Economies of the Edge

Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE)

Edited by
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This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 742645).

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at https://dnb.dnb.de.

Published by Heidelberg University Publishing (heiUP), 2025

Heidelberg University/Heidelberg University Library
Heidelberg University Publishing (heiUP)
Grabengasse 1, 69117 Heidelberg, Germany
https://heiup.uni-heidelberg.de
e-mail: ub@ub.uni-heidelberg.de

The electronic open access version of this work is permanently available on Heidelberg University Publishing's website:
https://heiup.uni-heidelberg.de
urn: urn:nbn:de:bsz:16-heiup-book-1582-5
doi: https://doi.org/10.17885/heiup.1582

Cover illustration: Nicholas Roerich, "Study for a Painting," 1922.

ISBN 978-3-96822-327-8 (Hardcover)
ISBN 978-3-96822-326-1 (PDF)

Table of Contents

Published in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025. DOI: https://doi.org/10.17885/heiup.1582

Acknowledgments

This volume grew out of the 2019 conference "Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE)," held in Freiburg, Germany. That conference was an early component of the research project "Beyond the Silk Road: Economic Development, Frontier-Zones, and Inter-Imperiality in the Afro-Eurasian World Region (300 BCE to 300 CE)," with Sitta von Reden as principal investigator and made possible through the award of an Advanced Grant by the European Research Council from 2017 to 2022 (ERC-AdG 742645). We want to thank the ERC for their financial support of this conference and the wider research.

We are extremely grateful to all participants in the conference, whose early input helped shape our later research in Freiburg and played an important role in the development of the project over the subsequent years. More information about the research can be found on our website: www.basar.uni-freiburg.de. We wish to thank Sitta for bringing us all together and guiding the sprawling research project to completion amid the challenging pandemic years. We also benefited from our colleagues at the Department of Ancient History at the University of Freiburg, especially Milinda Hoo and Marco Ferrario. Special thanks go to Clara Hillebrecht, who was our tireless assistant in the early years of the project, as well as all the other students who helped with the conference, and Quill Kukuj, who assisted in the proofreading of the volume. We also thank Anja Konopka at Heidelberg University Publishing for her patience and helpfulness in the course of the publication process.

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Fabian, Lara et al. (Eds.): Acknowledgments, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. vii.
DOI: https://doi.org/10.17885/heiup.1582.c22717

Introduction

Eli J. S. Weaverdyck and Mamta Dwivedi

In the six centuries between 300 BCE and 300 CE, two large-scale developments occurred that have captured the attention of global historians: first, empires subjugated increasingly large swathes of Eurasia and North Africa; second, more goods moved more frequently across the Afro-Eurasian world region than ever before. The relationship between these two developments has long been acknowledged in scholarship on the ancient Silk Road, but we believe there is room to interrogate it further. The notion of the "Silk Road," with its implications of discrete routes along which goods moved according to the laws of supply and demand, has been called into serious question, re-opening the problem of how things actually moved across this space.[1] Not only the routes that they traveled but, more importantly, the mechanisms by which they were exchanged must be reconsidered. Furthermore, while previous scholarship has tended to emphasize developments in imperial cores, we suggest that the spaces on the edge of and in between empires—frontiers—may be a more fruitful focus. These, after all, are the places where goods had to cross boundaries between different systems. Finally, the Afro-Eurasian world is a vast space whose history has been studied within numerous different disciplines. No single scholar could possibly command all the specialized knowledge required to adequately account for the intertwined political and economic developments in which we are interested. A community of specialists is needed.

These are the considerations that lie behind the project "Beyond the Silk Road: Economic Development, Frontier Zones, and Inter-Imperiality in the Afro-Eurasian World Region, 300 BCE to 300 CE" (BaSaR) and the 2019 conference "Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE)." BaSaR, under the direction of Sitta von Reden, consists of a core team of five postdoctoral researchers and a range of affiliated scholars.[2] Together, we have produced the *Handbook of Ancient Afro-Eurasian Economies* in three volumes.[3] Volume 1, *Contexts*, describes the sociopolitical situations of the various empires and regions involved as well as the evidence available for the economic history of each and the scholarly traditions that have studied them. Volume 2, *Local, Regional, and*

1 Chin 2013; Rezakhani 2010; Selbitschka 2018.
2 For more information, see https://basar.uni-freiburg.de.
3 Von Reden 2020–2023.

Weaverdyck, Eli J. S. and Dwivedi, Mamta: Introduction, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 1–11. DOI: https://doi.org/10.17885/heiup.1582.c22718

Imperial Economies, examines the economic actors, tools, and processes at work within each region. Volume 3, *Frontier-Zone Processes and Transimperial Exchange*, investigates economic development within a variety of frontier zones to better understand the interplay between local and inter-regional or inter-imperial economic dynamics.

BaSaR organized the 2019 conference to bring together leading experts in the economic history of different parts of Afro-Eurasia whose work, while well known in their respective fields, is rarely put into conversation with each other. Our aim was to assemble a variety of empirically grounded case studies of frontier zone economies that, together, would assist the participants in rethinking the question of "Silk Road" exchange. In the process, we experimented with different conceptual frameworks. In particular, two broadly contrasting frameworks came to the fore: one framework asks us to think in terms of political power and centers and peripheries, although some papers operated within this framework in order to challenge it; the other asks us to think in terms of networks, focusing on nodes in frontier zones or the ways that people moved between these nodes. These frameworks were definitely not straitjackets. Most contributors adopted both to a greater or lesser extent, and some papers combined them, focusing on connectivity between political systems. As a result, we were gratified to see, a lively discussion about the terms in which to examine frontier economies and the ancient trans-continental movements of goods (the Silk Road) arose. That debate is reflected in the structure of this volume.

The Structure of This Book

We group the chapters of this volume into two thematic parts: (1) Peripheries and Frontiers, and (2) Nodes and Flows. While all contributions discuss frontiers in different ways, the first part focuses on how economic development in peripheral regions was affected by interactions with political cores. The chapters in the second part focus more on the networks that cross edges and bind multiple regions together. Each section intentionally juxtaposes explorations from a range of geographical spaces and emanating from a variety of disciplinary contexts.

Part 1 includes contributions that investigate the political dynamics of frontier regions. The expansion of empires in the middle of the first millennium BCE redefined numerous areas in the Afro-Eurasian region as peripheral—from an imperial perspective. However, these regions functioned not only as appendages to an imperial heartland but also as centers in their own right. They were often highly productive zones with resources valued by imperial centers, which developed new institutional methods to control, capture, or redistribute those resources. They also functioned as meeting places of sociopolitical systems, where influences were transferred and

transformed between polities. Thus, the very peripherality of frontier regions facilitated political innovations.

In this part, Maxim Korolkov investigates the regional economic impacts of the expansion of the Qin and Han Empires into southern East Asia. Luca Olivieri traces economic developments in Swat, which exported grain in large quantities to various different empires. Finally, Michael Speidel examines how and why Roman methods of control in northern Arabia changed with the transformation of the Nabataean kingdom into the Roman province of Arabia.

Part 2 focuses less on politics and more on the acephalous networks that spanned and often traversed political boundaries. These are the networks along which goods from China arrived in the Roman Empire, the very phenomenon that the notion of the "Silk Road" purports to explain. However, moving beyond the outdated notion of stable, physical "roads" or "routes" re-opens the question of how flows of information and goods actually occurred and what impacts they had. The contributions in this part examine these flows at different spatial scales. At the local scale, the investigation of ports and border markets provides fine-grained data about the various ways in which people from different backgrounds came together and organized the transfer of goods and ideas. At the same time, these places acted as nodes within broader networks. The analysis of these networks and the mechanisms that allowed people, goods, and ideas to move over great distances and across physical and social divides elucidates larger-scale processes. Together, these large-scale network dynamics and small-scale, local infrastructures of exchange constitute the trans-continental connectivity popularly known as the "Silk Road."

In Part 2, Sören Stark, relying primarily on medieval evidence, examines market places on the borders of the Bukhara oasis in Central Asia as venues for regional and long-distance exchange. Federico De Romanis explicates the roles of Barygaza in intermediating between various trade networks, with particular focus on the integration of different coinage systems. Stefan Hauser uses evidence from the site of Charax to examine the role of Mesene in long-distance trade and argue for a more active Arsacid presence in maritime connectivity. Rocco Palermo looks at regional patterns of interaction in northern Mesopotamia to push against traditional understandings of frontiers. Mark Altaweel and Andrea Squitieri analyze settlement patterns and evidence for unskilled wage labor to investigate how the growth of empires influenced the movement of people and labor markets in the Near East. Miguel Versluys closes the volume with a meditation on network power, globalization, and innovation in the ancient Mediterranean.

Frontier Conceptions and "Frontier" as Heuristic

While the subject of our conference was economic processes in frontier zones, we refrained from specifying *a priori* a strict conception of what constituted a frontier. This gave contributors the flexibility to define "edges" in a way that best facilitated their own research in their own context. Nevertheless, common conceptions emerged—a result, surely, of more than 100 years of historical and archaeological scholarship on frontiers. The history of that scholarship has been well summarized elsewhere, and we will not repeat it here.[4] We see the designation of "frontier," with its attendant connotations of peripherality and/or inbetweenness, as a heuristic device that structures inquiry into the economic processes of a region. Specifically, the frontier paradigm encompasses three broad sets of overlapping characteristics that draw focus toward questions of interaction across space and between different geographic scales, questions of dynamic movement and expansion, and questions about the meeting and negotiation of difference. Each contribution to this volume addresses one or more of these questions in different ways.

Because the frontier concept is inherently *relational*—a place is only a frontier in relation to one or more cores—it leads us to ask questions about the impacts of interaction across space and about the intersection of processes operating at different geographical scales. Frontier zones interact with cores, and local processes in the frontier zone are bound up in larger-scale processes that transcend it. Such a relational approach has a long history. While core–periphery models such as those of Immanual Wallerstein inherently privilege the agency of the core and its impact on the frontier,[5] the impact of frontier processes on the core to which they are peripheral has been acknowledged and studied since the days of Turner.[6] The racism and colonialism that infect early scholarship on frontiers makes it difficult to work with some of these ideas, and post-colonial scholarship continues to highlight and confront that legacy.[7] Nevertheless, the questions about systemic interactions marked by power imbalance and operating at multiple scales continue to stimulate valuable scholarship.

Frontiers are also, usually, conceived of in *dynamic* terms. A frontier is a place into which something is expanding (state power, a demographic community, etc.), so the

4 For the discussion of frontiers in the Roman context, see von Reden and Speidel 2019. On frontier/borderland studies in an archaeological perspective, see Lightfoot and Martinez 1995; Naum 2010; Parker 2006.

5 Wallerstein 1974; for core–periphery models of frontiers in archaeology, see Feuer 2016.

6 Turner 1893; for a more recent, archaeological example, see Düring and Stek 2018.

7 See Beaule 2017; Naum 2010 for overviews. N. Green 2018 takes the agency of change away from imperial cultures when focusing on the seas as spaces where non-imperial, vernacular cultures meet to form systems and networks.

designation can focus attention on medium- and long-term dynamics.[8] Often, because of the example of modern colonialism, this dynamic is conceived of in demographic terms. Settlers from one group move into an area that is either unoccupied or (more often and more realistically) occupied by others, and the place becomes a frontier until it develops into something that resembles the place of origin of the immigrants, i.e., is "tamed."[9] However, in the ancient world, the degree of demographic movement from a core into a frontier is often questionable. Nevertheless, a similar paradigm can be adopted by focusing on the extension and development of power relations—empire—rather than population. In this paradigm, the frontier dynamic begins when an empire begins to exert control over a space and ends when imperial control in that space resembles control in more core regions of the empire.[10]

Frontiers, finally, are places where *differences meet*.[11] Owen Lattimore influentially emphasized the meeting of different ecological and economic systems, which he saw as underpinning different social structural systems, on China's northern frontier.[12] A prime focus of postcolonial frontier research, though, is on the meeting of different cultural systems and regimes of value.[13] Investigations are focused on conceptualizing these encounters, the ways in which difference is negotiated, the impact of these negotiations on the entities meeting, and the emergence of something new as a result.[14] However, it is also important to leave space for the role of violence, both as a tool in the negotiation of difference and as an effect of such negotiations.[15]

It is difficult to combine the above characteristics into a single, all-encompassing definition of frontier zones. Furthermore, the utility of such a definition, with which one could categorize historical situations as frontiers or not frontiers, for generating novel insights is dubious. Instead, the value of the frontier concept is in providing a heuristic device, a shared set of approaches that center *relationships* across space and scale, *dynamics* of expansion and transformation, and *meetings of difference* and their subsequent negotiations, which allows scholars to benefit from the work of their peers

8 Osterhammel 2014, 322–331 emphasizes this characteristic while discussing previous literature.

9 Indeed, Turner wrote his seminal essay in response to the completion of this process in the American West (Turner 1893).

10 Osterhammel 2014, 327–328.

11 Parker 2006 seeks to systematize the study of frontiers in precisely these terms by proposing a typology of borders of different types that may overlap in frontier zones. See also Osterhammel 2014, 356.

12 Lattimore 1962. See Whittaker 1994 for an application of Lattimore's ideas to the Roman frontiers.

13 Lightfoot and Martinez 1995; Naum 2010; Beaule 2017; U. M. Green and Costion 2017; N. Green 2018.

14 For example, Gallaway 2005 explains how the ecotonal zones, especially ports of trade, are places to look for changes in legal regimes, which are starkly different from their immediate inland neighbors.

15 Ferguson and Whitehead 1992; Fernández-Götz, Maschek, and Roymans 2020.

operating in very different historical contexts. Ultimately, we will ask how designating a certain place and time a "frontier zone" helps us understand the economic processes at play there. First, though, it is worth articulating explicitly the variety of "frontier" concepts at play in this volume.

The Frontier Heuristic in Use

All of the contributions in this volume make use of at least one of the three frontier characteristics described above. Many adopt the *relational* perspective, examining interactions between imperial power and places at the edge of its control and the interplay of local and transregional processes. Maxim Korolkov examines how regional elite networks and negotiations in southern East Asia incorporated and were changed by the extension of Qin and Han imperial power while also taking into account the position of his region within larger networks centered on the South China Sea. Stefan Hauser explores the position of Mesene and its capital Charax as a "missing link" between distant centers. Luca Olivieri traces the history of the Swat Valley to better delineate how external imperial power and demand for grain affected settlement patterns and the agricultural economy. Similarly, Rocco Palermo examines the impact of the expansion of Roman imperial power into northern Mesopotamia. Michael Speidel focuses on Roman imperial strategies for controlling northern Arabia and the Red Sea. Sören Stark examines border markets that were peripheral not to empires but to the cores of oasis polities that were themselves peripheral to larger regions, thereby integrating local, regional, and interregional scales of analysis. Miguel Versluys, while criticizing core–periphery perspectives, also considers how large-scale shifts in political power configurations impacted local economies in different ways.

In the course of examining these relationships, the contributors take on their *dynamic* nature, with a general focus on expansion from one place to another. In most cases, this was an expansion of power rather than a large-scale demographic movement. Olivieri shows that the demographic population of the Swat Valley remained stable even as different imperial power networks expanded into it. Similarly, Korolkov describes how the extension of Sinitic imperial power into the region of southern East Asia was accompanied by the flow of certain technologies from the imperial core to the frontier region, but he argues that there is little evidence for demographic movement from the core to the periphery. Speidel's discussion of the Roman incorporation of the Nabataean kingdom focuses not on the initial expansion of imperial power into the area—the kingdom had been a subordinate ally of the Roman Empire for over a century—but the extension of a particular type of governmental structure, the directly governed province. At a much smaller scale, Stark identifies a pull factor

drawing political power out of its core zone: in order to maximize the revenue from caravans, which would reduce their tax burden by selling some of their goods to the inhabitants of the steppe, oasis polities in Central Asia established tax collection points far beyond their well-established and demarcated political boundaries. For Versluys, the crucial thing that expands (and can also recede) is network connectivity, which is often associated with but is not identical to imperial power. On the other hand, Palermo points out that the Roman conquest of northern Mesopotamia did entail a demographic influx of at least several thousand individuals. These immigrants had an outsized economic impact because they were soldiers concentrated in cities that had previously had much lower populations. Altaweel and Squitieri focus explicitly on large-scale demographic mobility, but they see it as a consequence of imperial expansion and the erasure of political boundaries. In a way, they describe the situation that follows the completion of the frontier dynamic. In the process, they remind us that, while people might move into frontier zones, moving beyond them is costly. Hauser, finally, demonstrates that biases in contemporary research have left some regions of this vast interconnected space critically understudied, with deleterious consequences for our ability to understand systemic processes.

