselves: market-places, for whores; baths, to wallow in; bridges, to levy tolls" (de Lange 1978, 268).

7 Translation adapted from Waterfield 1999, 105.

8 This experience may equally have been in his mind when he describes (or imagines) the youthful Alexander hosting Persian envoys to Macedon in the absence of his father King Philip: Alexander put to them a stream of notably mature questions, the first of which inquired about road distances and traveling conditions for a journey into Persia (*Alexander* 5).

9 *Supplementum Epigraphicum Graecum* 52 (2002), 1438.

10 Plutarch, *Galba* 24, with *LTUR* 3 (1996), 250–1, *s.v. Miliarium aureum.*

11 The modern misconception that the *miliarium aureum* was intended to serve as a nodal point for the roads of the entire empire, rather than just of Italy, is widespread. U.S. President Warren Harding reflected it in his speech at the dedication of the "Zero Milestone" in Washington, DC, on June 4, 1923: see www.fhwa.dot.gov/infrastructure/zero.cfm.

12 Cooley 2003, 254, no. K68.

13 Cooley 2003, 255, no. K69. The Latin verb *munio* can signify both construction and repair.

14 Such restraint is noted by T. Kissel (2002, 149). Indeed it applies to public works in general funded by the imperial authorities, as observed by W. V. Harris (2003, 296), rebutting H. Schneider (1986).
15 See Silverstein 2007, 90–7; M. J. De Geoje (1889, 1–208) offers a French translation.
16 See Tibbetts 1992; Rapoport and Savage-Smith 2008, 130–2.
17 A comparable, but no more than general, reference to the potential importance of roads for effective campaigning is made around the same period by the Greek geographer Strabo (1.1.17), who draws attention to the skill of "Germans and Celts" in concealing from Roman forces the whereabouts of such roads as existed in their otherwise trackless barbarian wasteland.
18 See Mitchell 1976 (overlooked by Silverstein 2007); note also, for example, Hauken and Malay 1998, 74–137 (Skaptopara inscription, 238 CE) and, among more recent discoveries of further such instances, Hauken 2009.
19 Some exceptions (in certain frontier zones especially) to the absence of regulation are discussed by C. Moatti (2000). The evident control of movement in and out of Egypt was untypical, but it hardly seems to have extended to travel within the province: see Adams 2001, 157–8.
20 See Talbert 1984, 139–41, 515. Claudius as censor gave offence by evidently trying – without advance notice – to extend the restrictions on senators' absences from Italy to *equites*, the class of wealthy Roman citizens who ranked immediately below senators (Suetonius, *Claudius* 16).
21 Note in this connection Kissel 2002, 133–46 and 153–5; Potter 2006, 186–8, 235–40, 254–5, 275–8.
22 Notably, the Republican practice of naming a road after the magistrate responsible for its construction declined in the imperial period. Only the emperor's name could be used then, and the practice occurs relatively seldom. See *BNP* 15 (2010), *s.v. Viae publicae*, cols. 373–80.
23 Gerhard Koeppel's interpretation (1980) of a zig-zag band on Trajan's Column as a route (*itinerarium*) taken by troops in the Dacian War is imaginative, but by no means compelling.
24 See *BNP* 2 (2003), *s.v.* Cartography, cols. 1138–43.
25 *BAtlas* 20D2, with Kolb 2007, 172–4.
26 Stückelberger and Grasshoff 2006 (includes German translation). Equally, roads held no special interest for the encyclopedist Pliny the Elder in the late first century CE; there is no mention of them in the opening summary (Book 1) of his *Natural History* (geography is covered in Books 3–6).
27 For full discussion of the map itself, its date, context, and purpose, see now Talbert 2010.
28 Giacchero 1974, 134, ll. 18–26.

References

BAtlas = Talbert, R. J. A., ed. 2000. *Barrington Atlas of the Greek and Roman World.* Princeton: Princeton University Press.

BNP = *Brill's New Pauly.* Leiden: Brill.

CIL IX = *Corpus Inscriptionum Latinarum* vol. IX (1883). Berlin: Preussische Akademie der Wissenschaften.

LTUR = Steinby, E. M., ed. 1993–2001. *Lexikon Topographicum Urbis Romae*. Rome: Quasar.

Adams, C. 2001. " 'There and Back Again': Getting Around in Roman Egypt." In C. Adams and R. Laurence, eds., *Travel and Geography in the Roman Empire*, 138–66. London and New York: Routledge.

Arnaud, P. 2007–8. "Texte et carte de Marcus Agrippa: historiographie et données textuelles." *Geographia Antiqua* 16–17: 73–126.

Belke, K. 2008. "Communications: Roads and Bridges." In E. Jeffreys et al., eds., *The Oxford Handbook of Byzantine Studies*, 295–308. Oxford: Oxford University Press.

Campbell, B. 2012. *Rivers and the Power of Ancient Rome*. Chapel Hill: University of North Carolina Press.

Cooley, M. G. L., ed. 2003. *The Age of Augustus*. London: London Association of Classical Teachers.

De Geoje, M. J. 1967 [1889]. *Bibliotheca Geographorum Arabicorum*, vol. 6. Leiden: Brill.

De Lange, N. R. M. 1978. "Jewish Attitudes to the Roman Empire." In P. D. A. Garnsey and C. R. Whittaker, eds., *Imperialism in the Ancient World*, 255–81. Cambridge: Cambridge University Press.

Drogula, F. K. 2011. "Controlling Travel: Deportation, Islands and the Regulation of Senatorial Mobility in the Augustan Principate." *Classical Quarterly* 61.1: 230–66.

Giacchero, M., ed., 1974. *Edictum Diocletiani et Collegarum de Pretiis Rerum Venalium*, vol. 1. Genoa: Istituto di storia antica e scienze ausiliarie.

Grasshoff, G. and F. Mittenhuber, eds., 2009. *Untersuchungen zum Stadiasmos von Patara: Modellierung und Analyse eines antiken geographischen Streckennetzes*. Bern: Bern Studies in the History and Philosophy of Science.

Harris, W. V. 2003. "Roman Governments and Commerce, 300 B.C.–A.D. 300." In C. Zaccagnini, ed., *Mercanti e Politica nel Mondo Antico*, 275–305. Rome: Bretschneider.

Hauken, T. 1998. *Petition and Response: An Epigraphic Study of Petitions to Roman Emperors, 181–249*. Bergen: Norwegian Institute at Athens.

Hauken, T. and H. Malay. 2009. "A New Edict of Hadrian from the Province of Asia Setting Regulations for Requisitioned Transport." In R. Haensch, ed., *Selbstdarstellung und Kommunikation: Die Veröffentlichung staatlicher Urkunden auf Stein und Bronze in der römischen Welt*, 327–48. Munich: Beck.

Isaac, B. 1992. *The Limits of Empire: The Roman Army in the East*, revd. edn. Oxford: Oxford University Press.

Kissel, T. 2002. "Road-Building as a Munus Publicum." In P. Erdkamp, ed., *The Roman Army and the Economy*, 127–60. Amsterdam: Gieben.

Koeppel, G. M. 1980. "A Military *Itinerarium* on the Column of Trajan: Scene L." *Römische Mitteilungen* 87: 301–6.

Kolb, A. 2004. "Römische Meilensteine: Stand der Forschung und Probleme." In R. Frei-Stolba, ed., *Siedlung und Verkehr im römischen Reich*, 135–55. Bern: Lang.

Kolb, A. 2007. "Raumwahrnehmung und Raumerschliessung durch römische Strassen." In M. Rathmann, ed., *Wahrnehmung und Erfassung geographischer Räume in der Antike*, 169–80. Mainz am Rhein: Philipp von Zabern.

Lewis, M. J. T. 2001. *Surveying Instruments of Greece and Rome*. Cambridge: Cambridge University Press.

Leyerle, B. 2009. "Mobility and the Traces of Empire." In P. Rousseau, ed., *A Companion to Late Antiquity*, 110–23. Malden: Wiley-Blackwell.

McCormick, M. 2001. *Origins of the European Economy: Communications and Commerce, A.D. 300–900.* Cambridge: Cambridge University Press.

Mitchell, S. 1976. "Requisitioned Transport in the Roman Empire: A New Inscription from Pisidia." *Journal of Roman Studies* 66: 106–31.

Moatti, C. 2000. "Le contrôle de la mobilité des personnes dans l'empire romain." *Mélanges de l'École Française de Rome, Antiquité* 112.2: 925–58.

Oleson, J. P., ed., 2008. *The Oxford Handbook of Engineering and Technology in the Classical World.* Oxford: Oxford University Press.

Potter, D. S., ed., 2006. *A Companion to the Roman Empire.* Malden: Blackwell.

Rapoport, Y. and E. Savage-Smith. 2008. "The *Book of Curiosities* and a Unique Map of the World." In R. J. A. Talbert and R. W. Unger, eds., *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, 121–38. Leiden: Brill.