The expansion of something—be it power, connectivity, or a population—into a new space entails a *meeting of difference* that can be negotiated in a variety of ways, including through violence. Power structures and eliteness in southern East Asia were negotiated through a material cultural system that was common to the South China Sea, and the expansion of Han power into this region had varying effects on this culture. A violent rebellion in one place was followed by the replacement of older cultural forms by Han expressions of eliteness. In other places, the older forms persisted despite Han control. In contrast, documentary evidence from northern Mesopotamia shows Roman soldiers engaging in economic transactions with local individuals with apparent ease. On a broader geographic scale, Palermo argues that the Roman military conquest of the region entailed the improvement of a road network that ultimately facilitated movement across the imperial frontier. The enormous scale of ancient Charax, as discussed by Hauser, can be understood as another form of infrastructural development that both was prompted by and helped to facilitate the new economic opportunities.

Such meetings are not always bilateral. In the Swat Valley, incorporation into the Achaemenid Empire corresponds with the introduction of not only Iranian pottery forms but Indo-Gangetic ones as well, which were used alongside local forms. De Romanis's exploration of Barygaza focuses on how the differences between southern and northern terrestrial trade networks and the Indian Ocean maritime trade network were mediated, including through the simultaneous use of various scripts on coins and established methods of converting between a wide variety of coinage systems. Versluys goes further: he takes the meeting of difference *per se*, rather than any particular frontier

zone, as his object of study and argues that we should adopt the analytical tools of network analysis (particularly Grewal's network standards and network power) and globalization. While emphasizing connectivity, Versluys does not deny the existence of different cultural traditions from which individuals can draw. Indeed, he sees places where many differences meet, places often described as "peripheral," as particularly potent centers of innovation.

Major Themes and Frontier Phenomena

The goal of the conference was to better understand economic processes in frontier zones in order to rethink the concept of "Silk Road" exchange. In generalizing, theoretical work on frontiers, a variety of economically significant phenomena is often considered, including the environment, demography, settlement dynamics, and the presence or absence of state power. The narrowly focused, empirical works presented here take up these themes and reveal a certain degree of diversity in how they manifest in different contexts.

Frontier zones are often seen as environmentally marginal or, at least, situated on an ecotone.[16] Certainly, the steppe–desert environment of the Nabataean kingdom and northern Mesopotamia seems to fit this description, as does the border zone of the Bukhara oasis. Barygaza and Charax, as ports, sit at the ecotone of land and sea. The Swat Valley stands this picture on its head, though. The empires of the region were centered in ecologically marginal areas that were crossed by major trade routes, and the Swat Valley—nestled in the mountains, cut off from the trade routes, and distant from the political core—provided the agricultural surplus necessary for the state to survive. While politically peripheral, Swat is anything but environmentally marginal.

Demography has already been touched on to a certain extent. The primacy of Turner's work on the American frontier has led scholars to expect that frontier situations are characterized by the movement of one demographic group into a new area inhabited by one or more other groups and their subsequent encounters.[17] In this volume, however, we see different situations. There was indeed a demographic influx into Roman Mesopotamia, but its economic impact was out of proportion to its size.

16 Indeed, the role of ecology in limiting the expansion of empire and, therefore, in defining frontier zones is central to Lattimore 1962's work, taken up by Whittaker 1994, among others. Osterhammel, in contrast, focuses more on the ways that frontiers change the environment (2014, 375–391). An example of environmental ecotone, where forest zones work as frontiers limiting empires and affected by imperial agents, is commonly found in South Asian history. For example, see Parasher-Sen 1998; Trautmann 2009.

17 Turner 1893; Lattimore 1962; Osterhammel 2014, 322–327.

In southern East Asia, population movement was largely internal to the frontier zone. The Swat Valley displays remarkable demographic stability over the *longue durée*, despite political changes. The borderlands of oases in Central Asia are characterized by cyclical movement tied to pastoralism and long-distance trade rather than migration. And in western Asia and Egypt, Altaweel and Squitieri have shown that large-scale regular movement follows the dissolution of frontiers.

Demography and settlement patterns are closely related. Altaweel and Squitieri take increased inequality in settlement sizes—the growth of a few, very large settlements—in southwestern Asia as evidence for increased mobility, whether voluntary or coerced, resulting from imperial expansion. Korolkov argues that population movement in southern East Asia, often the result of conquest or state coercion, led to urbanization and the creation of spaces susceptible to state control. The rise of Barikot as an urban center in Swat had less to do with population movement and more to do with imperial control of the grain surplus. In Mesopotamia, the Roman Empire took advantage of a preexisting urban hierarchy to exert its control and, in the process, contributed to the growth of the largest cities. As demonstrated by Charax, such cities also developed under the Arsacids.

It is striking that, in this volume, discussions of urbanism so often invoke state power. It is all the more striking since frontier zones are often taken to be areas where state power is relatively weak as a result of distance from the political core.[18] Indeed, the chapters presented here demonstrate that imperial states had consistent, significant interests in frontier zones. Sinitic empires were concerned with controlling trade routes that connected the South China Sea to the imperial core as well as the forest products and precious metals produced in southern East Asia. Similarly, Roman interest in the Nabataean kingdom was part of a larger concern over trade between the Mediterranean, southern Arabia, and the Indian Ocean, as was Arsacid interest in Charax. The interests of Central Asian oasis states were also drawn to their border zones by trade and the revenue that they could extract. In contrast, the Swat Valley was cut off from major trade routes, but it drew the attention of a whole series of imperial states because of its own surplus production. At the same time, the examples of Gordion, the Kargha Oasis, and Seleukeia-Tigris adduced by Versluys demonstrate that state interest in a place can change quickly with alterations in political geography.

18 Feuer 2016, 18; 48–57; Osterhammel 2014, 327–328.

Conclusion: "Frontier" and the "Silk Road"

The economic processes at work in the frontier zones examined here are diverse, and the reader may justifiably ask how the collection of these case studies contributes to our understanding of local and regional economies on the one hand and the transcontinental movement of goods on the other. More generally, one might ask whether what we have called the frontier heuristic is useful in understanding economic processes. Certainly, the categorization of a place as a "frontier" at a given time should not be taken to imply a specific set of economic processes at work without further investigation. It is the direction of this investigation, we contend, that the frontier heuristic contributes. As we argued above, the ability to label a variety of historical contexts as "frontier zones" encourages us to ask similar questions about them: questions about the relationships between these zones and others and between processes operating at different scales; about the dynamics of expansion into these areas; and about the meeting and negotiation of difference.

These "frontier questions," we suggest, are precisely the ones that need to be asked in order to understand not only economic development in frontier zones but also the large-scale movement of goods across the Afro-Eurasian world region in general. As noted above, scholarship on the "Silk Road" tends to focus on major imperial centers and treats the people and places between these centers as intermediaries. But the ancient world was not a collection of nation-states, and we cannot study the ancient, transcontinental economy as if it were the sum of national economies. Both empire and networks are important parts of the larger story, but to understand how Chinese silk made it to Rome or, rather, the complex of socioeconomic processes that made such a thing possible, we must turn our gaze to the questions of relationships across space and scale, dynamic expansions, and meetings of difference. We must look, in other words, to the economies of the edge.

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Part 1
Peripheries and Frontiers

Early Sinitic Empires and the Frontier Zone
Economy in Southern East Asia

Maxim Korolkov

Introduction

During the period of ca. 400–100 BCE, the macro-region of southern East Asia—the territory roughly coinciding with the present-day People's Republic of China south of the Yangzi River (Fig. 1)—became part of the Sinitic states and empires. First, during the Warring States era (453–221 BCE), the states of Chu and Qin conquered large swathes of Yangzi valley. After 221 BCE, the Qin (221–207 BCE) and Han (202 BCE–220 CE) Empires incorporated the entire macro-region.

In retrospect, it is tempting to see the southward expansion as a "manifest destiny" of Sinitic empires: a great demographic and economic void that was bound to be filled by the numerous, technologically advanced, and industrious colonists from the empire's heartland in the Central Plains of northern China. However, the peripheralization of southern East Asia with regard to the Central Plains was a historical process, not a natural condition. Its acceleration after ca. 500 BCE had to do with political and socioeconomic transformations in the Sinitic world as well as within southern East Asia. Some of its contributing factors can be traced back to the earlier periods, starting from the East Asian "globalization" in the early Bronze Age (second millennium BCE), when metal prospecting and the quest for resources, technological knowledge, and technical experts (from craftsmen to horse-breeders) to shore up the elite's social power stimulated the expansion and cohering of several interaction spheres, including the inner Eurasian grasslands, the alluvial lowlands of East Asia, the upland massifs of Southeast Asia and southern China, and the sea-oriented coastal regions of the East and South China Seas.[1]

1 For recent discussions, see Shelach-Lavi 2015; Li 2018.

Korolkov, Maxim: Early Sinitic Empires and the Frontier Zone: Economy in Southern East Asia, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 15–44. DOI: https://doi.org/10.17885/heiup.1582.c22720

Each of these long-range interaction networks offered unique technological, organizational, and ideological repertoires for the aspiring rulers and elites to consolidate their wealth and authority, for the general populace to improve their life prospects, and for societies at large to enhance the cohesion necessary for more efficient exploitation of their environments and neighbors. One of these networks—the community of Sinitic polities that took shape by ca. 1000 BCE—gradually developed the forms of administrative, military, and economic organization that allowed its leaders to increasingly divert the resources of other networks toward the political centers located, with one major exception (the state of Chu), in the Central Plains. The world of multiple, intersecting interaction spaces was morphing into one dominant, imperial network that, after 221 BCE, became politically articulated as the Sinitic empire. It is in this specific context that it becomes possible to speak of southern East Asia as a frontier zone.

The first part of this essay sketches the geography of southern East Asia and traces the development of contacts among its regions as well as between them and the dynastic states that emerged in the Central Plains of northern China from the early second millennium BCE onward. These early contacts provide a context for understanding the southward expansion of the Qin and Han empires.

The remaking of southern East Asia into a frontier zone transformed the local communities, their environments, and the ways they interacted with the broader world. It also stimulated political, military, administrative, and economic–managerial innovation in the Sinitic empire, which shaped the historical trajectory of East Asia. The Qin and Han incorporation of the southern borderlands resulted in the formation of a Sino-Southeast Asian complex[2] and in the growth of long-range maritime exchanges: a process that many scholars consider central to the emergence of a medieval Eurasian world-system and, eventually, modern globalization.[3]

Traditional (and, to a considerable degree, also present-day) Chinese historiography typically describes the process by which southern East Asia became part of the Sinitic world in terms of an assimilation into a culturally and militarily superior civilization.[4] This narrative is undermined by recent archaeological and environmental-historical research, which not only pays attention to the local responses to Sinitic imperialism but also reassesses the direct impact of its agents. It has been argued, for example, that, in terms of its scale, the migration from the Central Plains to the southern borderlands, formerly perceived as a vital mechanism of incorporation into the empire, was less significant than the human mobility within southern East Asia.[5]

2 Chittick 2020, 9–19.
3 See, for example, Abu-Lughod 1989; Frank 1998; Marks 2007.
4 See, for example, Lin and Zhao 2001, 334.
5 Wu et al. 2019, 6751–6781; Chittick 2020, 363–370.

Natural conditions, particularly the intensive disease environment of the tropical zone, were probably central to migration patterns, just as they were to restricting the empire's ability to integrate conquered territories.[6]

These and other insights invite a reassessment of frontier zone processes in southern East Asia during the Qin and Han periods that would account for the impact of imperial agents, institutions, and policies on the one hand and for the non-imperial interactions at various levels, from local to inter-regional, on the other. It would also involve the identification of the empire's advantages as a framework for economic, cultural, and political interactions vis-à-vis other options available to the indigenous individuals and groups. As I have argued elsewhere, the transition from the command-economy organization of the Warring-States-period Qin to the market-oriented state finance of the Han era provides a background for understanding the factors underlying the consolidation of the early Sinitic empires and their incorporation of borderland regions: the expansion of commercial circuits, monetization, urbanization, and the dissemination of metropolitan consumption patterns.[7]

In the second part of this essay, I explore the development of a frontier zone economy in southern East Asia as a series of interrelated processes: intercommunal conflict and violence; migration and changes in settlement patterns; dissemination of technology and emergence of new industries; and monetization and strengthening of exchange circuits.

Despite their considerable success in integrating the local societies into their economic and political network, the early empires never succeeded in becoming the sole framework for their subjects' interactions with each other or the sole point of reference in their identity-making. It is the nature of transmitted written sources, especially the state-centered official historiography, that left the alternative networks less visible and less studied, a bias that the scholars of early and middle period China are only beginning to address.[8] The third part of the present paper outlines the contours of these non-imperial webs of interaction and discusses their impact on the dynamics of frontier zone economies in southern East Asia.

6 McNeill 1976, 76–80; Marks 2004, 53–83; Hanson 2011.
7 Korolkov 2022.
8 Brindley 2015; Kim 2015b; Yao 2016; Churchman 2016.

Southern East Asia: Geography and Interregional Connectivity

Regions of Southern East Asia

In this paper, "southern East Asia" is a heuristic construct for the geographical zone south of the Yangzi River, bounded by the Pacific Ocean in the southeast and the Red River in the southwest (Fig. 1). From physical-geographic and ethno-cultural perspectives, this zone can be roughly divided into two sub-zones: in the east, the lowlands of the lower and middle Yangzi valley and the lower Pearl and Red River valleys; and, in the west, the Yunnan–Guizhou plateau, or southwestern highlands. The official Sinitic historiography of the early imperial period drew an ethno-cultural distinction between these two spheres: the former was populated by the Yue groups, the latter by the "southwestern barbarians."[9] Although neither of the terms represents a linguistic unity, recent studies tend to identify the Yue with the early Austroasiatic and Austronesian speakers.[10] Tibeto-Burman speakers possibly constituted some of the best-documented ancient societies in the southwestern highlands, such as the Dian in central Yunnan.[11]

Another important physiographical marker in southern East Asia is the Nanling mountain range, which forms the drainage divide between the Yangzi and the Pearl Rivers. Although the region south of the mountains, Lingnan (Chinese: "south of the [Nanling] Mountains") is not a physiographic unit—it consists of two river systems, the Pearl and Red Rivers, separated by the hilly terrain that hinders overland communication—from the Sinitic perspectives, it constituted a cultural and political continuum inhabited by the "southern Yue" (Nanyue) people who, at the end of the third century BCE, were united by the Nanyue state, a polity that enjoyed a lasting ideological heritage in the region.[12]

The divide between the Middle and the Lower Yangzi basin is cultural rather than topographic. Communities in the two regions formed distinct interaction networks as early as the Late Neolithic. While the Lower Yangzi contacts were primarily sea-oriented, the Middle Yangzi was a virtual riverine crossroads formed by the Yangzi itself and by its principal northern tributary, the Han River, and southern tributaries, the Gan, Xiang, and Yuan Rivers (Fig. 1). The latter three empty into the two largest lakes of the East Asian lowlands, Poyang and Dongting, hence my term for this region,

9 *Shiji*, 113.2967–2978; 114.2979–2984; 116.2991–2998; *Hanshu*, 95.3837–3867.
10 For a recent summary of linguistic research on the Yue, see Brindley 2015, 45–61.
11 Its 1972, 226–227; Starosta 2005, 182–197.
12 Baldanza 2016, 1–11.

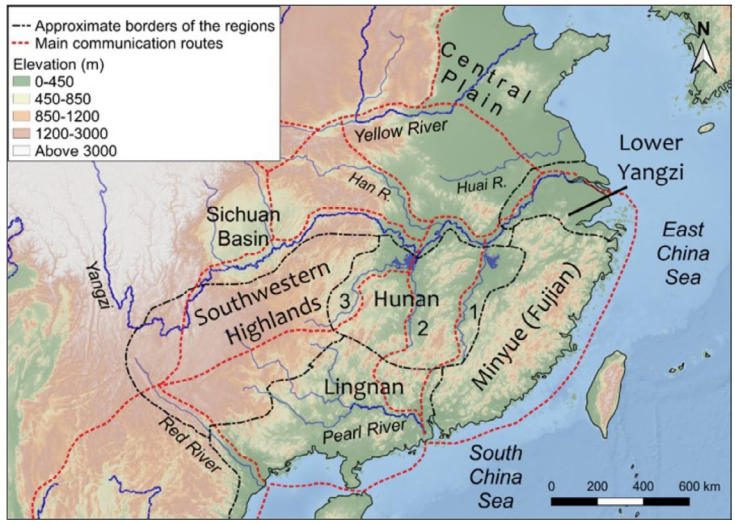

Fig. 1 Major regions and routes in early historic southern East Asia.Routes: Gan River (1), Xiang River (2), Yuan River (3).

Hunan ("south of the lakes," to be distinguished from the homonymous province of contemporary China). These river valleys have historically served as key communication corridors in a north–south direction that connected the Middle Yangzi to Lingnan and the southwestern highlands. To the north of the Yangzi, the Han River provided an important conduit between the Yangzi and the Yellow River basins. In the fourth and third centuries BCE, this was the main route of Qin's campaigns against Chu that, in retrospect, can be seen as a prologue to the Sinitic imperial conquest of southern East Asia.

The distinctive physiognomy of the fifth region, the southeastern uplands or the Minyue, which encompasses the present-day Fujian Province and some neighboring territories, is defined by the lack of riverine connections to the neighboring regions and by the fragmented landscape that hinders accumulation of resources to support large-scale political and administrative formation. For these reasons, unlike the other four regions, the Minyue was largely unaffected by the Sinitic expansion during the early imperial era, despite the episodic incursions by the empire's forces.[13]

13 Bielenstein 1959, 98–122; Clark 2016, 27–28.

Interregional Connections, Third to First Millennium BCE

With the exception of the Minyue region, the dense network of navigable rivers shaped interregional connectivity in southern East Asia, so much so that the "boats of the south" became the trope for physical traveling in the southern part of the Sinitic world, juxtaposed with the "horses of the north" in the Central Plains.[14]

The coastal route between the lower Huai River in the north and the Pearl River estuary in the south was instrumental in the formation of the cultural and political network centered on the Liangzhu Culture (ca. 3400–2250 BCE) in the Lower Yangzi, which is sometimes described as the earliest state-level society in East Asia.[15] This maritime conduit served not only the movements of religious ideas and associated objects but probably also the southward migrations of early rice farmers.[16] People, goods, and knowledge continued to travel along the coast during the later periods. The imports of the so-called Yue-style bronzes into Lingnan probably attest to the use of this route during the Spring and Autumn period (771–453 BCE), although its importance subsequently declined in favor of the more westerly, riverine corridors.[17] The discovery of the fragments of green glazed jars and ceramics with checkered pattern characteristic of the Lower Yangzi region at Khao Sam Kaeo, an important trading port in southern Thailand,[18] suggests the ongoing functioning of the route during the Han era.

The formation of the Middle Yangzi hub of long-distance interactions was also associated with the development of a regional core: the densely populated agrarian heartland with procurement and settlement networks extending into the periphery. The walled towns of the Qujialing-Shijiahe Culture (ca. 3300–2100 BCE), the largest of which possibly had as much as fifty thousand inhabitants,[19] projected cultural influence and trade contacts into the river valleys south of the Dongting Lake.[20] The wide distribution of Shijiahe-style clay figurines and red clay cups as far as the Wei River basin in the northwest points at the growing importance of the Han River valley as a conduit for long-distance exchanges.[21]

From the second millennium BCE onward, the spread of metallurgy was the major factor of interregional contacts in southern East Asia. The Middle and Lower Yangzi is home to the major copper and tin deposits in East Asia, while Lingnan and the southwestern highlands also contain important sources of tin and lead. Prospecting

14 Meng Jiao 1987, 8.76.
15 Liu and Chen 2012, 236–242; Qin 2013, 574–596; Shelach-Lavi 2015, 142–144.
16 Higham 2021, 63–93.
17 Müller 2004, 23–49.
18 Peronnet 2013, 155–169.
19 For the Shiijiahe Culture, see, for example, Zhang 2013, 510–534; Guo Jingyun 2013, 21–61.
20 See Xiangxi zizhizhou wenwu guanlichu et al. 2003, 52–71; Zhongguo kaogu xuehui 1987, 197.
21 Li 2018, 68.

of metal ores, migrations of metallurgists, and contacts among the bronze-using elites provided contexts for the dissemination of smelting and casting techniques, types of metal objects, ornaments, and uses of bronzes.

While copper-base metallurgy was probably introduced from the north and the earliest metallurgical center on the Yangzi, Panlongcheng (ca. 1500–1300 BCE), was associated with the Erligang Culture (ca. 1500–1400 BCE) in the Central Plains, a number of indigenous and interacting bronze cultures developed across the Yangzi basin after 1300 BCE. Many of them shared important cultural practices—such as the performance of bell music and burying of bronzes in sacrifices to natural spirits, and the use of bronze vessels as containers for jade beads and other small ornaments—that point to the growing east–west connections along the Yangzi valley, from Sichuan to the Lower Yangzi.[22]

After the advent of the Bronze Age in the Yangzi basin, the river highways of the Hunan region became conduits for the southward transmission of metal objects and metallurgical knowledge. The communities of the Wucheng Culture (ca. 1500–1000 BCE), south of the Poyang Lake, may have been crucial in the introduction of bronze casting to Lingnan through the Gan River corridor.[23] Starting in the mid-first millennium BCE, the Xiang River valley served the exports of Chu bronzes that gained popularity among the Lingnan elite.[24] The possible use of highly radiogenic Yunnan lead by the bronze casters on the Yangzi and in the Central Plains[25] suggests the functioning of routes between the southwestern highlands on the one hand and the Middle Yangzi and Sichuan basins on the other (Fig. 1).

On the western flank of southern East Asia, the expansion of millet agriculturalists from the Yellow River basin along the rim of the Tibetan plateau, through Sichuan to Yunnan and down the Red and Salween River valleys into the plains of northern Vietnam and central Thailand, shaped the western, highland corridor of north–south connections in the third millennium BCE.[26] In the second half of the second millennium BCE, copper smelters and prospectors for ore sources traveled this route to disseminate bronze metallurgy from Eurasian grasslands to the southwestern highlands and, from there, to continental Southeast Asia.[27] Driven by the adoption of casting methods, object types, and artistic styles from the Central Plains and the Yangzi basin, dramatic expansion of bronze industry in central Yunnan after the seventh century

22 Falkenhausen 2006a, 191–245; Flad and Chen 2013, 219–221; Lai 2019.
23 Laptev 2011, 93–102.
24 Falkenhausen 2002, 193–236.
25 Liu et al. 2015, 1–8; Jin et al. 2017, 1574–1587; Liu et al. 2018, 1–7.
26 Sørensen 1972, 459–506; Higham 2021.
27 Tzehuey 2009, 79–84; Higham 2021, 80–91.

BCE boosted communications along the Red River conduit[28] and contributed to the cohering of the highland and coastal networks.[29]

The Sinitic expansion in southern East Asia after ca. 400 BCE capitalized on the many centuries of interregional contact. This expansion can be seen as a military-political consolidation of long-existing connections. The Chu, Qin, and Han armies marched along the routes long traveled by farmer settlers, merchants, and metallurgists. Sinitic rulers and elites were attracted by the goods—metals, horses, pearls, stones, sea shells, forest products—that had long been exchanged among the communities in southern East Asia across long distances. The following section examines some important processes by which the imperial expansion and subsequent policies transformed the southern networks into a frontier zone.

Toward a Frontier Zone Economy: Four Processes

Conflict and Violence

In the eyes of Sinitic authors, regular outbreaks of intercommunal conflict defined local societies south of the Yangzi River. The ethnographic chapters on the southern and southwestern "barbarians" in the official histories narrate incessant raiding, rebellions, and punitive expeditions.[30] Provincial governors' efforts to reconcile indigenous populations to the imperial rule seem to have never achieved a lasting success. While the transmitted written sources praise the empire's agents as pacifiers of endemically violent "tribal zones," contemporary scholars point out that imperial expansion stimulated, rather than suppressed, armed conflict among the groups at the periphery.[31] The increase in intercommunal violence was sometimes, although not always, conducive to regional political integration, which, in turn, could pave the way for further incorporation into the empire.

Not accidentally, the militarization of societies in southern East Asia coincided with their increasing contacts with the Sinitic states in the third and second centuries BCE. The process was particularly salient in the southwestern highlands, where, during this period, "the taking of captives and headhunting become political themes that

28 Murowchick 2002, 133–192; Imamura 2010, 29–44.
29 Higham 1989, 287; Brindley 2015, 80–81; Kim 2015a, 246–247.
30 See, for example, *Hou Hanshu*, 86.2829–2868.
31 Ferguson and Whitehead 1998, 1–30.

are depicted with increasing frequency and realism."[32] Authority of local leaders and elites became tied to martial power, which relied on the array of new weapons (such as crossbows) introduced from the Sinitic world to control trade routes, accumulate wealth, and construct larger, more integrated military alliances.[33]

It is unclear to what degree the building of an enormous citadel at Co Loa, in the lower Red River valley, in the third century BCE was a response to the growing militarization in the southwestern highlands—the two regions by that time had centuries-long history of contact—or, as some scholars suggested, to the perceived Sinitic threat from the north.[34] The massive volume of crossbow arrowheads stockpiled at that fortress and the prevalence of weapons in contemporaneous Dong Son culture burials in the Bac Bo plain (lower Red River) attest to the importance of coercion in the emergence of the Co Loa-centered polity after ca. 300 BCE.[35]

In Lingnan, like in the southwestern highlands, the familiarity with advanced Sinitic weaponry, crossbows, and concomitant military organization—most likely due to the increased exchanges between Lingnan and the state of Chu during the late Warring States era[36]—was critical to the scaling-up of intercommunal violence. An extensive conflict accompanied the emergence of the Nanyue state in the late third and early second centuries BCE. The original consolidation was probably triggered by the resistance to the Qin invasion,[37] but it was cemented by the renegade Qin commander stationed in Panyu (present-day Guangzhou), who founded the Nanyue state.[38] From its base in the Pearl River valley, Nanyue projected some kind of control over the Red River delta,[39] raided the southern dependencies of the Han Empire north of the Nanling mountains,[40] and fought other Yue groups in the Minyue region. The Han rulers eventually capitalized on these inter-Yue feuds to interfere in Nanyue affairs.[41]

In the relatively isolated uplands of western Guangdong and Guangxi, internal conflict and the rise of military leaders accelerated at the end of Han and in the early medieval period, when this region became increasingly involved in trade with the Sinitic centers. According to Catherine Churchman, the strong demand for forest products and precious metals among the urban populations in Lingnan and in the

32 Yao 2016, 174.
33 Yao 2016, 168–181.
34 Kim 2015a, 283.
35 Hoang and Bui 1980, 55–65; Kim 2015a, 137–142.
36 Falkenhausen 2002, 193–236.
37 *Huainan honglie*, 18.1289–1290.
38 *Shiji*, 113.2967–2969; *Hanshu*, 95.3847–3848.
39 Taylor 1983, 20–21; Higham 1989, 289.
40 *Hanshu*, 95.3848.
41 *Shiji*, 113.2970–2971; *Hanshu*, 95.3853.

metropolitan region of Southern Dynasties on the Yangzi River "encouraged competition between the Li-Lao chieftains over territory in which precious metals and copper were to be obtained, but also over the control of populations that could be employed in the extraction of such metals."[42]

Although the volume of trade between the Sinitic empires and the communities in southern East Asia is impossible to measure, archaeological and textual evidence suggest that the accumulation of exportable resources and the concentration of military power fed one another and jointly fueled these regions' integration into the imperial Sinitic space. For example, transmitted histories tell about Han envoys taking advantage of highlanders' infatuation with Han textiles to secure alliances with the local leaders that aided in the conquest of Nanyue.[43] These records are corroborated by archaeological evidence for the growing number of imported "Chinese-style objects" in the wealthy tombs in the Dian Lake area in the third and second centuries BCE.[44]

These exchanges probably contributed to the empire's ability to tap into the local military networks. An account of the Han conquest of Lingnan in 111 BCE indicates that the imperial commanders made use of militias levied among the Yue groups and the southwestern highlanders.[45] Highland troops were, again, deployed in the Jin Empire's (266–420 CE) campaigns in the Red River valley in the third century CE.[46] The Han authorities relied on the local allies to quell uprisings and routinely pitted indigenous groups against each other.[47] Insofar as such conflicts were part of the competition among the local leaders for access to the prestigious metropolitan goods and honorary titles conferred by the Han court in reward for loyalty proven on the battlefield,[48] the low-intensity conflict was perpetuated as a structural feature of the frontier zone political economy.

An outcome of intercommunal violence and conquest, the political–military consolidation in different regions of southern East Asia was accompanied by the emergence of clusters of dense agricultural settlement that generated large surpluses for extraction—the "state spaces," to use James Scott's felicitous expression.[49] Their presence greatly facilitated the imperial expansion, which could focus on specific areas with human and material resources sufficient for maintaining administration and garrisons, from where the state control radiated into the surrounding countryside. In Lingnan, the Han Empire was anchored around the major population center at

42 Churchman 2016, 141–168.
43 *Shiji*, 116.2994.
44 Allard 2015, 26–35; Yao 2016, 168–171; Wu et al. 2019, 6759–6761.
45 *Shiji*, 113.2974–2975.
46 Herman 2009, 241–286.
47 See, for example, *Hanshu*, 95.3843; *Hou Hanshu*, 86.2832–2833.
48 See, for example, *Hou Hanshu*, 86.2837–2839.
49 Scott 2009.

the Bac Bo plain, the base of the Co Loa-centered polity in the third century BCE. By 2 CE, this region accounted for more than half of all taxable households south of the Yangzi River.[50]

Migration and Changes to the Settlement Patterns

Human mobility and changes in settlement patterns are vital elements of the frontier zone dynamics. The fringes of ancient empires were the locations of state-sponsored agrarian development, new settlement, often with a pronounced military component, and a destination for migrants from interior regions.[51] Since the frontier zones were also characterized by heightened intercommunal conflict (see above), forcible displacement replenished itinerant populations, which were a potential resource in the official projects but also a serious threat to state control.[52]

The rise in human migrations in southern East Asia during the second half of the first millennium BCE appears to have been related to the expansion of Sinitic states that gained momentum after ca. 400 BCE. The Chu incursions in the Lower Yangzi basin, where it destroyed the local polity of Yue,[53] and the colonization of the Xiang and Yuan valleys in the Hunan region[54] sent waves of Yue migration to Minyue and Lingnan,[55] which probably contributed to the consolidation of local polities. In 222–214 BCE, the Qin campaigns south of the Yangzi almost certainly involved enormous displacements of local people in Hunan and Lingnan.[56] After the failure to establish administrative control in northern Minyue in the 130s BCE, the Han authorities deported its population to the Lower Yangzi and Huai River valley.[57] Although there is no record of state-organized resettlements in Lingnan after the Han conquest of 112–111 BCE, archaeological evidence suggests a considerable outflow of people from the Nanyue heartland in the lower Pearl River to the areas around the Nanling

50 *Hanshu*, 28B.1628–1630.

51 For militarized frontier settlements in ancient empires, which involved both agricultural intensification and urbanization, see, for example, Hopper 2017, 126–150; Morris 2020, 53–93.

52 Korolkov and Hein 2021.

53 Yang Kuan 2003, 364–365.

54 Falkenhausen 2006b, 285–286.

55 Müller 2004, 23–49; Milburn 2010, 8–9.

56 Transmitted sources from the Han era record that the Yue of Lingnan fled to the mountains in response to the Qin invasion. See *Huainan honglie jijie*, 18.1289–1290. Excavated official documents from Liye (in the Yuan River basin in western Hunan) report the absence of indigenous people among the residents of the county town, a possible hint at the expulsion of non-Sinitic populations from the administrative centers. See Chen Wei et al. 2018, 466, tablet 9-2300.