Rathmann, M. 2003. *Untersuchungen zu den Reichsstrassen in den westlichen Provinzen des Imperium Romanum.* Mainz am Rhein: Philipp von Zabern.

Şahin, S. and M. Adak. 2007. *Stadiasmus Patarensis: Itinera Romana Provinciae Lyciae.* Istanbul: Ege Yayınları.

Schneider, H. 1986. "Infrastruktur und politische Legitimation im frühen Principat." *Opus* 5: 23–51.

Silverstein, A. J. 2007. *Postal Systems in the Pre-Modern Islamic World.* Cambridge: Cambridge University Press.

Smith, R. 2007. "The Imperial Court of the Late Roman Empire." In A. J. S. Spawforth, ed., *The Court and Court Society in Ancient Monarchies*, 157–232. Cambridge: Cambridge University Press.

Staccioli, R. A. 2003. *The Roads of the Romans.* Los Angeles: J. Paul Getty Museum.

Stückelberger, A. and G. Grasshoff, eds. 2006. *Klaudios Ptolemaios, Handbuch der Geographie*, 2 vols. Basel: Schwabe.

Talbert, R. J. A. 1984. *The Senate of Imperial Rome.* Princeton: Princeton University Press.

Talbert, R. J. A. 2007. "Author, Audience and the Roman Empire in the *Antonine Itinerary.*" In R. Haensch and J. Heinrichs, eds., *Der Alltag der römischen Administration in der Hohen Kaiserzeit*, 256–70. Cologne: Böhlau.

Talbert, R. J. A. 2010. *Rome's World: The Peutinger Map Reconsidered.* Cambridge: Cambridge University Press.

Tibbetts, G. R. 1992. "The 'Balkhī School' of Geographers." In J. B. Harley and D. Woodward, eds., *The History of Cartography*, 2.1: *Cartography in the Traditional Islamic and South Asian Societies*, 108–26. Chicago: University of Chicago Press.

Waterfield, R., trans., 1999. *Plutarch, Roman Lives.* Oxford: Oxford University Press.

Witschel, C. 2002. "Meilensteine als historische Quelle? Das Beispiel Aquileia." *Chiron* 32: 325–93.

Wittke, A.-M., et al. 2010. *Historical Atlas of the Ancient World* (*BNP* Suppl. 3). Leiden: Brill.

13

Road Connectivity and the Structure of Ancient Empires: A Case Study from Late Antiquity

Michael Maas and Derek Ruths

In classical antiquity, all roads may have led to Rome but they also extended to a host of other cities, creating a complex network of connections among the empire's urban communities. At the height of Rome's power in the second century CE, over 80,000 km of paved and unpaved public roads linked nearly 1,000 self-governing cities responsible for their own administration and that of the agricultural territories they controlled. Roads and cities facilitated administration at the imperial and local levels, linking the countryside to Rome itself and the emperor. Roads enabled communication, while cities were the sites of government and the celebration of Roman culture. Roads connected all of the urban centers, whether large or small, to each other as well as to the capital at Rome. The road system was not only Rome's most enduring engineering achievement, it was also a proof of universal power.[1]

In late antiquity (ca. 250–700 CE), however, an era of transition from the classical to the medieval worlds, construction and even repair of roads in the Roman empire came to a near standstill. It was exceptional, for example, that the emperor Diocletian (r. 284–305) built the so-called *Strata Diocletiana*, a military road on the eastern frontier that may have reached from the Red Sea to the Euphrates River.[2] Maintenance of public roads, which had become largely a local responsibility, proved quite difficult by the early fifth century. Even the *Via Egnatia*, the main artery stretching across the Balkan peninsula to Constantinople (the New Rome inaugurated by Constantine as the imperial capital in 330) was often in disrepair.[3] Despite this lack of attention, however, Rome's extraordinary highway system continued to hold the empire together. It still connected the cities, permitting the

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

circulation of soldiers, civilians, and the information they carried, as it always had done – but now with a difference. As the empire responded to a series of terrible shocks (the western provinces were lost in the fifth century, and most of the eastern territories fell to Islamic armies in the seventh) and revolutionary internal changes (most notably Christianity's rise to power and the consequent suppression of traditional polytheist belief), the highway network acquired a new life.[4] This is not to say that roads were dismantled and carted off as *spolia*, a common fate for old architectural elements in late antiquity.[5] Rather, the old roads and the connections that they established were repurposed. They took late antique Romans in new directions as new routes developed upon the old road network.

The most significant and systematic reuse of the Roman road system came through the spread of Christianity. Bishops hurried to local and ecumenical councils. Spiritual travelers went on pilgrimage to sites now charged with new religious energy, creating a Christian spiritual topography.[6] We also see trade routes shift in late antiquity, as the Roman empire shrank and other kingdoms emerged (Ward-Perkins 2000, 369–77). The flow of information along the roads took new turns as well. Intellectuals, churchmen, and aristocrats created social networks as their correspondence, books, and ideas circulated along Roman highways (Sotinel 2006). Moreover, provinces and other administrative units were often redrawn, sending bureaucrats, tax collectors, and soldiers to any number of new destinations.[7] These many new patterns of connection, intangible though they may be in the physical record, were nonetheless quite real and an essential part of the fabric of late antique society. While a great deal of profitable research has been conducted upon various stretches of the Roman road system, and some new approaches have been introduced,[8] the phenomenon of connectivity between the cities has not been fully explored as a historical phenomenon in its own right.

Our essay sets out to demonstrate that useful historical information can be derived from the study of the Roman road network in the late antique centuries through the application of new methods dealing with connectivity. We know of only one study that addresses issues of global connectivity in the Roman empire and how its distribution varied from province to province. Here Shawn Graham (2006) uses graph analysis to infer certain properties of individual regions (such as speed of information flow) and to determine the density of urban centers within them.

Our analysis, by contrast, is concerned with a quite different use of road-system connectivity.[9] We believe that close examination of the low-level connectivity in a road system can offer insights into higher-level phenomena. We are not interested in determining the characteristics of individual provinces. Instead, we propose that groups of cities (and roads)[10] that are densely connected correspond to larger entities of some sort – social, political, or economic – that we term "clusters." We have designed and implemented a computer algorithm that detects them.[11] The algorithm is necessary because the patterns of connectivity manifest in the road system are very complex and not self-evident.

As our road data set, we digitized the *Antonine Itinerary* so that it could be entered into the computer (Figure 13.1). This compendium of information is probably derived from publicly displayed plaques intended to help travelers plan journeys. It dates to the late third or very early fourth century, and contains information about a network of over 500 cities and 700 roads in the empire.[12] Strictly speaking, however, it is not a map. Rather, it represents the roads and connections between cities that held particular significance for the various authors of its source itineraries. Even so, it is a compilation that provides an extensive, albeit not exhaustive, network of connections throughout the empire, one that reveals a Roman point of view. Our decision to use this data set was based in part simply on its availability (complete road maps of the Roman empire do not exist), and in part on the desirability of using a road network system that represents Roman perspectives. The *Antonine Itinerary* provides the material we needed in order to find clusters with our algorithm.

Our next step was to determine how many clusters to look for with the algorithm. We hoped to find a high degree of correlation between the clusters we identified and Roman groupings of one sort or another known from independent sources; a high degree of correlation would validate our technique and its assumptions. In the end, we decided to look for twelve clusters with the algorithm, because we knew that the emperor Diocletian – a shrewd administrator who restructured the empire around the time that the *Antonine Itinerary* was compiled – instituted twelve large-scale administrative units called "dioceses." A fourth-century document known as the Verona List catalogues them.[13]

Diocletian and his three imperial associates formed a junta known as the Tetrarchy.[14] In the course of wide-ranging administrative reforms, they nearly doubled the number of provinces; different groupings of them then formed the twelve newly established dioceses. The "vicar" who governed each diocese was in turn responsible to a "prefect" who reported to a Tetrarch. Thus there were four major groups of dioceses, each comprising several provinces overseen by an imperial prefect in the name of the Tetrarch who ruled that portion of the empire.[15] Figure 13.2 shows the twelve groupings drawn from the *Antonine Itinerary* with our algorithm, labeled A through L. Figure 13.3 shows the dioceses of Diocletian, and Figure 13.4 shows our clusters and the dioceses together for comparison.

Do our twelve clusters correspond to the twelve dioceses? The comparison proves instructive: there is no exact one-to-one correspondence. Cluster A includes Britannia and parts of the provinces of Lugdunensis II, Belgica II, and Germania (roughly Flanders and Normandy). The inclusion of territory on the continental side of the English Channel is presumably due to the inclusion of cross-Channel routes in the *Antonine Itinerary*. The diocese of Britanniae, however, stops at the Channel and does not include any lands on the continent. This suggests that while the roads and cities there were closely linked to Britannia in economic, cultural, or other terms, the designers of the dioceses were either unaware of these connections or uninterested in them, as they preferred to treat Britannia simply as an island. The inclusion of Sardinia in cluster J suggests similar links by sea indicated in the *Antonine Itinerary*. The designers of the Italia diocese, however, kept Sardinia joined administratively to Italia.