57 *Shiji*, 114.2984.

mountains, which experienced rapid economic growth and increase in the registered population between the mid-second century BCE and the mid-second century CE.[58]

Some of these resettlements were state-organized, but the majority were probably private migrations, though in many cases induced by state action, such as conquest or the foundation of new administrative centers. In any case, population mobility within southern East Asia was vital to the shaping of a new settlement landscape. A recent isotopic analysis of skeletal remains from a Han-era cemetery in the Dian Lake basin, at the heart of southwestern highlands, revealed that the people previously considered Han immigrants most likely came from Sichuan, Lingnan, and the Middle Yangzi region.[59] It has been suggested that some of these people were the former Nanyue officials forced to move after the Han conquest.[60] The newcomers from other regions of southern East Asia, rather than from the Central Plains in the north, may have been the main population of the new walled towns with Han-style architecture that sprang up in the lake basins of central Yunnan from the first century BCE onward.[61] Migrants depended on the government for the organization of settlement and could be deployed to create a new human geography susceptible to state control.[62]

It is probably not a coincidence that the commanderies located along the riverine corridors between the Middle Yangzi and the Pearl River systems (Fig. 1) received an influx of "Yue" migration at the same time when the registered, taxpaying population of the region increased exponentially,[63] and two urban belts formed north and south of the Nanling mountains.[64] Although mass migration from northern China cannot be altogether ruled out, scholars have recently argued that this growth "can easily be attributed entirely to the mix of local factors: natural growth, immigration by fellow southerners, and improved registration practices."[65] By the second century CE, this region became a logistical, administrative, economic, and military backbone of imperial control in the south and a home to half of the registered households south of the Yangzi River. Troops were recruited here for campaigns in the far south.[66] At the end of the Eastern Han (25–220 CE), Changsha Commandery, south of Dongting Lake, became the base for one of the three major successors to the Han Empire, the state of Wu.[67]

58 Liu Rui 2019, 380–389.
59 Wu et al. 2019, 6773–6775.
60 Erickson et al. 2010, 164, with further references.
61 Yao 2016, 184–192.
62 Scott 2009, 24–26; Korolkov and Hein 2021.
63 In one commandery, Lingling, the registered population probably increased more than 160 times between the 180s BCE and 156 CE. This growth, of course, could not have been purely natural. See Lu Xiqi 2008; *Hanshu*, 28A.1595–1596; *Hou Hanshu*, *zhi* (treatises) 22.3482–3483.
64 Chen Bo 2016, 124–129.
65 Chittick 2020, 365.
66 *Hou Hanshu*, 86.2836–2837.
67 *Sanguo zhi*, 46.1095.

Dissemination of Technology and Industries

Students of ancient economies have long pointed out that the diffusion of technology and applied knowledge was among the principal drivers of economic growth in antiquity and that imperial expansion was a typical context for technology transfers.[68] In the frontier zones, adoption of new production tools and, especially, weapons often entailed radical sociopolitical changes and perpetuated the relationship of unequal exchange between the core and peripheral regions.[69] We have already seen that the heightening conflict and consolidation of military power in southern East Asia was accompanied by the dissemination of some important Sinitic military technologies, such as crossbows and, possibly, defensive architecture.[70]

The spread of iron metallurgy illustrates the linkage between the Sinitic imperial expansion and technological change, which profoundly altered the lifestyles of communities in southern East Asia and accelerated their integration into the imperial economic network.

The Lower Yangzi valley was among the early centers of the iron industry in East Asia, and some of the earliest steel weapons originate from a tomb in the area of dense Chu settlement south of Dongting Lake in northern Hunan.[71] However, throughout the Warring States period, the spread of iron metallurgy was quite limited in the outlying territories in Hunan as well as in other regions of southern East Asia.[72]

After 222 BCE, the Qin conquests south of the Yangzi introduced elements of the Qin-style command economy, including state-organized mining and administration of the iron industry.[73] They are documented in the archive of Qianling County in the Yuan River valley, where archaeological finds attest to the growing use of iron objects, especially tools, during the Qin and Western Han periods.[74] The excavation of a Qin shipyard at Panyu, the major Qin center in Lingnan, yielded the earliest evidence for the use of iron tools in the area: knives, adzes, and chisels.[75] Despite the brevity of Qin administration in Lingnan, which lasted less than one decade, it appears to

68 Lo Cascio 2007, 619–647; Kay 2014, 324.

69 Ferguson and Whitehead 1998, 1–30.

70 The use of stamped earth in the construction of the Co Loa citadel has been interpreted as evidence of familiarity with Sinitic-style defensive architecture. See Kim 2015a, 167; 243–246.

71 Needham and Wagner 2008, 115–170; Lam 2020, 595–614.

72 Bai Yunxiang 2005, 313–324; Gao Zhixi 2012, 277.

73 For a recent discussion of the Qin command economy of the Warring States period, see Korolkov 2021, 203–261.

74 For the written record, see Chen Wei et al. 2012, 152–153, tablet 8-454; Chen Wei et al. 2018, 186–189, tablet 9-713; Liye Qin jian bowuguan et al. 2016, 56, tablet 10-1170; 57, tablet 12-3; 58, tablet 12-447; 65, tablet 14-469. For the archaeological evidence, see Hunan sheng wenwu kaogu yanjiusuo 2006, 350–351, 170–179, 525–528.

75 Guangzhou shi wenwu guanlichu 1977, 1–17.

have provided an impetus to the development of the local iron industry in the hybrid Sino-Yue polity of Nanyue (ca. 204–111 BCE), under which the use of iron tools in agriculture continued to spread.[76]

The Western Han period was not only the time of critical technological developments in iron metallurgy, such as the innovation of the refined pig iron technique,[77] but also the development of market-oriented policies that contributed to further dissemination of iron implements. By the early decades of the second century BCE, the market for iron implements was already booming in Lingnan. In the apparent absence of its own smelting industry, Nanyue relied heavily on iron imports from the Han Empire,[78] so much so that its ruler, Zhao Tuo (203–137 BCE), went to war when the Han court banned iron trade across the Nanling mountains.[79] After the Han conquest of Lingnan and southwestern highlands at the end of the second century BCE, imports of Han ironware further increased and local iron production took off,[80] marking the beginning of the Iron Age in southern East Asia. The use of iron plowshares and plow-drawing ox-teams, which in Lingnan are dated to the Eastern Han period,[81] probably played an important role in the expansion of farming into the alluvial plains and in the growth of a permanently settled, taxpaying agricultural population throughout the southern borderlands.[82]

The inauguration of the official monopoly on the production and distribution of iron tools in 117 BCE (according to another record, in 119 BCE) made the government invested in the further expansion of the iron trade that became one of the major sources of state revenue.[83] The Han authorities in the south encouraged the adoption of iron implements in farming and organized the local iron industries.[84] Although this process often involved a degree of compulsion, it would be misleading to disregard the recurring rhetoric of "benefiting the people" (*li min* 利民) in the transmitted texts. Local farmers were probably induced to participate in the imperial network by resettling to the "state spaces," interacting with state officials, and producing for the Han urban markets, partly to acquire the more advanced farming implements supplied by the state.

From the imperial government's perspective, investment in local iron production was a tool for stimulating economic growth in some areas and sidelining others. The

76 Zhao Shande 2014, 200–203.
77 Lam 2020, 607.
78 Huang Zhanyue 1996; Bai Yunxiang 2005, 317–318.
79 *Shiji*, 113.2969.
80 For the southwestern highlands, see Yao 2016, 192–208.
81 Jiang Tingyu 1981; Zhao Shande 2014, 205–207.
82 Taylor 1983, 44–45.
83 Yamada 1993, 653–658; Von Glahn 2016, 113–120.
84 *Hou Hanshu*, 76.2459, 2462; Taylor 1983, 28; Higham 1989, 290.

geographic distribution of archaeological finds of iron objects in the Han south has been interpreted as a marker of deliberate restriction, after the Han conquest, of iron manufacturing in Nanhai Commandery, the center of the Nanyue state. This policy resulted in economic stagnation and an outflow of population until growth resumed under the Eastern Han. By doing so, it is claimed, the Han government sought to prevent the restoration of Nanyue power at its old core while at the same time encouraging new centers, such as the commanderies of Cangwu and Guiyang south and north of the Nanling Mountains.[85]

Monetization and Strengthening of Exchange Circuits

Exchanges between the Sinitic polities and the societies south of the Yangzi intensified during the centuries prior to the imperial expansion. The state of Chu extended its trade networks into the Lower Yangzi, Hunan, Lingnan, and the southwestern highlands.[86] While the contexts of these exchanges are far from clear, commercial motivations probably coexisted with political ones: for example, the distribution of prestigious Chu-style bronzes in Lingnan has been interpreted as a Chu effort to coopt local elites.[87] The circulation of Chu coinage was limited to the areas of dense Chu settlement south of Dongting Lake.[88]

The transition to the use of bronze coinage south of the Yangzi after the arrival of Qin is visible both in the archaeological finds of Qin *banliang* specie and in the excavated official documents, which record the payments of large amounts in cash.[89] As in the case of iron metallurgy, monetization of the local economy in the Yuan River basin was largely a state-driven development because the government provided coined money, and because state spending was critical to the supply of liquidity.[90] One of the largest amounts mentioned in these documents, 80,000 coins, was used to purchase clothing for convicts employed by the local government.[91] Since the local market alone was unable to satisfy this demand, the county officials dispatched procurement agents to market towns on the principal transportation artery, the Yangzi River.[92] Numerous references to cash in private transactions indicate that, after just a

85 Liu Rui 2019, 380–389, with references to archaeological reports on the related areas.
86 Peters 1999; Allard 2004; Beaujard 2019, 526–527.
87 Falkenhausen 2002, 221–223.
88 Long Jingsha and Guo Lige 2008, 64–66; Emura 2011, 313–353.
89 Hunan sheng wenwu kaogu yanjiusuo 2006, 169–170; Long Jingsha and Guo Lige 2008.
90 For a detailed discussion, see Korolkov 2022.
91 Chen Wei et al. 2012, 20–21, tablet 6-7; 179, tablet 8-560.
92 Chen Wei et al. 2018, 185, tablet 9-709+9-873.

few years of Qin administration south of the Yangzi, the use of Qin coinage already had taken root in the local economy.[93]

The disintegration of the centralized state economy after the fall of the Qin Empire spurred monetization and expansion of commerce. Imperial Qin authorities already experimented with commutation of in-kind taxes into cash.[94] At the beginning of Western Han, the introduction of a poll tax in coin became the major step in the transition to monetary taxation.[95] Debasement of *banliang* and legalization of private coinage enhanced money supply and monetary integration, not least because the rulers of autonomous regional states, which in the early decades of the Han rule encompassed the eastern half of the empire and much of the middle and lower Yangzi valley, cast coin on the Han standard to facilitate their participation in empire-wide trade and to finance their political ambitions.[96] The adoption of Han bronze currency in the Nanyue state in Lingnan, which is attested by the archaeological discovery of coins in mortuary as well as in residential contexts,[97] coincided with the growth of iron trade across the Nanling mountains.

The timing of Han expansion south of the Yangzi River coincided almost exactly with the major monetary reform that, in 113 BCE, greatly enhanced the quality, uniformity, and quantity of the new imperial coinage, the *wuzhu*, by consolidating the coin-casting at the capital under a specially designated administration.[98] For the rest of the Western Han period, the imperial mints were churning out approximately 230 million coins every year,[99] which helped to establish *wuzhu* as the main legal tender in East Asia until the seventh century CE.[100] The contrast between twenty-nine *banliang* cash discovered in four tombs at the Western Han-period cemetery near the Qianling county town in the Yuan River basin, and 4,555 *wuzhu* from sixty-six tombs at the same cemetery indicates the impact of the new coinage on the monetization of exchanges in southern East Asia.[101] Throughout the Lower Yangzi, Hunan and Lingnan, *wuzhu* coins were excavated from burials, including those that contained no other bronze objects, suggesting that even people of moderate means had access to currency.[102]

93 Chen Wei et al. 2012, 191, tablet 8-650+8-1462; 223–224, tablet 8-771.
94 Chen Songchang 2015, 107, slips 118–120; Korolkov 2021, 218–224.
95 *Hanshu*, 1A.46; Kakinuma 2011, 171–172.
96 See, for example, *Shiji*, 30.1419.
97 Guangzhou shi wenwu guanli weiyuanhui et al. 1981, 348–349; Li Zaoxin 2019, 21–27.
98 *Hanshu*, 24B.1169.
99 *Hanshu*, 24B.1177.
100 Qian Jiaju and Guo Yangang 2005, 37–45.
101 Hunan sheng wenwu kaogu yanjiusuo 2006, 508–511.
102 According to the recent count, out of 2,020 Qin and Han tombs with well-preserved burial inventory excavated in Hunan and Lingnan regions, 1,198 (59.3 percent) contained bronze coins, including 269 tombs (13.3 percent) where such coins were the only bronze objects. See Liu Rui 2019, 255.

In the southwestern highlands, the use of Han coins picked up from the early first century BCE onward.[103] The process was probably accelerated by the arrival of Han administrators, soldiers, and settlers. However, coin finds in the local burials suggest that "native participation in the monetary economy […] gained momentum two decades or more after conquest."[104]

Banliang- and, to a greater degree, *wuzhu*-based monetization was probably instrumental in the archaeologically and textually attested expansion of interregional circulations of people and goods: the growing imports of Han-style objects, migrations, changes in lifeways and settlement patterns, including urbanization. The extension of markets favored regional specialization and intensive exploitation of unique frontier-zone resources. By the beginning of the common era, populations along the South China Sea coast in Hepu Commandery (in present-day Guangxi Province) dedicated themselves exclusively to pearl hunting and relied on agricultural imports from the neighboring Jiaozhi Commandery in the Red River Delta,[105] which became a trade hub for pearls, one of the southern luxuries coveted by the imperial elites.[106] Although the terse records in the official histories do not provide the context of these exchanges, it is hardly a coincidence that the major regional trade center, the Red River Delta, was also the area where, around the same time, the Han coins become ubiquitous in the tomb inventories.[107]

The written and archaeological record of population growth and urbanization in the state-controlled lowlands coalesce with the evidence for rapid monetization and strengthening of exchange circuits, particularly in the commodities crucial to state finance (e.g., iron implements), to suggest that market-based mobility of people and resources was key to the sustainability of the imperial rule in southern East Asia. The possible index of state power is the number of registered households in the southern commanderies, which increased by sixty to seventy percent between 2 CE and 156 CE.[108] In a positive feedback loop, population growth within the "state spaces," commercial expansion anchored to the urban centers of consumer demand, and imperial incorporation of the frontier regions reinforced each other.

103 Yao 2016, 183–184; Wu et al. 2019, 6767–6768.

104 Yao 2016, 184.

105 *Hou Hanshu*, 76.2473.

106 Hence the expectation that a Han commander returning from a pacification campaign in the lower Red River valley would be bringing back cartloads of pearls; see *Hou Hanshu*, 24.846.

107 Higham 1989, 291–292; Higham 2014, 332–333.

108 The population numbers in 2 CE and 156 CE are provided in *Hanshu*, 28.1543–1640 and *Hou Hanshu*, *zhi* 19–23.3385–3554, respectively. For a detailed discussion of sources of demographic data in the *Hou Hanshu*, see Yuan Yansheng 2003, 3–8.

Non-imperial Long-distance Interactions in Southern East Asia

Non-imperial Webs of Interaction and the Impact of Sinitic Expansion

Transmitted textual narratives highlight the control of interregional communication routes among the principal motivations of Sinitic expansion in the south during the early imperial period. The initial Qin thrust into Lingnan was allegedly driven by the First Emperor's (r. 247–210 BCE) lust for exotic goods that circulated in the coastal exchange networks: pearls, ivory, rhinoceros horns.[109] Emperor Wu (141–87 BCE) of Western Han decided to advance into the southwestern highlands after receiving an intelligence report on the trade route between the Han-controlled Sichuan basin and the land of Shendu in the southwest (usually identified as India), from which the Han goods were reexported to Bactria.[110] Imperial diplomats and military strategists were becoming familiar with the southern world of long-distance exchanges.

Communication along these interregional highways intensified over time, as new resources were brought into circulation and new regions joined interactions. As early as 2000 BCE, the north–south riverine conduits of mainland Southeast Asia, such as the Salween and Irrawaddy Rivers, were probably important in the distribution of Indian Ocean cowries, which became important markers of social status in many societies throughout Southeast and East Asia and which, in Bronze Age China, came to be used as a measure of value in ritualized economic transactions among the elites.[111] In the second half of the first millennium BCE, this route was used for importing a range of manufactured goods, particularly glass objects, from Southern Asia to the emerging urban centers in the Yangzi valley (Fig. 2)[112] and for the booming export of horses, cattle, and slaves from the southwestern highlands to the Sichuan basin.[113]

After ca. 500 BCE, the trade ports along the rim of the South China Sea became integrated into the maritime web of long-distance economic, social, and cultural ties (Fig. 2). These coastal communities developed sophisticated craft industries that used a variety of imported materials and artisanal traditions, many of which originated in South Asia and possibly as far away as the Hellenistic world, to produce a range of high-value objects in characteristic "South China Sea style": ceramics, glass beads, and

109 *Huainan honglie*, 18.1288–1291.
110 *Shiji*, 123.3166–3167; *Hanshu*, 61.2689–2691.
111 Yang 2019, 128; Higham 2021, 67.
112 Beaujard 2019, 526.
113 *Shiji*, 116.2993; *Hanshu*, 95.3838; Yang 2004, 294–295; Yao 2016, 174.

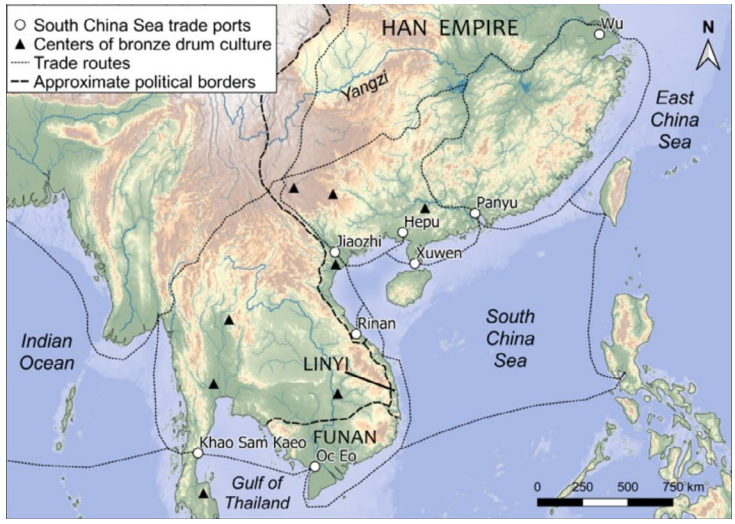

Fig. 2 Non-imperial networks in the south.

stone and gold ornaments. Along with the raw materials—bronze, nephrite, mica—these manufactures were circulated among urban coastal elites that shared cultural practices, symbolic systems, and esthetic preferences. Such networks of prestige goods may have been instrumental in the consolidation of political power in trading polities of the South China Sea basin, the cementing of inter-polity alliances, and the construction of a cosmopolitan elite identity.[114]

The distribution of the so-called bronze drum network attests to inter-societal links across highland–lowland and coast–inland divides in the second half of the first millennium BCE. Probably as early as the eighth century BCE, bronze drums and containers started to be cast in the Central Lakes basin of Yunnan as important ritual paraphernalia at the focus of communal ceremonies.[115] After ca. 500 BCE, these drums and containers, some of which may have been imported from Yunnan, started to be used by the Dong Son culture communities in the lower Red River valley for ritual activities and display of elite status;[116] by the Nanyue elites in Lingnan;[117] and in Han-era Hunan.[118] Around the turn of the common era, the "drum network" extended along the South China Sea littoral as far as the Malay Peninsula and Indonesia in the

114 Bellina 2003; Bellina 2014; Demandt 2015; Bellina et al. 2019.
115 Murowchick 2002, 164–170.
116 Higham 1989, 195–201; Murowchick 2002, 176–177; Brindley 2015, 78–79.
117 Psarras 1997; Allard 2017.
118 Psarras 2000.

south.[119] As in the case of the South China Sea network, the distribution of bronze drums may point to common elements of ritual culture, aristocratic identity, as well as to an "extensive and efficient exchange mechanism within the Southeast Asian world prior to any significant trade with imperial India or China."[120]

Sinitic expansion in southern East Asia had diverse impacts on these non-imperial webs of interaction. The Han conquest of Lingnan entailed the decline of drum casting at one of its major centers, in the lower Red River valley.[121] According to the official history of the Eastern Han Empire, after the suppression of the Trung sisters' rebellion (40–43 CE), the Han commander ordered confiscation and recasting of bronze drums in the possession of the local elite.[122] That the disruption of the drum production was accompanied by the region's accelerated adoption of Han lifestyles and belief systems—manifest in the growing use of Han-style objects (bronze mirrors, coins, belt-hooks, ceramics, lacquerware, etc.), transition to the metropolitan Han funerary culture, and spread of Sinitic domestic architecture[123]—suggests the re-orientation of resources from non-imperial to imperial economic, political, and social webs.

Elsewhere, urbanization, commercial expansion, and incremental monetization within the empire contributed to the intensification and extension of non-imperial interactions. The archaeological excavations of the Han-period cemeteries around the major sea ports of Hepu, Panyu, and Xuwen (Fig. 2) yielded large numbers of objects imported through long-distance maritime networks: pearls, agate and amber beads, glass items, ivory, fragrant wood, and so on.[124] The distribution of "South China Sea style" items, such as polyhedral gold beads, glass, and stone ornaments—particularly dense in the coastal centers but also along the inland riverine paths as far north as the Middle Yangzi[125]—sheds light on the participation of urban-based elites and sub-elites in the Han South in a consumption culture shaped by exchange practices beyond the empire's borders rather than by the cultural influences and economic policies of the imperial core.

These exchanges stimulated the development, during the Eastern Han period, of export-oriented industries, such as glass workshops in Guangxi that shipped their products to Han commanderies in coastal northern Vietnam and, from there, into the uplands along the Red River, as well as to places far beyond the imperial orbit, such as southern Thailand and southeast coast of India.[126] Han exports also included bronze

119 Imamura 2010; Bellina et al. 2019.
120 Hall 2011, 4.
121 Taylor 1983, 39; Imamura 2010, 40.
122 *Hou Hanshu*, 24.840.
123 Higham 1989, 292–294; Huang Xiaofen 2018.
124 Zhao Shande 2014, 189–195; Allard 2017; Beaujard 2019, 552–555.
125 Li Jianwei 2010; Xiong 2014; Demandt 2015.
126 Borell 2012; Borell 2013.

vessels, mirrors, and seals (unless the items excavated in southern Thailand were left behind by Sinitic merchants rather than used by the locals, who did not necessarily realize the original function of these objects) along with ceramic jars, mostly of Lingnan origin, but also distinctive green glazed ware from the Lower Yangzi region, which may have been used as containers for other commodities.[127]

Decline of the Early Empire and Reconfiguration of Frontier Zone Interactions in the South

Despite considerable local variation, the archaeological and textual records of the Eastern Han reflect a general progress of imperial integration of southern East Asia. It was accompanied by growing wealth and an expansion of consumption horizons, especially among the elites and sub-elites in the trading towns on the coast and along the river highways. However, notwithstanding the defeat of major rebellions, new hotbeds of resistance against imperial rule were building up throughout the Han South.[128] The decline of the center's power and the upsurge of political regionalism after the mid-second century BCE precipitated the revival of interactions that challenged the political and economic order of the empire.

As trade in southern goods boomed during the Eastern Han era, the Austroasiatic and Tai-Kadai-speaking populations in the uplands of western Guangdong and Guangxi (called Li and Lao in contemporary Sinitic sources) emerged as important players in the interregional exchange network. Along with the traditional "southern exotica," the region became a supplier of gold and silver, which gained importance as currencies after the end of Han. The strong demand for upland forest and mineral products stimulated competition for territory and control of manpower among the Li–Lao chieftains and accelerated social stratification, slavery, and polity building.[129] Tribal confederacies posed a serious threat to imperial control in the south, although they could also assist the empires in quelling rebellions among the taxpaying populations settled around the administrative towns.

While the growing power of Li–Lao chieftains was financed through trade relations with the Sinitic settlements in Lingnan and with the emerging centers of the Southern Dynasties in the Yangzi valley during the post-Han Age of Disunion (220–589 CE), the political world of highland leaders developed within a markedly non-imperial context. As Han rule in Lingnan floundered at the end of the second century CE, the hilly hinterland east of the Pearl River Delta and north of present-day

127 Peronnet 2013.
128 *Hou Hanshu*, 86.2829–2868; Lycas 2019.
129 Churchman 2016, 142–149.

Hanoi witnessed a flourishing of the bronze drum culture, which since the mid-first millennium BCE had provided a framework for alliance-building, long-distance exchange in resources, technology, and artistic styles, and a distinct symbolic language of political legitimacy among the small-scale aristocratic polities in southern East Asia.[130]

The revival of this non-imperial interaction web was associated with important economic developments throughout Lingnan, such as the expansion of copper mining in Guangxi[131] and the re-orientation of bronze foundries at the major Han center in Lingnan, Jiaozhi Commandery (in the lower Red River valley), toward drum casting for the needs of indigenous groups in the surrounding hill country.[132] The adverse impact of what they saw as an irrational infatuation with bronze drums among the Li–Lao leaders on the region's integration into the imperial economy was not lost on the Sinitic rulers. The Eastern Jin (317–420 CE) edict of 375 CE complained about the "barbarians of Guangzhou" melting imperial coins to cast their drums.[133]

At a more fundamental level, the disintegration of the Sinitic empire after ca. 200 CE triggered some radical political–economic and cultural innovations to undergird the successor regimes in the Yangzi valley. In his recent study of these post-Han regimes in the south, Andrew Chittick argued that this "Jiankang Empire" was much more akin to the contemporaneous sea-based trading polities of Southeast Asia than to the Sinitic empires of either the early imperial (Qin and Han) standard or early medieval Sino-nomadic synthesis (including the Sui and Tang Empires that "reunified" mainland East Asia in the late sixth and early seventh centuries CE).[134]

With a weakened and intrinsically unstable central government, the countryside controlled by the landholding "great families," and the capital at the intersection of major routes of waterborne trade, the Eastern Jin and the subsequent southern dynasties (420–589 CE) reorganized their core along the lines of the southern sea-trading world, resulting in the emergence of what Chittick calls the Sino-Southeast Asian zone. Government income came to rely heavily on the taxation of private commerce, rather than on the official monopolies that had been the mainstay of the Han Empire's market-oriented fiscal policy at its height.[135] The government's ability to register and tax households in the countryside declined, and effective administrative control shrank to the trading towns, which negotiated their relationships with the resource-supplying hinterland through intermediaries such as local landed magnates or tribal leaders.[136]

130 Imamura 2010; Churchman 2016.
131 Lu et al. 2020, 15–26.
132 Imamura 2010, 40–41 ; Huang Xiaofen 2018, 27–28.
133 *Jinshu*, 26.795.
134 Chittick 2020.
135 Liu 2001, 35–52; Liu 2019, 330–354; Chittick 2020, 177–205.
136 Crowell 1990, 171–209; Churchman 2016, 141–168.

The southern regimes established themselves as members of the maritime interstate network. Between the early third and the early seventh centuries CE, more than one hundred diplomatic missions from the South China Sea polities visited the southern imperial courts, which reciprocated with their own official emissaries.[137] Like their counterparts in the contemporaneous "Buddhist kingdoms" of Southeast Asia, the rulers of the southern empires deployed the Buddhist cultural repertoire for political legitimation.[138]

Conclusion

Starting from the Neolithic period, societies south of the Yangzi River have been part of a web of long-range connections. Some of these were instrumental in the cross-continental dissemination of critical innovations, such as bronze metallurgy. Others, of more circumscribed nature, were equally significant in transforming local lifestyles and socio-economic organization. With the emergence of large-scale polities in the Yellow River basin in the second millennium BCE, and especially with their vigorous military and economic thrust into the Yangzi valley after ca. 500 BCE, the acephalous interaction space of southern East Asia increasingly morphed into a frontier zone, whose trajectory was in many crucial ways molded by the encounters with the expansive Sinitic states and, after 221 BCE, empires.

At the early stages of these Sinitic encounters, their impact—typically delivered via down-the-line, rather than direct, contacts and strongly mediated by the local environments and social structures—is hard to single out as qualitatively distinct from the influences conveyed through other interactions and cultural borrowings. For example, intensification of intercommunal conflict and concomitant consolidation of military power across southern East Asia in the fourth and third centuries BCE was, in various ways, related to the growing contacts with the Sinitic world, but these processes were equally affected by endogenous developments and by the general expansion of intersocietal exchange. Notwithstanding their heterogenous etiology, political consolidation and strengthening of military networks were crucial to the formation of the frontier zone because they rendered local communities susceptible to economic and administrative incorporation into the expanding empires.

At the opposite end of the continuum of influences are the direct interventions by the Sinitic polities into the texture of indigenous life. These encounters, exemplified by the dissemination of the iron industry and coinage south of the Yangzi, typically

137 Wang 1998, 118–119; Schottenhammer 2019, 21–52.
138 Chittick 2020, 269–323.

took place at the latter stages of contact and generated distinctive features of peripheral economies: dependence on technology introduced from the Sinitic centers; export of natural resources and intensive, sometimes predatory, exploitation of unique ecological niches; imports of advanced manufactures; and adoption of metropolitan consumption standards. In this essay, I have argued that the dynamics of state power in the Sinitic world, particularly the command economy in the state of Qin during the late fourth and third centuries BCE and the subsequent transition to the market-oriented model of state finance under the Western Han, largely defined the frontier zone processes in southern East Asia.

At the peak of their power, the Sinitic empires claimed exclusive control of their frontier zones, a claim endorsed by present-day historical maps that depict territories south of the Yangzi as a mosaic of administrative units circumscribed by a clear boundary; yet, even after the Qin and Han conquests, populations of southern East Asia continued to participate in multiple networks, some of which stretched far beyond the empire's border. Imperial commanders and administrators sought to suppress some of these interactions, which were seen as subversive of empire's security. More importantly, the dominance of the imperial network relied on the important advantages for its participants, from more efficient agricultural and commercial tools to more appealing symbols of social authority to more variegated sets of tableware.

However, the resources of the empire could be redeployed to strengthen interactions that potentially undermined its political and economic orders. The weakening of the metropolitan center exacerbated this challenge as populations of the frontier zones sought for alternative sources of security, wealth, and sense of identity. Moreover, frontier zones provided interfaces for transplanting the organizational features of non-imperial interaction structures into the imperial network when the latter reconfigured itself after major crises. In East Asia, the three centuries after the fall of Han, when large segments of the former empire were involved in the South China Sea world, shaped the long-term trajectory toward commercialization, market-oriented agricultural and industrial innovation, and expansion of maritime trade.

Figure Credits

All maps in this paper were made by the author.

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Double-crop Pocket Zones and Empires
The Case of Swat

Luca M. Olivieri

> There is no natural feature of the country [i.e. Swat]
> which has not been turned to advantage.
> The immense flats are flooded periodically as of old,
> and produce a rice harvest second to none in India.
>
> From Alexander E. Caddy Esq. on special duty
> to the Chief Secretary of the Government of Bengal.
> Dated Camp Chakdara [Swat], 13th May 1896.
> (Olivieri 2015a: document no. 42).

Introduction

When this contribution was conceived in 2019, my goal was to explain the meaning of a series of constants that were not very noticeable but statistically congruent.[1] These constants appeared as small but obvious signs of discontinuity in the chronometric and stratigraphic sequence of the Swat Valley and, in particular, of its central site, the ancient urban settlement of Barikot.[2] The geographical and historical context here is that of the Karakoram–Hindu Kush piedmont of the macro-region known as Gandhara in the time span between the end of the second millennium BCE and the beginning of the first millennium CE.

1 I would like to thank Lauren Morris for her great editorial work on the manuscript of this contribution. It is thanks to her that this short essay of mine has taken the form it has now, which is the form I had hoped to give it from the moment of its initial writing.