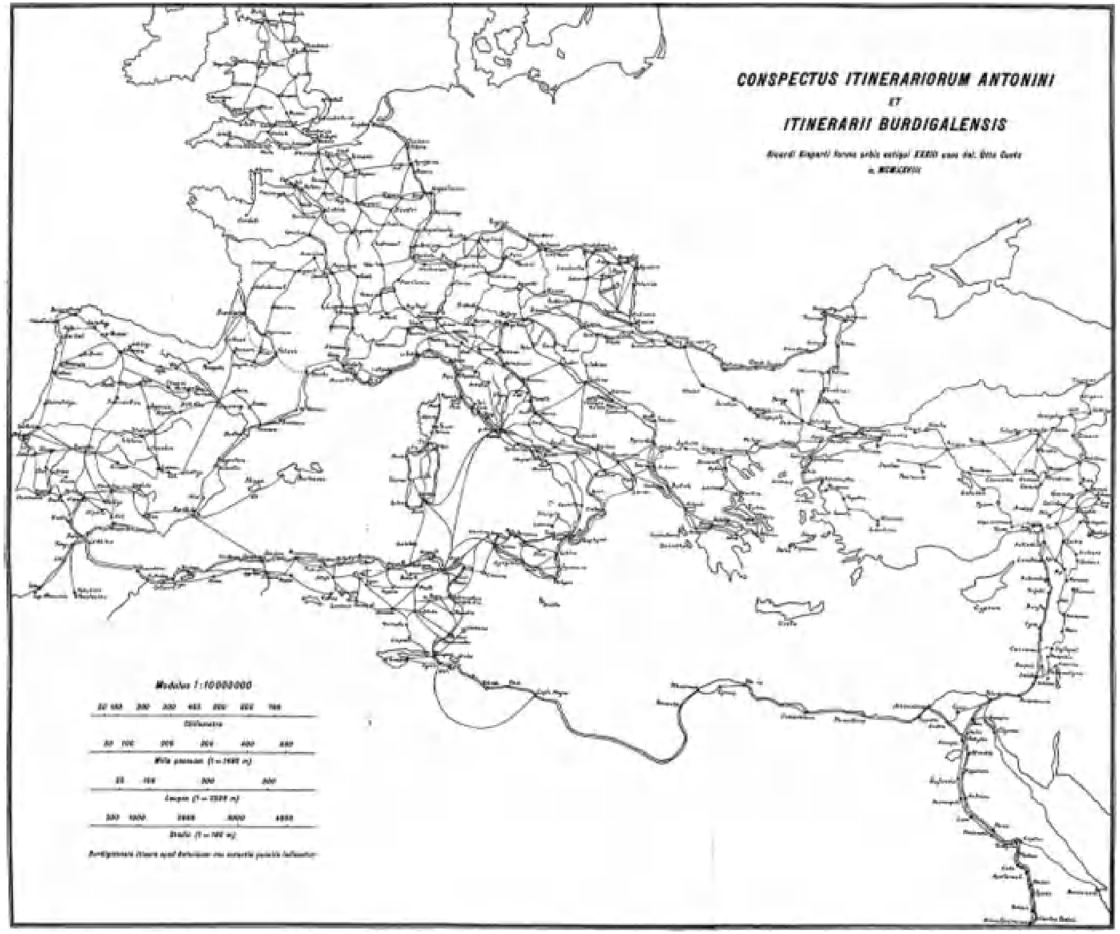


Figure 13.1 Antonine Itinerary.
Source: Cuntz, O., ed. 1929. *Itineraria Romana, I: Itineraria Antonini Augusti et Burgidalense*, Leipzig: Teubner.

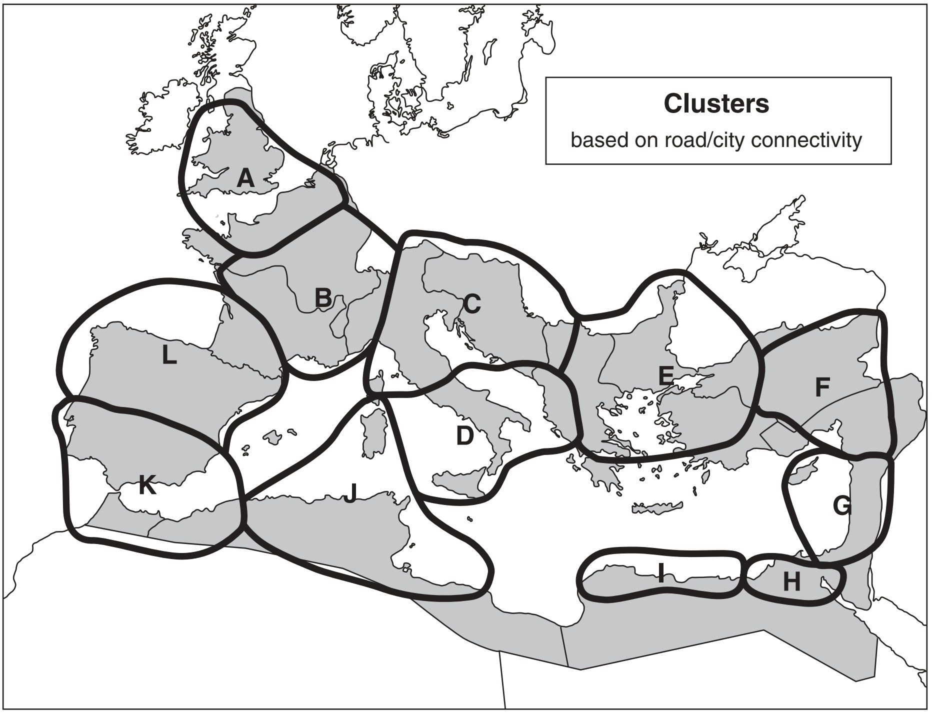


Figure 13.2 Twelve clusters.

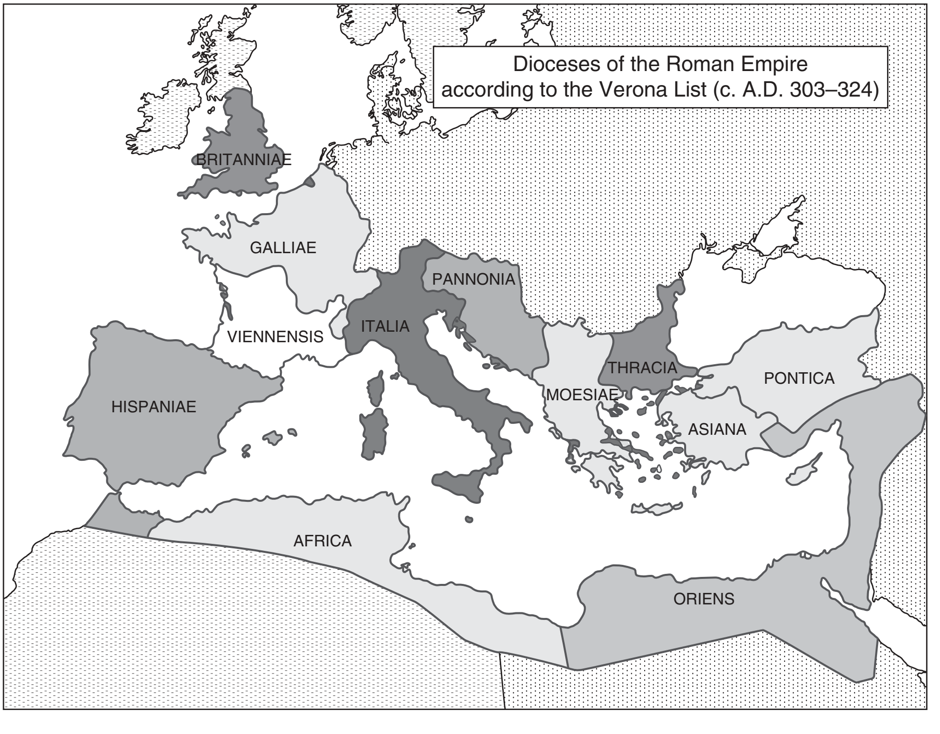


Figure 13.3 Dioceses of Diocletian.

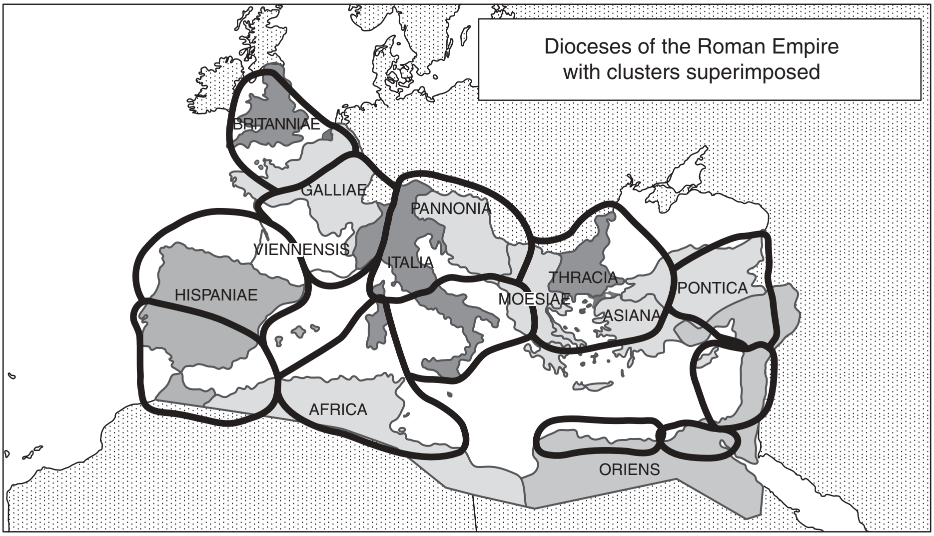


Figure 13.4 Clusters and dioceses.

Three clusters correspond closely to cultural regions with well-known histories before they became provinces of Rome: cluster G is Palestine, with Cyprus added; cluster H is Egypt; and cluster I corresponds to Cyrenaica (modern Libya, broadly speaking). All three of these clusters were placed within a single diocese, Oriens, by the designers.

Cluster K groups together southern Spain and the province of Mauretania Tingitana in North Africa. A historical explanation for why this cluster should include only the southern part of the Iberian peninsula is lacking; perhaps it represents older cultural or political zones. Just as we saw with Britannia and the territories across the English Channel, so too the busy waterways across the Straits of Gibraltar presumably created ties between the two regions, as suggested by the clustering. The diocesan designers followed this arrangement, but put the entire Iberian peninsula within the diocese of Hispaniae.

Cluster B encapsulates territory generally known as Gaul by the Romans and also includes the German provinces. Diocletian's designers divided this area into two dioceses, Galliae in the north and Viennensis in the south. Cluster C represents northern Italy as far south as Rome and includes the province of Pannonia; in Diocletian's design, however, this province became a separate diocese because of its military importance. We should note that in the fourth century the diocese of Italy came to be divided into northern and southern parts, following the same bisection of the Italian peninsula indicated by clusters C and D.

The inclusion of part of the western Balkan peninsula in cluster D indicates ties created by shipping lanes across the Adriatic noted in the *Antonine Itinerary.* Even so, the designers of the diocese of Moesiae ignored these connections and, as we have seen elsewhere, maintained the geographical integrity of the Balkan peninsula for their purpose.

Cluster E contains three dioceses – Moesiae, Thracia, and Asiana – the heartland of the classical Greek world and the central lands of what would become the Byzantine empire. Finally, cluster F is the diocese of Pontica and the Syrian parts of the diocese of Oriens; it may result from the number of clusters chosen (twelve rather than thirteen or fourteen), but it could also indicate dense patterns of urbanization in this region that have social, economic, or political significance.

Despite the discrepancies between the shape of the clusters and the shape of the dioceses, there is nevertheless a 60 percent correspondence between them. We mean by this claim that when our clusters are lumped together in the way that best fits the shapes of the dioceses, 60 percent of the urban center groupings implied by the clusters are consistent with diocesan divisions.[16] This very high correlation proves revealing in several ways. It demonstrates that the clusters we isolated through use of the algorithm do represent groupings that were meaningful to Roman eyes. The discrepancies indicate, however, that the diocesan designers did not invariably take into account the patterns of connectivity that we found. Decisions about dioceses were based, it seems, on other criteria – geographical and probably political in nature. Much must have rested on the shape of the newly designed dioceses.

Why did our method detect historically significant clusters? Because of two rather obvious aspects of the Roman road system, we hypothesize. First, roads were essential for the creation and maintenance of a shared community among urban centers over a large area. Second, the density of roads in a region reflects to some extent the amount of traffic passing through it.

Conclusions and Observations

Even if our awareness was limited to the clusters found through the algorithm and we lacked independent knowledge of the diocesan or provincial organization of the Roman empire at the time of Diocletian's reforms, our clustering analysis would still allow us to imagine an administrative map of the empire that gave a general picture of the main regions incorporated into it by the Romans themselves. Because our historically meaningful clusters were embedded in a road system that significantly pre-dated Diocletian's administrative reorganization, we can say that the dioceses represent in late antique fashion a repurposing of the connectivity already underlying the clusters. Consequently, the development of new routes in late antiquity deserves further exploration.

Moreover, the clusters seem to correspond to circumscribed areas with a specific political or cultural identity in later centuries, especially during the Middle Ages. A few examples will suffice. Cluster G corresponds to the lands of the Ayyubid Sultanate (ca. 1171–1250). Cluster D forms the area of the first medieval Jewish diaspora, while cluster B is the territory where Ashkenazic Jewry developed. Cluster E becomes the heartland of the Byzantine empire, as already noted above. Cluster J is the territory of the Vandal kingdom, and later the area where Saracen raids against Italy originated. Cluster K represents the Arabic-speaking portion of Spain in the Middle Ages, while the eastern borders of clusters C and D mark the dividing-line between Latin Christendom and Greek Byzantium. The continuing presence of the clusters, presumably not coincidental, raises questions about the lasting cultural and political imprint that they derived from roads in the Roman empire. Did the clusters only reflect cultural, political, and linguistic developments, or did they also enable them? Were the clusters defined by what happened within them, or by what happened between them? Cluster A aside, to what extent did they contribute to the development of the Mediterranean as a region? Many such questions remain to be asked and explored about the afterlife of the connectivity established by the Roman road system. Finally, our case study suggests that it is possible to recognize patterns and generate historical questions about ancient empires even in the absence of a rich textual tradition. We believe that our methodology can also be applied to any other ancient empire for which the textual information is limited, but for which the roads and other points of connection are known.[17]

Notes

1 On Roman roads generally, see Radke 1973; Chevallier 1976; Cappelli 1991.

2 See *BAtlas* 68E5, 69E4 and the bibliography in *Directory*.

3 *Via Egnatia*: Procopius, *Buildings* 4.8.5. Road disrepair: *Theodosian Code* 15.3–7; *Novel* 15.3.4 (399 CE), "the immense ruin of the highways." For road maintenance, see Haldon 2005, 33–4.

4 The new post-Roman kings in the west protected the roads under their control and sometimes blockaded them for strategic reasons (cf. Gregory of Tours 6.11), but did not extend them. In the new Islamic world, Roman roads gradually fell out of use altogether, to be replaced by camel-traffic (Bulliet 1990). Roads in some urban areas, such as Caesarea Maritima and Scythopolis in Palestina, were occasionally repaved (Holum 2005, 103).

5 See Hansen 2003; Ward-Perkins 1984.

6 Tsafrir 1986; Wilkinson 2002.

7 Isaac and Roll 1982; see Ellis and Kidner 2004 for new approaches.

8 Adams and Laurence 2001. The full history of Roman roads in late antiquity remains to be written.

9 For an introduction to mathematical analysis of connectivity (graph theory), see Scott 2000.

10 It is difficult to talk about densely connected cities without implying the presence of densely connected roads, and vice versa; in the network context, a group of cities that have many roads between them implies that the roads themselves connect to many other roads through the cities at their endpoints.

11 The algorithm is a modified version of the k-mean clustering technique (Hartigan and Wong 1979). In our version of the algorithm, twelve "seed-cities" are selected at random in the network, each to belong to a different group (hence twelve groups); all other cities are placed in the group belonging to the seed-city closest to each. The cities that lie at the center of each of these twelve groups are then selected as the new "seeds,"

and the grouping process is repeated. Re-seeding continues until the group membership no longer changes. The groups present at this final step are taken to be the most highly supported ones in the network.

12 See Cuntz 1929 for the Latin text. For an older assessment of this work, see Reed 1978; for more recent views, see Salway 2001; 2007; Talbert 2002; 2007.