2 On the importance of the site, see Petrie 2021, 178–179.

Olivieri, Luca M.: Double-crop Pocket Zones and Empires: The Case of Swat, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 45–80. DOI: https://doi.org/10.17885/heiup.1582.c22721

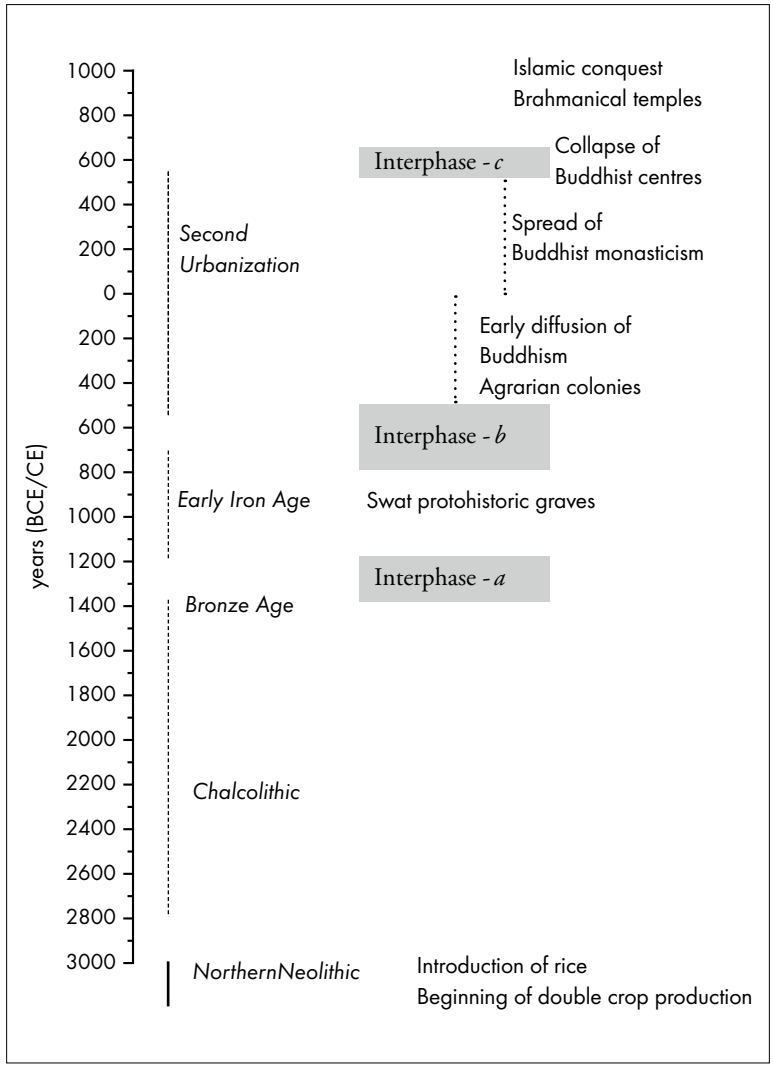


Chart 1 The interfacial sequence of the Swat Valley 3000 BCE–1000 CE.

Such signs of discontinuity, which actually contain important information for understanding human–environment relations in this delicate context, can also be defined in archaeology as "negative interfaces." This term is mainly used to define elements of anthropogenic or natural interventions resulting from intentional/unintentional ablation or obliteration of part of the stratigraphic deposit. Failure to understand such phenomena can induce serious errors in the interpretation of the stratigraphic

sequence and its chronology.[3] Still more elusive kinds of negative interfaces are represented by absences of activity, i.e., by real phases of stasis in the anthropogenic deposition process. In this contribution, I am concerned with the latter variety of negative interfaces, also known as "interphases." In the otherwise extremely rich stratigraphic history of the Swat, three interphases are recognized: those between 1400 and 1200 BCE (Interphase - *a*), between 800 and 600 BCE (Interphase - *b*), and between 500 and 700 CE (Interphase - *c*) (see Chart 1).[4]

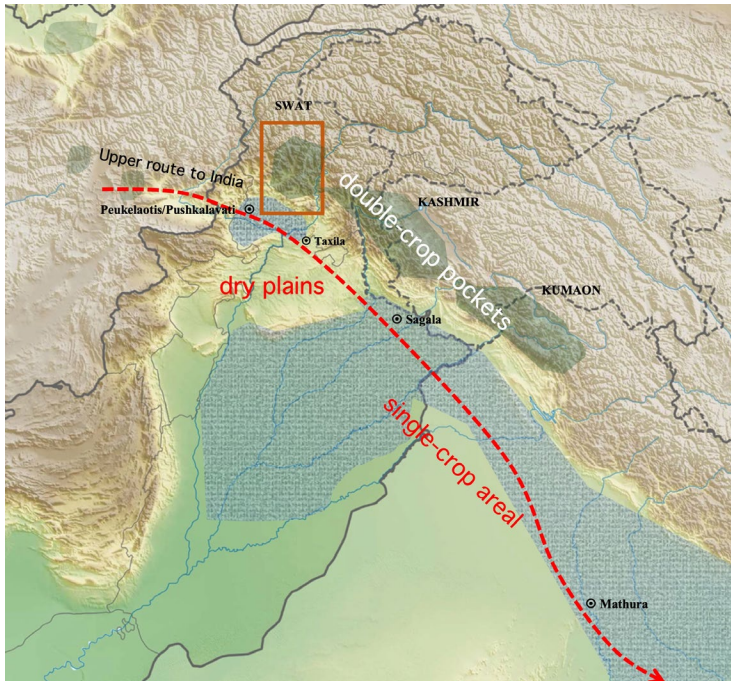
The exceptional nature of these phases in the context of the standard anthropogenic sequence in Swat can be hypothetically explained by climatic crises, or at any rate, by high-impact exogenous factors. This is especially clear when we consider what was Swat's great fortune for human settlement, namely, the combination of climate, water, fertile land, and hours of insolation per annum that made this valley one of the most important economic double-crop pocket areas in this part of Asia during antiquity. Initial reflections on the significance of these pocket zones led me to think more about the power relations between consumer centers and their productive peripheries—in our case, between large cities of the plains and the productive plains of Swat.

Physical Setting

Geography

The setting of the archaeological data considered in this contribution is the median stretch of the Swat River valley or Middle Swat, located in the piedmont of the Hindu Kush–Karakoram–Himalaya (Fig. 1). Middle Swat is morphologically different from the upper valleys. Upper Swat is a typical north–south U-section glacial valley, which is characteristic of the region. As the average height of the mountain slopes decrease to 4,000 m AMSL, the valley gradually opens up. This marks the beginning of Middle Swat, where the river flows from east-northeast to west-southwest. From this point, Middle Swat features an enclosed fertile highland, modeled after an ancient tongue-shaped glacial lake. This fertile enclosure is formed by a silty alluvial plain of approximately 1,000 km², including also the main tributary valleys, lying at an average altitude of < 900 m ASL. The floodplain soils are rich in minerals, such as phosphorus, and nitrogen.[5]

3 See Olivieri 2020a.
4 A synthesis of these issues has been published in Olivieri 2020b; see also Olivieri 2022a.
5 On agricultural soil, agricultural production, and land use in Swat, see, e.g., Nafees et al. 2008; Nafees et al. 2009; Qasim et al. 2011; Qaim et al. 2012; Atta-ur-Rahman et al. 2016.



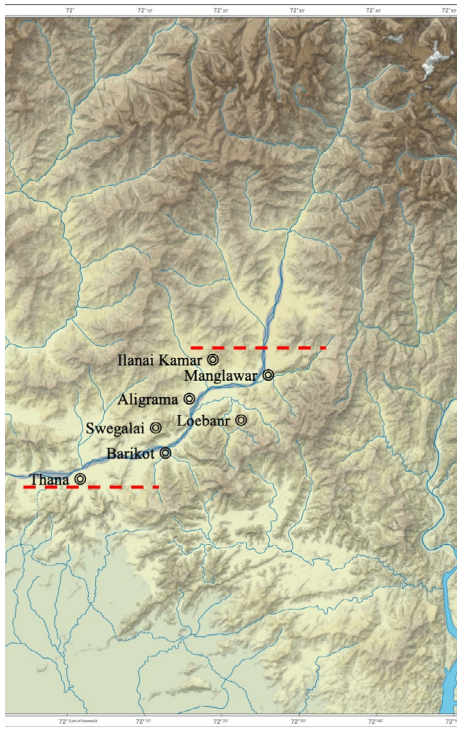


Fig. 1a+1b Double-crop pocket zones of the Hindu Kush-Karakoram-Himalaya, with Middle Swat in inset.

Fig. 2 The ager of Barikot seen from SW.

The right bank of Middle Swat is characterized by at least three major tributary alluvial fans that were exploited by important ancient settlements. The northernmost of these settlements was Damghar, an important agricultural hub and a key site in Moghul times. Damghar is then followed by Aligrama and Ilanai Kamar—two well-known sites for protohistoric agricultural production—and then Swegalai, which featured an important phase of occupation dated to the first millennium CE. On the left bank of the river, there were four large alluvial fans. Closer to the northern limits of the most favorable climatic zones lies the agricultural hub of Manglawar, the region's capital in the thirteenth century.[6] At the center of the valley, two major protohistoric farm sites (Kalako-dherai and Loebanr III) are located at the confluence of two tributary rivers near present Mingora, a major urban center until the medieval period.[7] Fifteen kilometers further to the southwest were three interconnected fertile valleys representing the vast *ager* of a second large ancient settlement, now Barikot, which will be thoroughly discussed in this contribution (Fig. 2). The largest plain lies

6 On Manglawar, see below.

7 On the ancient urban area of Mingora, the ancient Massaka/Massaga (Menjieli), see Iori 2023a, with further references therein.

downstream in the area of Thana, where the pass of Shahkot—the major gateway of Swat—is located. Each of these zones on both sides of the river in Middle Swat is separated by mountain ridges, producing different micro-climatic zones. Thana, for example, is more humid; Barikot/Swegalai is drier; and the zone between Mingora/Aligrama and Manglawar/Matta is cooler (fruit farming is dominant there nowadays). Manglawar/Matta represents both the upper limit of double-crop agriculture and of the Middle Swat zone.

Climate

Water supply in Middle Swat is guaranteed by permanent glaciers and winter snowfall in Upper Swat (where peaks reach 5,000–6,000 m AMSL). This regular resource is seasonally melted through the mild exposure of the highest valleys to the summer monsoon. Besides the wealth of water, the particular temperate climate of Middle Swat (having a west–east orientation) benefits from exposure to sunlight throughout the day. Through convection, this favors regular breezes from the valley and mountains at sunrise and sunset. Winter is mild and summer is moderately hot, although humid. The northern mountain barriers contribute to protecting summer crops from excessive cold and rain, while the southern mountains help to store the summer warmth and humidity until mid-November.

Double-crop Production

Given these conditions, it is not surprising that archaeological evidence has proven that double-crop agriculture has been practiced in Swat since at least the Bronze Age. Double-cropping refers to the ability of farmers to produce two staple crops from the same piece of land in the same year, with harvests taking place in late spring and in fall. In natural conditions, double-cropping is made possible from the combination of a mild fresh climate and an abundance of water throughout the year. In South Asia (here also "the Subcontinent"), such conditions are only found in valleys with generally scarce exploitable land at medium-high altitudes. Thus, zones featuring the natural conditions for double-cropping as well as available, cultivable land are rare. Although such zones were marginal in respect to long distance trade, they have been always strategically crucial for organized states, including empires. Such states maintained an interest in protecting the surplus capacity of double-crop pocket zones, as well as steering agricultural production in these zones in reference to their own needs.

Double-crop Pocket Zones

In the northwest of the Subcontinent, the list of these pocket zones is short, although future research may assess whether the valleys of Lower Kunar and Nangarhar, as well as Loghar and Kapisa—traditional breadbaskets at the south of the Hindu Kush—can also be described as such zones. Immediately to the north of Kapisa/Begram, on the other side of the Hindu Kush, lies the valley of Baghlan, with its center at Surkh Kotal.[8] The region, possibly mentioned in the inscription of Rabatak as "the plain of Kasig,"[9] must have had great agricultural importance,[10] also taking its altitude and orientation into account. When coming from the south, this area was possibly the first large double-crop pocket zone in Bactria before reaching the plain of Balkh.

Farther east, along the piedmont of Hindu Kush–Karakoram–Himalaya, the following zones have been archaeologically studied: Swat, Hazara, Kashmir, and Kumaon.[11] The critical mass of data yielded by Swat, however, is comparatively high and detailed enough to allow the elaboration of a hypothetical model on the strategic role of these agricultural production zones in antiquity.[12]

An Interpretative Model

Highlands and Plains

To explain the relationship between plains and mountains in Gandhara, we can start with a significant example from recent colonial history (recalling also that the relationship between empires and productive peripheries is precisely the theme of this contribution). One side effect of—if not a reason for—British expansion across the Hindu Kush was the catchment of Swat's water resources for a program of agricultural exploitation, namely, producing sugar cane and tobacco. But, in fact, before the establishment of the Swat canal system in the early twentieth century, the territories of ancient Gandhara (to the south of Swat and to the west of the Indus)

8 See Olivieri and Sinisi 2021.
9 Falk 2015, § 096, l.8.
10 Hill in Falk 2015, 66.
11 The importance of double-crop areas in ancient India was also noted by the Greeks; see, for example, Diodorus Siculus [Diod. Sic.] 2.35.3. For further elaboration, presented within an extremely important synthesis of agrarian technologies and policies of early Indian states, see Daffinà 2019, 558.
12 See, recently, Yang et al. 2019.

were nothing but semi-arid savannas. The area of Charsadda, the regional capital of Pushkalavati, had served as a hunting ground for rhinoceros and other big game in the early sixteenth century. Of course, this land must have also hosted agricultural fields, but their annual production would have totally depended on the monsoon (single-crop or *kharif*-crop). However, the naturally irrigated Swat offered the conditions for steady double-crop production, which allowed the Moghuls to excise higher taxes in grain ass-loads there in comparison to those imposed in the capital cities of Kabul and Ghazni.[13]

Unfortunately, for earlier periods we can rely only on indirect evidence. Nevertheless, the overall picture of the data allows us to formulate the following model, taking the final stage of the first millennium BCE as an example. While the available data for the early first millennium BCE seem to indicate a semi-arid phase with reduced monsoon activity, from about the sixth to the fifth centuries BCE, there are clues pointing to a long warm-humid phase in Swat.[14] While the botanic evidence of Swat (and particularly Barikot) is rich, the evidence at Charsadda-Pushkalavati is meager. An absence of chaff or cereal waste products has been noted there, which may be interpreted as a proof that these cereals were not locally cultivated but, rather, imported, possibly from Swat and its surrounds.[15] The regional capitals of Pushkalavati and Taxila, established along the major trade route to India linking Kabul to Pataliputra, were therefore dependent on the double-cropping climate of the highlands for their regular supply of staple agricultural products. Once these pieces of information are put together, the early foundation of a city at Barikot may perhaps be now understood as the establishment of a center of control, functioning to collect, store, and protect the strategic resources of the territory.[16] We may thus envisage a kind of fortified colony that was functional to the life and economy of the regional capitals, which had thus far been built along major trade routes but otherwise less favorable terrain.

13 See Barth 1956, 1080. In the early sixteenth century, the area of Charsadda and its surroundings were hunting grounds for rhinoceros and other big game (see, e.g., *Bāburnāma* fol. 222b [Thackston 2002]). Locally, agricultural fields would have been single-crop or *kharif*-crop (compare the taxation amount in grain ass-loads *Bāburnāma* fol. 131; 220; 236b [Thackston 2002]).

14 Preliminary data from Barikot (LASER CHIP project; see below). We have no direct data on the paleoclimate of the region except for the first data from the ongoing study in Barikot (see below). Apart from these, we refer here mainly to Coningham and Young 2015, 50–52; Joshi et al. 2017; Giosan et al. 2018; and, particularly, to Spate 2019 and Jan et al. 2019.