13 Barnes 1982, 201–25; 1996, 548–50.

14 See Lo Cascio 2005; Noethlichs 1982; Barnes 1996; Rees 2004, 24–36 (overview of administrative reforms).

15 For dioceses, see Slootjes 2006, 39–45; Kuhoff 2001, 371–81; Dupont 1973.

16 "Lumping" clusters together involved assigning each cluster to no more than a single diocese. For example, cluster A might be mapped to Britanniae, while both clusters L and K might be mapped to Hispaniae; thus, in some cases multiple clusters could be assigned to more than one diocese. A list of the pairs of urban centers in the same diocese was constructed. This means that if cities X, Y, and Z were all located in a hypothetical diocese, then pairs (X,Y), (X, Z), and (Y,Z) would be in the list. A second list of the pairs of urban centers in clusters with the same diocesan mapping was also created. Suppose that only X and Y were placed in the clusters mapped to the hypothetical diocese. In this case, only (X,Y) is in this second list. The percentage overlap of the second list with the first list provided the percentage agreement between the clustering and the diocese. All combinations of cluster-to-diocese mappings were tried. The best mapping found yielded a 60 percent agreement with the diocese; thus 60 percent of the pairwise membership relationships in the dioceses were also found in the clusters.

17 Our thanks to Gianmarco Raddi for digitizing the *Antonine Itinerary*, Maya Maskarinec for gathering more data on Roman roads than could be used here, Mitali Banarjee for assistance with the maps, and German Diaz (Rice University GIS/Data Center) for explaining how to make the final versions of them.

References

BAtlas = Talbert, R. J. A., ed. 2000. *Barrington Atlas of the Greek and Roman World* and *Map-by-Map Directory*. Princeton: Princeton University Press.

Adams, C. and R. Laurence, eds., 2001. *Travel and Geography in the Roman Empire*. London: Routledge.

Barnes, T. D. 1982. *The New Empire of Diocletian and Constantine*. Cambridge, MA: Harvard University Press.

Barnes, T. D. 1996. "Emperors, Panegyrics, Prefects, Provinces and Palaces (284–317)." *Journal of Roman Archaeology* 9: 532–52.

Bulliet, R. W. 1990. *The Camel and the Wheel*. New York: Columbia University Press.

Cappelli, R., ed. 1991. *Viae Publicae Romanae*. Rome: De Luca.

Chevallier, R. 1976. *Roman Roads*, trans. N. H. Field. Berkeley: University of California Press.

Cuntz, O., ed. 1929. *Itineraria Romana*, I: *Itineraria Antonini Augusti et Burgidalense*. Leipzig: Teubner.

Dupont, C. 1973. "Constantin et les Diocèses." In *Studi in Memoria di Guido Donatuti*, vol. 1, 309–36. Milan: Cisalpino–La Goliardica.

Ellis, L. and F. Kidner, eds. 2004. *Travel, Communication and Geography in Late Antiquity. Sacred and Profane*. Aldershot: Ashgate.

Graham, S. 2006. "Networks, Agent-based Models and the Antonine Itineraries: Implications for Roman Archaeology." *Journal of Mediterranean Archaeology* 19: 45–64.

Haldon, J. F. 2005. "Economy and Administration: How Did the Empire Work?" In Maas 2005, 2–59.

Hansen, M. F. 2003. *The Eloquence of Appropriation. Prolegomena to Understanding of Spolia in Early Christian Rome* (*Analecta Romana Instituti Danici*, Supplementa 33). Rome: Quasar.

Hartigan, J. A. and M. A. Wong. 1979. "A K-Means Clustering Algorithm." *Applied Statistics* 28.1: 100–8.

Holum, K. 2005. "The Classical City in the Sixth Century." In Maas 2005, 87–112.

Isaac, B. and I. Roll. 1982. *Roman Roads in Judaea*, I: *The Legio-Scythopolis Road* (BAR International Series 141). Oxford: Tempus Reparatum.

Kuhoff, W. 2001. *Diokletian und dei Epoche der Tetrarchie. Das römische Reich zwischen Krisenbewältigung und Neuaufbau (284–313 n.Chr.)*. Frankfurt/Main: Peter Lang.

Lo Cascio, E. 2005. "The New State of Diocletian and Constantine: From the Tetrarchy to the Reunification of the Empire." In A. K. Bowman et al., eds., *The Cambridge Ancient History*, XII. *The Crisis of Empire, A.D. 193–337*, 170–83. Cambridge: Cambridge University Press.

Maas, M., ed., 2005. *The Cambridge Companion to the Age of Justinian*. Cambridge: Cambridge University Press.

Noethlichs, K. L. 1982. "Zur Entstehung der Diözesen als Mittelinstanz des spätrömischen Verwaltungssystem." *Historia* 31: 70–81.

Radke, G. 1973. *Viae Publicae Romanae*. Stuttgart: Druckenmüller.

Reed, N. 1978. "Pattern and Purpose in the Antonine Itinerary." *American Journal of Philology* 99.2: 228–54.

Rees, R. 2004. *Diocletian and the Tetrarchy*. Edinburgh: Edinburgh University Press.

Salway, B. 2001. "Travel, *Itineraria* and *Tabellaria*." In Adams and Laurence 2001, 22–66.

Salway, B. 2007. "The Perception and Description of Space in Roman Itineraries." In M. Rathmann, ed., *Wahrnehmung und Erfassung geographischer Räume in der Antike*, 181–209. Mainz am Rhein: Philipp von Zabern.

Scott, J. P. 2000. *Social Network Analysis: A Handbook*, 2nd edn. London: Sage.

Slootjes, D. 2006. *The Governor and his Subjects in the Later Roman Empire*. Leiden: Brill.

Sotinel, C. 2006. "La circulation de l'information dans les Églises." In L. Capdetrey and J. Nelis-Clément, eds., *La circulation de l'information dans les états antiques*, 177–94. Paris: de Boccard.

Talbert, R. J. A. 2002. Review of Adams 2001. *American Journal of Philology* 123.3: 529–34.

Talbert, R. J. A. 2007. "Author, Audience and the Roman Empire in the *Antonine Itinerary*." In R. Haensch and J. Heinrichs, eds., *Herrschen und Verwalten. Der Alltag der römischen Administration in der Hohen Kaiserzeit*, 256–70. Cologne: Böhlau.

Tsafrir, Y. 1986. "The Maps Used by Theodosius: On the Pilgrim Maps of the Holy Land and Jerusalem in the Sixth Century C.E." *Dumbarton Oaks Papers* 40: 129–45.

Ward-Perkins, B. 1984. *From Classical Antiquity to the Middle Ages: Urban Public Building in Northern and Central Italy, AD 300–850*. Oxford: Oxford University Press.

Ward-Perkins, B. 2000. "Specialized Production and Exchange." In A. Cameron et al., eds., *The Cambridge Ancient History*, XIV. *Late Antiquity: Empire and Successors A.D.425–600*, 346–91. Cambridge: Cambridge University Press.

Wilkinson, J. 2002. *Jerusalem Pilgrims Before the Crusades*. Warminster: Aris & Phillips.

14

Jews and News: The Interaction of Private and Official Communication-Networks in Jewish History[1]

Adam Silverstein

Highways and other communication-networks are some of the means through which people have interacted with each other. In the pre-modern period, practical technological limitations have meant that communication-networks were also about people's interaction with nature: no matter how wealthy or powerful a pre-modern ruler was, he was always restricted by the same topographical and geographical realities that dictated the movement of his poorer and weaker subjects. Thus, the story of pre-modern communications is richly layered with sub-plots about the mountains, deserts, rivers, and steppes that hampered communications, as well as the often ingenious ways in which these obstacles were negotiated by rulers and by travelers themselves.

This complexity would suggest that sensible studies of pre-modern communications should be undertaken along regional or political lines – analysing, on the one hand, how a particular region's landscape helped or hindered communications and, on the other, how a particular ruler or dynasty met such challenges, if at all. In this context, the present chapter attempts to show that our understanding of pre-modern communications might benefit, too, from an analysis of the ways in which religion influenced the contours of highways and communication-networks in history. Specifically, I isolate Judaism in the Near East – from late antiquity until the Early Modern period – as an intriguing case-study for the purpose. My reasons are twofold. First, Jews communicated a lot and, crucially, talked a lot about their interchanges, thus allowing us to draw a fairly detailed picture of their experiences. Second, Judaism in the region and periods under consideration here was stateless.

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.

Hence, unlike in the medieval Islamic case, the lines between Judaism as a religion and Judaism as a political entity are not in danger of being blurred. If Jews established methods of communication in this period, it was in order to meet their religious and communal needs; the nature of their communication-networks may therefore be attributed to religion itself. The geographical and topographical realities of the Near East certainly shaped the ways in which Jews communicated, but – as will emerge from what follows – so too did religious considerations. In other words, lurking behind the interaction between Jews and highways is the more significant interaction between God and mother nature.

The Talmudic Period

Jews became stateless in the year 70, when the Romans destroyed the Temple in Jerusalem and decided against rebuilding it. As Judaism in the previous centuries had been largely centered on the Temple, religious leaders at the time were forced to reformulate their religion's beliefs and rituals in the aftermath of the Temple's destruction. A record of this reformulation is contained in the Mishna (ca. 200), a laconic, legalistic text composed in the Holy Land, which answered many questions for Jews at the time while also creating new ones.[2] These new questions were answered in the Talmud, of which there were actually two: the Jerusalem or Palestinian Talmud (ca. 400), and the Babylonian Talmud (ca. 500). It is the Babylonian Talmud that eventually acquired authoritative status throughout the Jewish world, and it is this text that is usually referred to when speaking of "the Talmud."[3] This Talmud records the rabbis' elaborate discussions and analyses of the Mishna's rulings, as they pertained to Jews living in Babylonia, from the third to the sixth centuries. For all their scholarly and spiritual strengths, the Talmudic rabbis had one failing that serves our purposes remarkably well: they could not stick to the point. Thus, matters of ostensible simplicity are fleshed out in unexpected ways that often tell us more about daily life in Sasanid Babylonia than they do about the specific legal issue that is being discussed.

We know that the Sasanid empire, whose capital Ctesiphon was located in convenient proximity to the major Talmudic academies of Iraq, possessed a highly developed postal system that rivalled the equivalent Roman service (*cursus publicus*) and even surpassed it, according to Procopius in the sixth century (*Secret History* 30.8). In consequence, the Jews of the Talmud would have benefited indirectly from the existence of safe, delineated routes and from the culture of correspondence that surrounded them. Indeed, there are dozens of references in the Talmud to "letters" (sing. *iggereth*)[4] being sent (*šálaḥ*) by rabbis, usually containing legal rulings that came to be known as "Responsa."[5] The Responsa-system worked as follows: Jews living outside the immediate vicinity of the Talmudic academies could send specific questions of religious or legal relevance to a religious authority based in one of the academies. The rabbi there would write his ruling on the same page and then have it returned to the original sender, thereby establishing a binding ruling for the community. Many thousands of Responsa survive; their content and quantity attest to the fact that sending and receiving letters of this sort was a regular occurrence rather than an exceptional one.[6]

Circular letters could also be issued from the rabbis to inform Jews in outlying lands of a ruling that related to Jews everywhere. The geographical scope of this correspondence is remarkable and seems routinely to have transcended the usual political boundaries of the time. In one instance recorded in the Talmud,[7] we are told that Rabban Gamliel – based in Roman Palestine – instructed his scribe Yohanan to write three letters on his behalf, saying:

> Take one scroll and write, “To our brethren in Upper Galilee and to our brethren in Lower Galilee, may your peace increase. We hereby inform you that the time of removal of tithes has arrived so that it is time to separate tithes from the vats of olives.” And take one scroll and write, “To our brethren of the South: may your peace increase. We hereby inform you that the time of removal has arrived so that it is time to separate tithes from the sheaves of the ears of grain.” And take one scroll and write, “To our brethren of the Diaspora in Babylonia and to our brethren in Media, and to all the rest of the Diaspora of Israel, may your peace increase forever. We hereby inform you that the doves are young and the sheep are tender and the time of ripening of the grain has not yet arrived and it is proper in my opinion and in the opinion of my colleagues to add thirty days to the year.”[8]

That a rabbi based in Roman Palestine could reliably correspond with Jews in Sasanid Babylonia and Media points to the fact that in some ways Jews were independent of the political realities that might otherwise have had a formative influence on unofficial communication-networks.

This said, it is most likely that Jews in late antique Babylonia were very much the product of their Sasanid environment. Not only did they share the topography, geography, and general worldview of their Persian masters (Silverstein 2008), but it would also appear that their methods of communication were modeled on those of their rulers and exposed to the same disruptions. The point may be illustrated by returning to Rabban Gamliel’s letters to the Diaspora, quoted above. They demonstrate the extent to which Jews everywhere relied on their co-religionists in the Holy Land for issues relating to the Jewish calendar. As rabbinic Judaism follows a lunar calendar, the sighting of the new moon has a decisive impact on the dating of festivals and other holy days in the calendar. The moon had to be sighted in the Holy Land, of course, and the news of a new month’s beginning then had to reach Jews everywhere within a week or two (as most Jewish festivals occur between one and two weeks into a particular month). In order to convey the sighting of the moon to Jews in the Diaspora, a system of beacons was created that linked the Holy Land with Babylonia. By the mid-Sasanid period, however, this system had to be replaced, because a group of sectarians managed to sabotage it by lighting fires on mountaintops even before the new moon was sighted, thereby setting off the chain of beacons throughout the Diaspora on the wrong day.[9] Therefore, a network of couriers, who brought the news from Jerusalem to Iraq in person, was instituted instead.

Of particular interest here is the point that, although optical signaling was used in the Near East from Babylonian times through the Seleucid and early Sasanid periods, this system evidently did not survive the administrative reforms of Shapur II (309–79). In other words, while the Talmud provides a perfectly reasonable explanation for the cessation of optical-signalling to convey the news that the new moon has been sighted, it would be rash to overlook the fact that similar developments in Sasanid communications were occurring at roughly the same time.[10]

Nonetheless, Jewish communication-systems in the Talmudic period were in many ways shaped by peculiarly Jewish concerns that would not have occurred to the Sasanid authorities. Two examples may suffice. The first concerns observance of the Sabbath, the practical details of which were still being hammered out in Talmudic times. In a Talmudic tractate dedicated to the dos-and-don'ts of Sabbath observance, we are told that:

> One may not send letters (*iggeroth*) with a Gentile on a Friday; however on a Wednesday or a Thursday it is permitted. It was said about Rabbi Yose the Cohen and others say it was said about Rabbi Yose the pious, that his handwriting was never found in the possession of a Gentile.[11]

The rabbis then explain that one *may* send a letter for a gentile to deliver on Friday if a single fee for the entire job is stipulated (as opposed to an hourly rate). In this way, a Jew would not be employing a gentile for work specifically carried out on Saturday. If a fee for the entire job was *not* stipulated, then the followers of Hillel say that a Jew cannot send a letter with a gentile on Friday unless there is time for him to reach the city-limits by Saturday; the followers of Shammai, by contrast, say that the gentile must have sufficient time to reach his destination by then. In reconciling the divergent views on the matter, the rabbis proceed to distinguish between those cities that have a postal-station (*bei do'ar*) and those that do not.[12] The conclusion of the Talmud is that there are distinct cases, but all agree that in no case is it ever permitted to insist that the gentile transport and deliver a letter on the Sabbath. Obviously, Sabbath-observance would have been a particularly Jewish concern.

A second way in which Jewish communication-networks were influenced by religion involves the prohibition current at the time against writing down the "Oral Law." In broad terms, the Oral Law consisted of the accepted interpretation of the Bible (the "Written Law"); this was believed to have been revealed to Moses along with the Written Law, and hence it enjoys a similarly authoritative status. The "accepted interpretation" of the Written Law was, of course, whatever the rabbis said about it. Thus, the Responsa literature – consisting, as it did, of the rabbis' interpretations of the Biblical code – could not be committed to writing. In a fascinating case preserved in the Talmud, we are told:

> Rabbi Dimi said, "If I could find people travelling to Babylonia, I would write a letter and send it to Rabbi Joseph" … (the Talmud then asks) But if Rabbi Dimi would have had the opportunity to send the letter, would it have been permissible for him to send

> it? Rabbi Abba the son of Rabbi Chiya bar Abba said in the name of Rabbi Yohanan: "One who writes down the laws of the Oral Torah is like one who burns the Torah and one who studies from these manuscripts gains no reward."[13]

Despite this legal hurdle, it is clear that letters containing the Oral Law were in fact in circulation, and in great quantities. We even hear of discussions concerning the type of ink to be used – including a tantalizing discussion of invisible ink[14] – and the use of codes in conveying written messages.[15] Indeed, sending letters containing the Oral Law was such a ubiquitous practice that it became something of a *topos* in Talmudic discussions.[16] Very often, these letters were described by the Babylonian rabbis as being from "the West," that is, from Palestine.[17] Again, we are confronted with the surprising likelihood that Jewish communication-networks in the Talmudic period were "international" in geographical scope.

Despite the impressive volume of correspondence, it would appear that the actual methods of conveying written letters were haphazard. Although the means for transmitting the sighting of the new moon was in theory highly regulated and systematized, we are frequently reminded that in practice the successful delivery of a letter might hinge on chance rather than on a well-oiled postal service. Rabbi Dimi's declaration just quoted caught the rabbis' attention for its suggestion that he would actually write down the Oral Law. It is more likely to grab *our* attention, however, for the hope that prefaces it: "If I could find people travelling to Babylonia, I would write a letter and send it." Clearly, by Near Eastern standards, the irregular communication-networks at the disposal of the Talmudic rabbis left much to be desired. For a regular and sophisticated *system* of Jewish communication and correspondence, we must turn instead to the Islamic period.