15 See Ali and Coningham 2007 in addition to Young 2003.

16 Again, see Daffinà 2019.

The Control of Resources

Let us take, for example, a moment particularly rich in important first-hand information: the Macedonian expedition to Swat (327 BCE). At the time of Alexander, although in a phase of political fragmentation,[17] Swat still was the most important source of food in the region.[18] The need to control food resources of Swat certainly defined the military strategy undertaken by Alexander, so that supplies and safe control of the *uttarapātha*, the northern road to India, could ultimately be guaranteed.[19] In fact, the city of Bazira (Barikot; see below) is described by a first-hand source of Curtius Rufus as *opulenta*, a term clearly indicating agricultural wealth that is otherwise very parsimoniously utilized by the Roman historian; it appears elsewhere only in reference to Tarsos, Babylonia, Persepolis, and Bactra.[20] Ptolemy I Soter, a general of Alexander during the Swat campaign, reports (Arrian, *Anab*. 4. 25. 4) of "large herds of superior quality" seized by Alexander and sent from here to Macedonia. Once Swat was secured, in addition to a great wealth of grain in granaries at Ecbolima (near the Ambela pass, between Swat and the Indus; *Anab*. 4. 28. 7),[21] Alexander joined the great part of the army waiting for him at the ford on the Indus, along the *uttarapātha*. The latter is a "winter road," typically used when the level of the Indus and the rivers of Punjab are at their lowest level, so that they can be easily forded. The detour of Alexander in Swat and his march to the Indus thus took place—as Babur would realize to his own cost more than a thousand years later—at the best time of the year, when not only were the water levels of the rivers favorable but the harvesting and storing of seasonal crops had concluded: "It was the end of the year, only a day or two left in Pisces […] if we went now to Swat the soldiers would not find any grain and would suffer. […] Next year we should come earlier, at harvest time […]."[22] After Alexander, the strategy of control of agrarian resources is again well testified in Indo-Greek times. If our reconstruction is correct, Swat might have been thus fortified during the formative

17 See Curtius Rufus, *Hist*. 8.10.1. With reference to Alexander's strategy in Gandhara and the availability of food resources, see also Strabo XV, 1, 26.

18 In fact, the ongoing study of the Swat paleoclimate (LASER CHIP) is showing that, while the Gandharan region continues to be affected by a prolonged process of aridification around the mid-first millennium BCE, the Swat valley (on a local scale) shows an opposite trend, i.e., a gradual attenuation of aridity/semiarid conditions, already between 400 BCE and 100 CE. See Current Hypothesis, below.

19 The detour of Alexander in Swat is otherwise inexplicable (Coloru and Olivieri 2019; Olivieri 2020c).

20 I owe this information to my colleague Luisa Prandi of the University of Verona. See Spengler et al. 2020; Coloru and Olivieri 2019.

21 Coloru and Olivieri 2019, 101.

22 Trans. Thackston 2002, 268.

phases of the Indo-Greek kingdom to protect a crucial economic pool—this time, for the new Pushkalavati.[23]

Some Tentative Figures

To better understand the magnitude of the problem we are confronting, we should try at this point to establish the provisional size of agricultural production in Swat. If an estimated 1,000 km² of arable land were suitable for double-cropping, under optimal conditions (which we now know remained so in Swat for at least seven centuries in early historic times),[24] and if all this land were put into agricultural use at the same time, enough food would have been produced to feed well over half a million people. In premodern times, the population never exceeded this figure. Following the model presented by Monica Smith,[25] there might have been well below 200,000 inhabitants in Swat at the peak of its urban and monastic development at the end of the second century CE.[26] Following Dieter Schlingloff's model,[27] all the known cities of Swat[28] might have been inhabited by around 30,000 people in total, approximately 6,000 of which could have lived at Barikot (12 ha). This figure should not be too far from the truth. According to the intelligence reports collected in the *Frontier and Overseas Expeditions from India* updated until 1907, the total population of the valley was estimated at about 96,000.[29] Forty years later, at the climax of the political stability created by the Yusufzai State of Swat, a census of the valley registered ca. 300,000 inhabitants.[30] With

23 See Coloru, Iori, and Olivieri 2021.

24 Albeit on a preliminary basis, the LASER CHIP project is demonstrating, through the study of isotopes of paleosols, the existence of a climatic optimum between the middle of the first millennium BCE and the third–fourth century CE. This time span corresponds exactly to the emergence, development, and decline of Bazira as an agricultural colony and corresponds to the spread of Buddhist monasticism, the spread of cotton cultivation, etc. (see the recent communication of Dario Battistel, DAIS, Ca' Foscari University of Venice, presented in the framework of the Workshop "The long 8th century CE" (27/11/2023–01/12/2023) at the Zentrum für interdisziplinäre Forschung, Universität Bielefeld). As a side note, one might consider, but on a very preliminary basis, that although the LASER CHIP data demonstrate a marked climatic exceptionalism in Swat, in this case the phenomenon might be observable at the macro-regional level in Eurasia, making the "Gandharan optimum" in chronological and macrophenomenal terms coincide with the well-studied phenomenon of the "Roman optimum."

25 Smith et al. 2016.

26 Xuanzang reports the presence of (only?) 18,000 monks in the best years of Buddhism in Swat (Xuanzang III, 1).

27 Schlingloff 2013.

28 Aligrama, Menjeli/Massaka/Barama, Ora/Udegram, Bazira/Barikot.

29 Intelligence Branch, Army Head Quarters India 1907, 322.

30 "Pathans number about 450,000, Kohistanis perhaps 30,000. The number of Gujars [nomadic herders] in the area is difficult to estimate." (Barth 1956, 1079; based on data from 1954).

these figures, it is evident that a great part (more than fifty percent in ancient times) of annual agricultural production was suitable for export. Not only were agriculture and farming activities—in addition to forestry, mining, and the stone industry—the main resource of Swat, they were also a resource that exceeded the similar economic potential of neighboring regions.

The Current Hypothesis

We hypothesize that the fortified city at Barikot was founded at the center of an exceptionally wealthy natural environment within the economic and strategic space of a macroregional political entity (during the expansion of the trade contacts between the Achaemenian satrapy of Gandāra and the states of Gangetic India), which would have necessitated the militarized protection of these resources. These geo-strategic conditions were the prerequisites for urban development at Barikot. In noncentralized political environments, as we will see, cities can contract or even disappear; but this does not affect agrarian production, simply the structure of production. In the following pages, I will attempt to substantiate these initial assumptions with the data available so far.

Archaeological Data

Direct Evidence 1: Paleobotany

Our data on the agricultural importance of the Swat valley are based on a seriation of different sets of information, which will be only briefly presented here alongside key references where the reader may find further details.

The paleobotanic evidence relating to prehistoric Swat does not need to be restated here. We can refer to the pioneering work of G. Stacul and L. Costantini,[31] where evidence of double-cropping was first presented and discussed.[32] Early double-crop agriculture, which in Swat basically entails growing wheat or barley and rice (C_3 cereals), is largely documented in the agrarian settlements excavated at Loebanr III, Aligrama, Kalako-dherai, and Barikot. All those agrarian settlements were established already during the so-called Northern Neolithic, when improved climatic conditions favored the spread of settlements both in Kashmir and in Swat between the third and second millennia BCE.[33] It may

31 See Stacul 1987 and Costantini 1987, with further references therein.
32 See also Fuller 2007.
33 On Kashmir, see the important recent contribution by Betts et al. 2019.

Fig. 3 Paleobotanical remains from Barikot: *Hordeum vulgare*, *Oryza sativa*, *Gossypium* sp. and *pisum captivum*.

be noted here that Swat and Kashmir share some geographic characteristics, such as altitude, climate, morphology (both are palaeo-humid zones/lakes), and environment.

More recently, a significant quantity of organic material (over 5,500 complete seeds and thousands fragments of cerealia and legumes) was collected during the excavations at Barikot by the ISMEO-Ca' Foscari Italian Archaeological Mission in contexts dated between 1200 BCE and 50 CE (Fig. 3).[34] The material was analyzed at Max Planck Institute, Jena, under the supervision of R. Spengler.[35] 97.8 percent of the complete seeds refer to domesticated plants, to which fruits and nuts, such as grape, hackberry, and other plants, should be added. C3 cereals dominate the collection. During the 2021 excavation season, 2,700 other seeds were collected from Barikot. Here most of the seeds, to our surprise, were cotton seeds (*Gossypium* cf *arboretum*/*herbaceum*; n = 1,043), a cash crop that was first introduced to Barikot at a time of agricultural intensification associated with both a warm-humid climatic optimum and the beginning of urban settlement, around the middle of the first millennium BCE.[36]

34 For these absolute dates, see Olivieri et al. 2019.

35 Spengler et al. 2020.

36 Olivieri et al. 2022. In 2022 and 2023–2024, the collaboration with the Jena group coordinated by R. Spengler continued, and several thousand more seeds, mostly cotton and rice (even in subsequent phases, until c. 1200 CE), were collected by R. Dal Martello (Ca' Foscari University of Venice).

Overall, among food crops, barley is the most represented cereal (ca. 24 percent of 2,700 total seeds of 2021), followed by rice (12 percent), and wheat (6 percent), and then different varieties of legumes, fruits *et alia*. To cite the concise summary of the significance of these data in the published report, "This is a diversity of crops and intensity of agricultural systems unlike anything that has been identified at any archaeological site further north in Central Asia at this time. Many of these crops, notably the warm-weather legumes, are absent from archaeobotanical results from Central Asia, but they are present further south in the Indus valley. […] Likewise, many of these crops, notably *Oryza sativa* and *Gossypium* sp., are extremely water demanding and would have required irrigation, as rice is traditionally grown in wet fields in this region."[37] One should not be surprised by the absence of C4 cereals in the Swat documentation, in particular the more weather-resistant but less productive millet. Noting that millet is not cultivated even in modern times, and it may never have been part of the diet in the region of Swat,[38] we can hypothesize that the negative evidence reflects the favored climate of ancient (and modern) Swat.

Direct Evidence 2: Visual Representations

The role of agriculture in late protohistory was so important that we also have a few exceptional visual representations of the agricultural cycle documented in the earliest painted shelters in Middle Swat. In particular, we refer here to the interesting testimony of the Bronze Age painted rock shelters of Kakai-kandao and Sargah-sar.[39] In particular, the latter paintings depict the ancient Indian binary of *grām*/*vana* ("village/wild") (Fig. 4). If the *vana* world shows the opposition between ibex and felines, the *grām* or cultivated world shows the complete agricultural cycle: from plowing to sowing to the harvest rituals.[40] All the images are assembled around a central pictogram representing a large anthropomorph inserted in a sowed field that recalls the divine essence of the cultivated field, known in the *Ṛgveda* as Kṣétrapati.[41] Agricultural work is rarely represented in Gandharan art; it appears more frequently in depictions of the ritual plowing of Siddhārta's father, Śuddhodana ("he who grows pure rice") in scenes representing the "First Meditation of Siddhārta."

37 Spengler et al. 2020.

38 A. Nayak (Max Planck, Jena), personal communication (2021). There is an article on this subject about to be published with A. Nayak as first author.

39 See further details and additional references in Olivieri 2015b.

40 See Daffinà 2019, 543.

41 Olivieri 2015b. See also Vidale, Micheli, and Olivieri 2011. Swat is mentioned as Suvastu in the *Rigveda*.

Fig. 4 Paintings from Sargah-sar depicting the ancient Indian binary of *grām/vana* (village/wild) (l. max. 2 m; surface c. 6 m²).

Direct Evidence 3: Techniques

Direct evidence of agricultural practice is revealed by an overwhelming presence of agricultural tools, from the so-called "perforated knives"[42] of the Northern Neolithic and Bronze Age of Swat (Fig. 5a) to the iron scythe blades of the historic phases, as well as the great number of grinding tools, ranging from traditional saddle-shaped querns to the revolutionary rotary querns, introduced during the first century CE (Figs. 6a and 6b).[43] Domestication of zebu, at least since the third millennium BCE,[44] points to the next piece of evidence to be noted here, described as "one of the most remarkable discoveries" in Swat:[45] a plowed paleosol, most probably a rice paddy field, documented at Aligrama in context associated with the Late Bronze Age (Fig. 5b).[46]

42 See Vidale et al. 2011, with further references.
43 See De Chiara et al. 2020 and further references therein.
44 Compagnoni 1987.
45 Barker 2006, 175.
46 Tusa 1979.

Fig. 5a Perforated knives, Kalako-dherai, Late Bronze Age.

Fig. 5b Plowed paleosol (rice paddy field), Aligrama, Late Bronze Age.

Fig. 6a Domestic deposit of rotary querns from Barikot (BKG 11, Block D, Late Kushan phase).

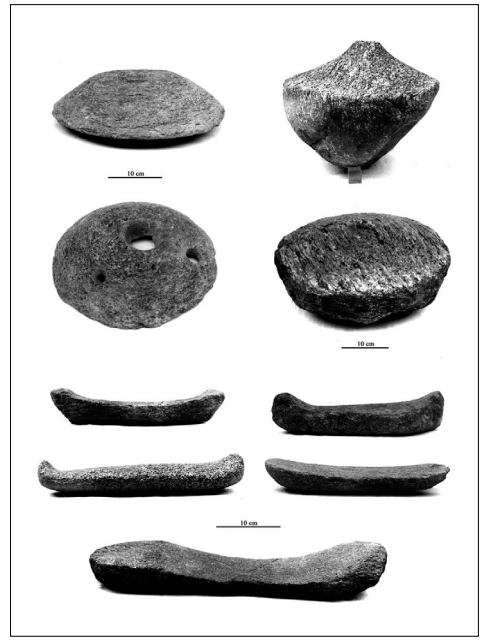


Fig. 6b Examples of saddle-shaped and rotary querns from Barikot (historic phases).

A later example of a plowed field dating to the beginning of the Common Era was documented at Udegram above the abandonment phases of a Late Bronze–Early Iron Age graveyard (SPG).[47] A related set of evidence constitutes the underground structures typical of Bronze Age rural settlements of Swat as well as Kashmir, the interpretations of which as dwellings should now, in most cases, be abandoned in favor of their use as granaries.[48] A final set of information, which aligns with the paleobotanic data, is linked to the significant production of wine in Swat attested by later wine-presses and earlier visual and literary evidence.[49]

Direct Evidence 4: Ceramics

Another body of evidence is constituted by the ceramics in use at the sites of Swat, especially two classes of large restricted vessels, the shape of which remained relatively stable from the Early Iron Age until the third century CE. In particular, we should consider here the pottery class CAc 2, red ware globular pots with everted [necks] rims found in both medium and large sizes (Fig. 7a). These vessels feature a gritty bottom and everted simple rims (or everted necks and simple rim). Often their rims are blackened by their use as cooking pots. The medium/coarse fabric and the gritty bottoms clearly speak of a cooking function. Chronologically, CAc 2 are typical from Indo-Greek to early Kushan phases (second century BCE to second century CE) but, in my view, belong to an early local pottery tradition cooking device with a very local long "shelf life." These large cooking or storage vases are documented in Late Bronze/Early Iron Age settlements sich as Aligrama and Loebanr III, and graveyards such as Udegram UDG and Gogdara 4. To cite the recently published volume on the pottery of Barikot, "the peculiarity of these vessels' association with Swat and surrounding valleys is certainly linked to their function, perhaps linked to local dietary or agricultural production. [...] these pots (with their peculiar restricted lower orifices) were perfect for cooking cereals rich in starch like rice (like the modern restricted-mouth *degg*s, *dohni*s and *gagar*s which are preferred for rice)."[50]

A second pottery class, CBa 2, includes large hole-mouthed jars (Fig. 7b). Hole-mouthed jars are typical of the earliest phases and tend to decline during the Kushan period before reappearing again in post-urban contexts, but with socketed rims for lids. The large mouth suggests the hypothesis that these large vessels were used to store dry

47 Vidale, Micheli, and Olivieri 2016, Fig. 54.
48 See Coningham and Sutherland 1997, with further references.
49 See Olivieri, Vidale, et al. 2006, 142–146; and Falk 2009. On this, see the recent Coloru, Olivieri, and Iori 2024.
50 Olivieri 2020d, 120.