The Islamic Period

The rise of Islam in the seventh century is generally seen to have been beneficial for Jews in the Near East. Those who had been living in former Byzantine provinces were no longer persecuted and, among other improvements to their status, they were now allowed to resettle in Jerusalem. Those who had been living in former Sasanid provinces were no longer subjected to irregular treatment at the hands of the Persian shahs; moreover, Jews here preferred to live under the Semitic monotheists who brought Islam to the region rather than under the Indo-Iranian dualists who had hitherto controlled it.

One of the long-term consequences of the Islamic conquests – beneficial to Jews in general and to their ability to communicate in particular – was the unification of the lands from Morocco to Central Asia under a single polity, across which Arabic was spread as a language of learning. This political and linguistic uniformity encouraged an unprecedented measure of mobility on the part of the region's inhabitants, and Jews for their part could be seen to have settled widely within the Islamic world. However, as the periphery of Near Eastern Jewry became increasingly scattered, the center of Jewish learning continued to be focused in Iraq, as before, in the Babylonian academies. In Jewish history this became known as the "Geonic period;" from the mid-eighth century, in Islamic history it became known as the "Abbasid period." As the Abbasids moved the capital of the Caliphate from Damascus to Baghdad, the Islamic and Jewish centers of gravity fortuitously overlapped in southern Iraq.

This region became the center of learning – both Jewish and Islamic – and of trade (again, irrespective of religion). These unique circumstances, coupled with the dispersal of Jewish communities throughout Islamic lands, combined to create a situation in which the need and occasions for Responsa increased considerably. For almost three hundred years, Jews living as far away as Spain or Central Asia relied on rabbis in Iraq for spiritual and ritual guidance. With the heavy traffic of merchants and other travelers criss-crossing the Islamic world, Jews in every part of it were afforded many opportunities for transporting correspondence to tap into Iraq's scholarly resources. During this period Rabbi Dimi's doubt about whether he could send his letter would have been unwarranted.

In the early Geonic period (ca. 650–900), however, a letter like his would not have been sent using a regular postal system. There was in fact such a system to serve Abbasid rulers, and presumably its infrastructure benefited other travelers too (as had been the case in the Sasanid period). Even so, Jewish correspondence was still being circulated through the serendipitous, although heavy, traffic of Jewish travelers. The famous Radhanite merchants are said to have linked Western Europe with India and China in the ninth century using their contacts with local Jewish communities as staging-posts along the way.[18] It is telling, too, that the earliest Persian letters dating from the Islamic period consist of merchant correspondence found on the Silk Road, written in Hebrew characters (Utas 1968).

That the Abbasids secured and provisioned the highways of their empire must surely have been welcomed by all travelers in the Near East, Jews and others. But, strangely enough, it was with the decline of the Abbasid route system that private Jewish communication-networks emerged. It would appear that the disintegration of Abbasid rule in the late ninth and tenth centuries contributed to the growth of an international Jewish communication-system rather than thwarting it. The scope of the present essay cannot accommodate a discussion of the reasons for the collapse of Abbasid authority throughout the Islamic world. Suffice it to say here that by the tenth century, Spain, North Africa, Egypt, and Syria, as well as large parts of Iran and Central Asia, were ruled by independent or semi-independent Muslim dynasties. While each developed some sort of postal system, and in several cases modeled it on the declining Abbasid one, a complex network of routes radiating from an international capital was no longer a feature of the Near East.[19] This gap – to the extent that it was addressed at all – was normally filled by "private" systems of communication.

Private postal systems in the medieval Islamic world were developed by both Muslims and Jews, but for very different reasons. Muslims created independent channels of communication to challenge the official systems or to work against them, usually in the context of a political rebellion. In the late-ninth century, for instance, we hear of the Carmathian rebels creating a pigeon-post system when organizing their uprising against the Abbasid authorities (Silverstein 2007, 114). However, private systems of an apolitical nature do not appear to have developed amongst Muslims. At first glance, this may seem an odd omission. Islam, too, is a legalistic religion along the lines of rabbinic Judaism, and Muslims likewise relied on the expertise of legal scholars in determining the details of their normative law. What Jews called "Responsa" were known to Muslims as "Fatwas." Even so, Fatwas never prompted the creation of private communication-networks, for two reasons. First, Islamic Law, from the earliest days of the religion, developed along regional lines. Hence, customary practice in one town might differ from that of another town. In these circumstances the need for a long-distance, "international" network of correspondence in order to transmit legal questions and answers never really emerged. Second, unlike the Jews, who were a small minority thinly scattered across Islamic lands, Muslims were concentrated in large numbers throughout the towns and cities of the Caliphate. Consequently, local centers were well provided with the legal-religious expertise necessary for the settling of religious disputes in a way that Judaism was not. Thus, although Jews everywhere relied on scholars in Iraq for their religious needs (which made frequent communication with the academies there essential), Muslims would have had little need for a communication-network in this context.

This said, the reliance of medieval Jews on their coreligionists in Iraq did not lead to the creation of a systematized, private postal network. Instead, the method by which Responsa were transmitted was closely linked to the funding needs of the Iraqi academies: "emissaries," who were sent to raise money for the academies from the wealthy Jews of outlying provinces, would relay letters to and from the rabbis in Iraq. Their contents comprised Responsa and other materials of relevance to Jews at the time – including festival-calendars, for instance, because the practice of sending messengers to report the sighting of the new moon had long been abandoned throughout the Diaspora. Consequently, the circulation of Responsa could be a rather slow affair, with letters and messengers being delayed or waylaid by communal or other concerns. Nonetheless, the arrangement *does* seem to have worked somehow or other, as the many hundreds of Responsa letters surviving from this period indicate.

From the middle of the tenth century onwards, developments throughout the Near East served to damage the arrangement and to foster the emergence of actual private communication-networks among Jews. In a nutshell, the fragmentation of the Islamic world relegated Iraq's position among both Muslims and Jews to that of a declining center of scholarship, and encouraged the creation of independent centers of learning – again, both Muslim and Jewish – in distant provinces of the Islamic world. These new cultural centers were of course greatly indebted to Abbasid scholarly traditions, insofar as it was Muslims and Jews trained in Iraq who exported their expertise to the provinces. What marks an important change is the Jews' ability to ensure that their communities were *not* dependent on contact with

Iraq. An account of the process by which the Jews of Umayyad Spain, for example, ended their reliance on the rabbis in Iraq is preserved by an eleventh-century Muslim author in his description of a high-ranking Jewish functionary at the time:

> [Hasday ibn Shaprut] was the first to open for Andalusian Jewry the gates of their science of jurisprudence, chronology, and other subjects. Previously, they had recourse to the Jews of Baghdad in order to learn the law of their faith and in order to adjust the calendar and determine the dates of their holidays. They used to bring from them (the Jews of Baghdad) a calculation for a span of a number of years, and from it, they were able to know when their seasons began and when their year commenced. When Hasday became attached to [the Spanish caliph] al-Hakam II, gaining his highest regard for his professional ability, his great talent, and his culture, he was able to procure through him the works of the Jews in the east which he desired. Then he taught the Jews of Spain that of which they had previously been ignorant. They were able as a result of this to dispense with the inconvenience which had burdened them.[20]

Hasday's privileged position at the court of the Spanish caliph allowed him to invest in the local Jewish community as a center of scholarship, thereby ending its reliance upon Iraq. Although Hasday was clearly exceptional, the general exodus of talent from Iraq in the tenth century led well-educated Jews to seek opportunities elsewhere. Many of them, attracted by the promise of Hasday's Spain, ended up in Andalusia, many others in Egypt (perhaps settling there having initially set out for Spain).

Egypt in this period was under the rule of the Shiite Fatimids. We are better informed about the Jews here than about those anywhere else until Ottoman times, thanks entirely to the accidental survival and discovery of the "Cairo Geniza." It comprises some 200,000 documents written in Hebrew characters and thus preserved by local Jews who did not want their holy language to be desecrated through ordinary methods of disposal or "recycling." For our purposes, the Cairo Geniza is of enormous importance for the evidence it provides of a private communication-network operated by Jews at the time. Shelomo Goitein, the most important scholar of these documents, has pieced together a detailed picture of what he calls a "commercial mail service," run by Fatimid Jews but covering a geographical range that exceeded Egypt and Syria, both eastwards and westwards.[21]

This commercial mail service delivered letters to and from merchants and pilgrims, as well as other travelers and their families. The rates at which mail was sent were very reasonable, and certainly not prohibitive for ordinary people. In the broadest of terms, mail was transmitted along two major routes: to "the West" and to "the East." The former route was often subject to delays and generally the less regular of the two; along the latter – deemed to be efficient and secure – mail was delivered on a weekly basis. Those sending a letter to the east would even receive confirmation of its receipt at the other end of the route. From the names of known couriers, it would appear that most were Muslims rather than Jews (though the Geniza correspondents were always Jews). Tellingly, the problem of using a gentile courier who might be traveling on the Sabbath, as discussed in the Talmud, does not seem to have arisen; this communication-network was a professional, systematized organization. There was even the option of paying a slightly higher price than normal for an express delivery service, and postal "agencies" were developed to regulate and control these complex operations.

What is particularly noteworthy, aside from the mere existence of such a system, is the fact that it was *not* indebted to any official methods of communication employed by the Fatimid rulers. In fact, a careful consideration of the Fatimids' own postal arrangements reveals that they had no system (Silverstein 2007, 121–5). Instead, there are references – in the Geniza, for instance – to Fatimid officials making use of the private, commercial mail service operating in their lands. Presumably the Fatimid rulers were absolved of the ordinary fees and were able to commandeer the services of couriers at will. Even so, the mere fact that in this case private postal initiatives were leading the official ones rather than following them – perhaps even obviating the need for official ones – is in sharp contrast to the expected patterns of Near Eastern history.

It is no coincidence that the commercial mail service was based in Egypt, a western province of the Islamic world. Although the emergence of independent dynasties from among the rubble of the Abbasid empire created a politically fragmented Islamic world, its effect on Jewish history was somewhat different: Judaism retained a cultural center of gravity that shifted westwards, focusing on Egyptian, North African, Spanish, and Western European communities. That the postal developments in this Mediterranean orbit were of enduring significance is demonstrated by the famous decrees that the leading German rabbi, Rabbenu Gershom (960–1028), is said to have issued. Although his prohibition of polygamy may have had more far-reaching consequences than any of his other decrees, it is his edict concerning the inviolability of correspondence that still bears his name. Today traditionally educated Jewish schoolchildren still preface their letters with the acronym "*be-chad-rag*," which means [roughly] "By the decree of Rabbenu Gershom," warning uninvited readers of this rabbi's decision to excommunicate those who transgressed his rules. That a late-tenth-century German rabbi felt it necessary to issue an open decree against reading private letters attests to the importance of letter-writing among Jews at the time.

The remarkable story of Jews and news continued to unfold in Europe in the Middle Ages, but an account of this sequel must be left to medievalists. It is worth pointing out, however, that even in late medieval and early modern Europe Jewish culture was the hybrid product of both its local environment and its ancient traditions. European postal models – which were almost entirely privately organized, by universities for instance – shaped Jewish ones, but so did the Talmudic values and issues that had concerned Jews for over a millennium. In a number of Responsa written by the eighteenth-century rabbi Moses Sofer (1762–1839), the interaction between communications and Jewish law is highlighted. With reference to the marital status of an *aguna* – that is, a woman whose husband has gone missing – Moses Sofer based his answer on the existence (or not) of postal systems: if the man went missing in a land where there are no postal services at his disposal, we might still suspect that he was alive and well, yet incommunicado for practical reasons. But if he had traveled to a land with efficient postal ties and news of him *still* failed to reach his wife, then we must presume he is dead, and his wife would be free to remarry.[22]

To sum up: as is to be expected, Jews in the late antique and medieval Near East were very much the product of their political and natural environment. The Roman, Sasanid, and then Islamic rulers of the lands in which they lived were keen patrons of communication-networks while, as we have seen, for a number of reasons – some of them peculiar to Judaism – Jews were keen communicators. This chapter has sought to demonstrate some of the ways in which Jews and Judaism interacted with existing networks and, at times, even established independent ones. Unsurprisingly, these latter systems were shaped by politics and geography as much as was any other pre-modern communication-system. As I have tried to show, they were also – in the minds of their creators and users – shaped by religion. Mother nature may have dictated the form and infrastructure of Jewish communication-networks, but God is in the details.

Notes

1 All dates are CE. My thanks to Martin Goodman for his comments on a draft of this chapter.
2 Of course, the Mishna was many other things too; for present purposes, this short definition should suffice.
3 There are numerous editions, all of which follow (or refer in their margins to) the standard late-nineteenth-century Vilnius edition and its pagination.
4 The term is of great antiquity in the Near East, occurring as *egirtu* in Akkadian and as *'grh* in Aramaic documents from the Achaemenid period (Silverstein 2007, 27).
5 They are usually dated to the subsequent "Geonic" period because the earliest published volumes of questions-and-answers are Geonic. However, as we shall see, the activities described in published Responsa clearly predate that period.
6 On literacy levels among Jews of this period, see Hezser 2001.
7 The historicity of such accounts has been debated for centuries: cf. Kalmin 2006; Rubenstein 2003.
8 Babylonian Talmud, *Sanhedrin* 11b.
9 For the Talmud's discussion of the evolution of the system, see the Babylonian Talmud, *Rosh ha-Shana* 22b–23b; for a scholarly assessment, see Stern 2001.
10 Silverstein 2007, 25–6. Although medieval Muslims such as Maqrizi were aware of this episode in Jewish history, they did not relate it to the very real problem of sabotage to optical signals, one that the Mamluk authorities had to face during Maqrizi's own lifetime (Silverstein 2007, 177–8).
11 Babylonian Talmud, *Shabbat* 19a.
12 Although the term *do'ar* is said to be derived from the Pahlavi word *dad-war* (courthouse), the context suggests that the later meaning of "post office" is already implied; letters reaching the post office certainly makes more sense than courthouse or governor's house. See the Babylonian Talmud, *Avoda Zara* 26a, for the fact that this *bei do'ar* was to be manned as a corvée, recalling the practices of imperial postal systems in late antiquity (Silverstein 2007, 27 n. 124).

13 Babylonian Talmud, *Temura* 14a–b.
14 Babylonian Talmud, *Gittin* 19b. The rabbis in Palestine marveled at the fact that their colleagues in Babylonia developed the use of invisible ink to a high level (Jerusalem Talmud, *Shabbath* 12, 4).
15 Babylonian Talmud, *Ketubboth* 69a. Various rabbis are said to have had their own signature codes, with Rav drawing a fish in lieu of his name, Rabbi Chanina a palm branch, and Rabbi Chisda a single letter "samech" (*Gittin* 36a).
16 Babylonian Talmud, *Shabbath* 115a. Some rabbis, such as Ravin, were said to have been particularly prolific letter-writers: see *Nidda* 68a; *Baba Meṣiʿa* 114a; *Baba Bathra* 139a.
17 Babylonian Talmud, *Baba Bathra* 41b; *Shevuoth* 48b; *Sanhedrin* 29a; etc.
18 For the Radhanites and other globe-trotting Jews in this period, see Silverstein 2007a.
19 These developments are a central theme of Silverstein 2007.
20 Sa'id al-Andalusi in Stillman 1979, 210.
21 See Goitein 1964; Silverstein, 2007, 116–25.
22 Chatam Sofer: *Teshuvoth Khatam Sofer, Even Ha-`Ezer*, vol. 1, chs. 53, 58, 65.

References

Chatam Sofer. 1973. *Teshuvoth Khatam Sofer*, vol. 1, ed. Schreiber. Jerusalem: Mahon Hatam Sofer.

Goitein, S. D. 1964. "The Commercial Mail Service in Medieval Islam." *Journal of the American Oriental Society* 84: 118–23.

Hezser, C. 2001. *Jewish Literacy in Roman Palestine*. Tübingen: Mohr Siebeck.

Kalmin, R. L. 2006. *Jewish Babylonia between Persia and Roman Palestine*. Oxford: Oxford University Press.

Rubenstein, J. L. 2003. *The Culture of the Babylonian Talmud*. Baltimore: Johns Hopkins University Press.

Silverstein, A. J. 2007. *Postal Systems in the Pre-Modern Islamic World*. Cambridge: Cambridge University Press.

Silverstein, A. J. 2007a. "From Markets to Marvels: Jews on the Maritime Route to China, ca. 850–ca. 950 CE." *Journal of Jewish Studies* 58: 91–104.

Silverstein, A. J. 2008. "The Medieval Islamic Worldview: Arabic Geography in its Historical Context." In K. A. Raaflaub and R. J. A. Talbert, eds., *Geography and Ethnography: Perceptions of the World in Pre-Modern Societies*, 273–90. Oxford: Wiley-Blackwell.

Stern, S. 2001. *Calendar and Community: A History of the Jewish Calendar, 2nd Century BCE–10th Century CE*. Oxford: Oxford University Press.

Stillman, N. A. 1979. *The Jews of Arab Lands: A History and Sourcebook*. Philadelphia: Jewish Publication Society of America.

Utas, B. 1968. "The Judeo-Persian Fragment from Dandan Uiliq." *Orientalia Suecana* 17: 123–36.

Index

Highways, Byways, and Road Systems in the Pre-Modern World, First Edition.
Edited by Susan E. Alcock, John Bodel, and Richard J. A. Talbert.