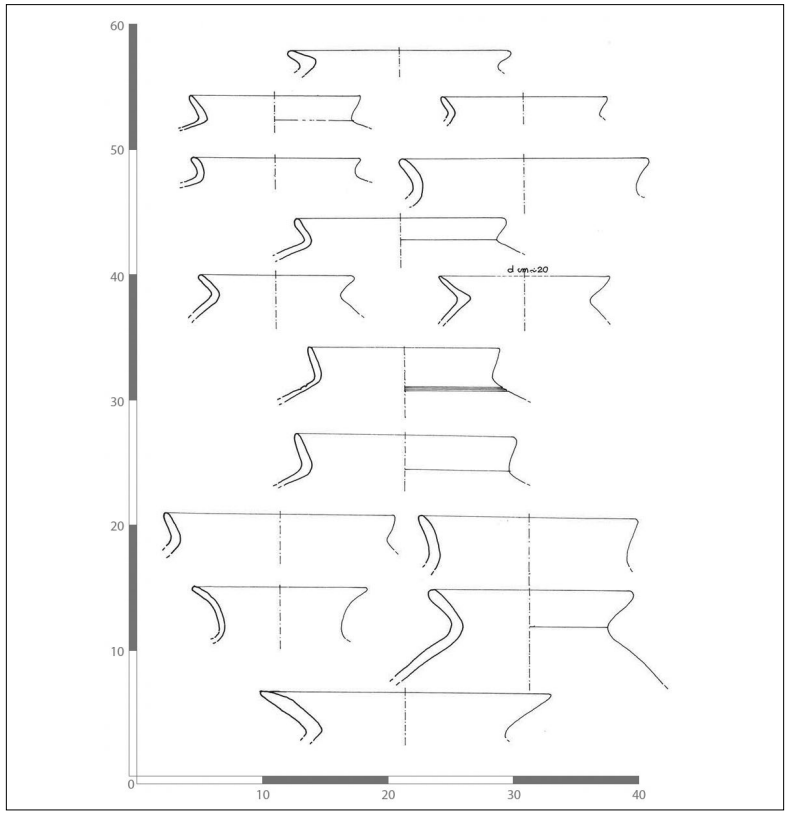


Fig. 7a Red ware globular pots with everted [necks] rims, pottery class CAc 2 (early historic to historic phases).

food. These vessels might have been used as domestic silos but could have functioned as specialized containers for the export of the cereals. The sizes of these hole-mouthed vessels remain fairly stable over time, and, although a complete form was never recovered, we can hypothesize that their dimensions correspond to quantity/weight units. We can here anticipate that the rice surplus from Swat was possibly exported to the major centers of the plain of Gandhara since protohistoric times, where agricultural production was weaker, while demographic concentration and demand were higher. The presence of these truly commercial vessels (whose earliest documentation occurs in the Achaemenid layers of Kandharar) in the "metropolises" of the plain is confirmed both at Taxila (Bhir Mound) and Pushkalavati (Charsadda).[51]

51 Olivieri 2020d, 120–121, with further references.

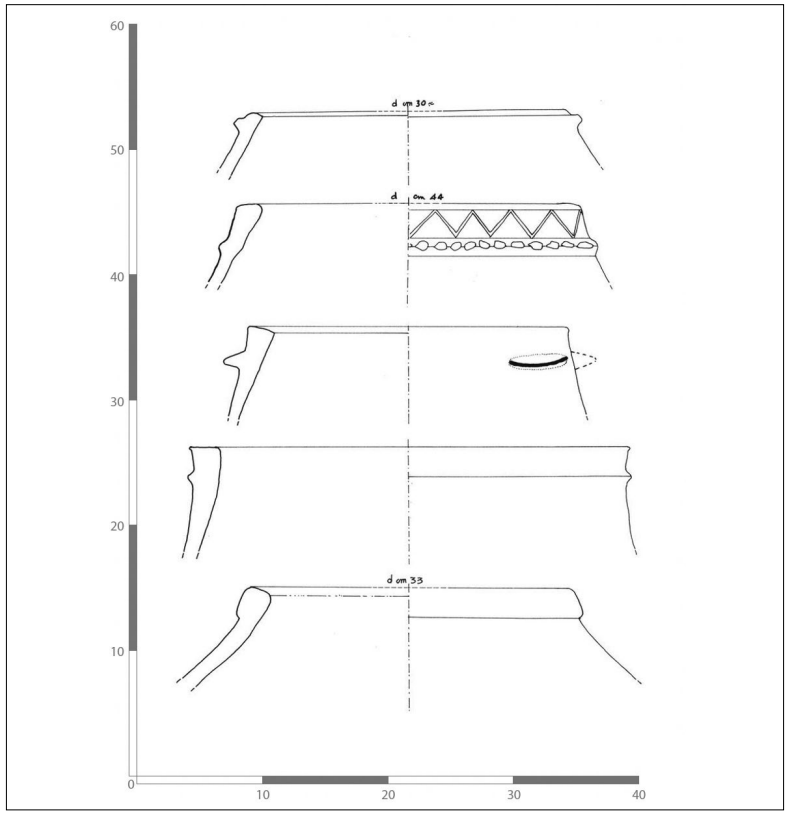


Fig. 7b Red ware hole-mouthed jars, pottery class CBa 2 (early historic to historic phases).

Indirect Evidence 1: Negative Interfaces

Besides revealing direct evidence, archaeological investigations also register negative data. In Swat, where a substantial continuity of human occupation has been documented, such long phases of missing evidence are particularly striking. Apparently, the most dramatic changes in the cultural features of ancient Swat are always marked by phases of abandonment, which have generally been interpreted as caused by natural events. This is the case for the period between the end of the Bronze Age (c. 1400 BCE; Macrophase 0 at Barikot) and the beginning of the Swat protohistoric graveyards (SPG) (c. 1200 BCE; Macrophase 1a at Barikot) (Interphase -*a*), as well as for the phase immediately after the end of the latter (Macrophase 1c at Barikot) before the beginning of the Initial Urban Phase (Macrophase 2a1 at Barikot)

(Interphase - *b*).[52] Around 800 BCE, SPG were abandoned. There is, thus, a gap of approximately 200 years documented throughout Swat but well evidenced at Barikot.[53]

As we will see below, another significant gap occurred between 500 and 600 CE (Macrophase 7 at Barikot; Interphase - *c*), which we have hypothesized may be explained by a climate crisis. Such a crisis may also account for earlier cases of major negative interfaces.[54] It is still too early to assess this, and we await the results of dedicated research on the topic that we have initiated this year (LASER CHIP Project, Ca' Foscari University of Venice; see *infra:* Conclusions). A final note: while we do not have genetic data for the Chalcolithic and Bronze Age, we know that from 1200 BCE until at least 1200 CE, Swat experienced a long phase of human DNA continuity.[55] Therefore, although the last two major events of crisis may have had demographic impacts, they did not change the genetics of people in the region.

Indirect Evidence 2: Land-use Conversion

The vast plots of land once used as burial grounds during the SPG phase later began to be converted for agricultural production.[56] It seems that inhumation, as a general practice, was progressively abandoned. This process of land reclamation (with its economic implications) was apparently gradual, judging from pockets of evidence of inhumation at Aligrama (a few occasional burials),[57] Saidu Sharif I (an isolated cemetery of the end of the fourth century BCE),[58] and Butkara IV (a single aristocratic mausoleum, c. 150 BCE–50 CE).[59] On the basis of the current data, the effective reuse of former land should have started around the mid-first millennium BCE, when a structured

52 The SPG chronology is firmly established between the brackets of 1200 and 800 BCE; see Narasinham et al. 2019, with further references. Regarding Interphase - *a*, LASER CHIP results are showing that the climate component may have played a significant role, as this phase of abandonment would have coincided with prolonged environmental conditions of severe drought at least between ~800 BCE and ~500 BCE.

53 Olivieri and Iori 2019. In Kashmir, archaeologists "have argued that despite this broadening of the agricultural package, the thinness of the archaeological deposits of the [700–200 BCE] phases, coupled with a declining diversity index of wood charcoal at the site indicates some form of population collapse during this period" (Spate 2019, 129).

54 For example, another early neo-glacial anomaly (ENA) may be responsible, like the one that occurred between 2500 and 1300 BCE, entailing intensified severe winter monsoons (Giosan et al. 2018).

55 The reader is referred to the data contained in Supplementary Materials of Narasinham et al. 2019; this issue was also briefly covered in Olivieri 2019.

56 See Olivieri, Vidale, et al. 2006, 131–135; Vidale, Micheli, and Olivieri 2011; Olivieri 2019.

57 Narasinham et al. 2019

58 Olivieri 2016.

59 Olivieri 2019.

globalized system of power was possibly established under the Achaemenids[60] and the so-called "second urbanization phase" (or Initial Urban Phase at Barikot) started in Swat, as well as in the north of the Subcontinent.

The improvement of agricultural production is, thus, also linked to the gradual diffusion of non-taphonomic burial rituals and—last but not least—to the expansion of the Buddhist communities.[61] Indeed, the outcome of the resulting agricultural intensification can also be seen as possibly the most significant achievement of the early Buddhists, and even one of the markers of their social success.

Indirect Evidence 3: Religious and Literary Sources

Finally, Swat is the region associated with the taming of the wild waters obtained through the conversion of the *nāga* Apalāla—tyrant of the waters and creator of famine and distress—by Buddha. Both legends look like they were once two sides of the same myth, embedded with deep agriculturalist symbolism. When we see the dams and the aqueducts around the ruins of the post-second-century-CE Buddhist monasteries in Swat, we cannot help but imagine that, starting from the Kushan period, the irrigation managed by the monks was nothing more than the conversion of Apalāla redux on economic scale, which can be considered the "covenant" moment of Buddhism in Swat,[62] as well as in Kashmir.[63]

The importance of Swat for its agricultural production is well attested in literary sources, encompassing the first-hand accounts available to Alexander's historians; the early Buddhist texts, including Chinese sources (Song Yun, Xuanzang), ending with the *Bāburnāma;* the slightly later *Swātnāma;* and the British colonial reports and gazetteers.[64] Double-crop production was so important in Swat that the great Norwegian ethnographer F. Barth built on it in one of his most seminal studies on

60 I like the extended definition of analogous features given by Spate 2019, 12: "vertical complexity and state building" and "a time of major institutional realignment, with an expansion of bureaucracy, intensification of public works."

61 Olivieri, Vidale, et al. 2006; Olivieri 2019.

62 Salomon 2019, 33. A reasonable etymology of the Sanskrit name Apalāla is "without straw, sprout." The extraordinary importance of this theme (the binomial water; magic or flood; *nāga* deities) is demonstrated by its survival in Pashtun folklore (see See Inayat-ur-Rahman 1968, Tale 16; Tale 25. The first tale is set in Barikot and features the king and magician Upāla, the jogi Padmānī, and the goddess-serpent Kupal as protagonists. The king's palace-fortress was located on the hill of Barikot).

63 Tucci 1958, 282, n. 18. On this, see again Olivieri, Vidale, et al. 2006.

64 See Olivieri and Iori 2022. Chinese sources, in particular the *Luoyang Qielan ji* (sixth century CE), confirm the exceptional agricultural richness of the Swat valley [Udyāna] (see Kuwayama 2006, 65–66). The agricultural wealth of Swat in the seventeenth century is described in the *Swātnāma*

the Swat Pashtuns. He interpreted the diachronic territorial expansion of the Pashtun groups as a movement of gradual acquisition of double-cropping areas throughout four centuries.[65]

Early-historic Data

Overall, the above data represent the foundations on which we can confidently build—as Barth did from his data—a possible interpretative model of Swat's role in food production, both for itself and its neighbors, over the millennia. In order to keep the flow of the following text clear, citations will hereafter be limited to footnotes referencing mainly pieces of scholarship that have not yet been cited above.

Proto-urban Patterns of the Iron Age

Our knowledge of the cultural history of Swat improved exponentially in recent years, when the excavations at Barikot revealed a structural and stratigraphic sequence that details the entire life of the city from the Proto-Urban levels to c. 300 CE in the lower city and to c. 1400 CE on the acropolis (Fig. 8). The city was known to Alexander's historians as Bazira or Beira, and as Vajrasthāna in a later Indian epigraphic source.[66]

In the Early Iron Age phase, the farm site settlements of Aligrama and Barikot had articulated layouts: clusters of permanent structures, extensive graveyards, and, at Barikot specifically, inner citadels. Here, the settlement (larger than the future urban establishment, at fifteen to twenty hectares) was built around an inner stronghold revealed by a stretch of a large earthen rampart preserved at a height of up to 1.23 m, with a visible width of more than 5 m. The latest phases of the rampart are radiocarbon-dated to 1100–1000 BCE.[67] The associated material belongs to a shared regional pottery tradition, diffused from the highlands to the plains, including Gandhara proper (Charsadda) and the trans-Indus (Taxila).

of Kushal Khan Khattak (Sultan-i-Rome 2014, 115). On Swat in the eighteenth and ninteenth centuries, see Stacul 1987, 9–11.

65 Barth 1956. See also Paine 1982 for further references.

66 See, respectively, Baums 2019 and von Hinüber 2020.

67 See Olivieri and Iori 2020 in addition to Olivieri et al. 2019.

Fig. 8 Plan illustrating the archaeological trenches excavated at Barikot (updated winter 2024) (in red: refilled trenches).

The Initial Urban Phase and the "Gandharan Optimum"

The collapse of Swat's regional cultural material identity in circa 800 BCE is followed—after a significant gap, as we have seen—by a sudden re-expansion of the archaeological evidence in the sixth to fifth centuries. From this point onwards, we have documented all the markers of a true urbanization at Barikot as well as the presence of Iranic and Indo-Gangetic pottery forms.[68]

The latter evidence suggests that the foundation of a city at Barikot occurred in a moment of climatic optimum associated with a growth of trans-regional trade.[69] That moment, thanks to radiocarbon dates, can be associated to the phase of Swat's

68 Olivieri and Iori 2020; Olivieri et al. 2019; Coloru 2021.

69 Preliminary results of the LASER CHIP project observe an abrupt transition to a wetter environment, mainly due to increased summer monsoon activity, at least since 50 BCE. This factor, together with the climatic and morphological preconditions of Swat, certainly led to a further intensification of agricultural production, making Swat even more relevant in the regional resource supply system.

integration into the Achaemenid imperial network. Aside from in Barikot, the early stages and further development of this initial urban phase find analogies in other sites in Swat as well as in the plains at Taxila and Charsadda/Pushkalavati. In this phase, the augmented agricultural production was perhaps exploited by a more structured system of power (in this case, the Achaemenid system). This is possibly the moment when Swat came to be organized as a true agrarian colony.

In fact, although the economic implications of double-cropping were clearly perceivable already before the formation of early cities at the end of the second millennium BCE, it was after 500 BC that we see the protohistoric farm site being transformed into a wealthy city. According to preliminary data from our paleoclimatic studies, the urbanization phenomenon of the mid-first millennium can be linked in Gandhara to the beginning of a long phase of climatic optimum (which our Barikot research team called "Gandharan optimum") that lasted more or less steadily until the third century CE.

We can catch hints of Swat's political autonomy in several references scattered throughout historical and epigraphic sources. That, in Alexander's time, Swat was already semiautonomous (albeit within the framework of the Achaemenid system) is suggested by the figure of a Sisikottos, relative of Assakenos, king of Swat (a king, not a satrapal governor) who performs ministerial service roles alongside Bessos in Bactria and then goes on to serve Alexander and guide him to Swat.[70] Swat's autonomous status, which derived from the management of agricultural surplus resources, was maintained at least until the end of the first century CE.[71] The inscription of Senavarma (c. 70 CE), the last king of the Oḍiraja with his wish for the dynasty to last a thousand years, clearly tells us of a situation of happy autonomy if certainly not total independence, given Senavarma's own polite appeal to Kujula Kadphises' son. According to a recent hypothesis, land ownership is still firmly in the hands of the aristocracy at this stage.[72] Events following the final Kushan seizure of power in Swat (occurring perhaps with Vima Takhto, who is the first Kushan king whose coins we frequently find) highlight from around the very early years of the second century the colonization of the rich countryside by large monastic foundations and the simultaneous disappearance of the Oḍiraja and of the gentry elites from the epigraphic record.

70 Arrian *Anabasis*, IV 30, 4; Coloru 2021, 70.
71 See Olivieri 2022b, with references.
72 Again, Olivieri 2022b, 71–72.

The Mature Urban Phase

As we know from Arrian, in Swat Alexander "built fortresses at Ora and Massaga for the defense of the region, and fortified the city of Bazira" (Arr. *Anabasis* [*Anab.*] 4. 28. 4). Two centuries later, the Indo-Greeks built a new, massive stone-masonry defense around the city, which was reinforced at the beginning of our era, during the Saka-Parthian cultural phase.[73] On the basis of the new data, the Indo-Greek fortification at Barikot (coeval with the foundation of the new Pushkalavati at Shaikhan-dheri) are both to be dated to the second half of the second century BCE, most probably towards the reign of Antialkidas (Macrophase 3a at Barikot).[74]

During the Kushan historical phases (Barikot Macrophases 45a), the city saw a gradual expansion of the built-up area and the abandonment of military fortifications, at a time when Gandhara and particularly Swat found themselves in a long period of peace at the center of a larger metropolitan territory.[75] Many years ago, I proposed a thesis that reads the abandonment of the walls as a direct effect of the *pax kusanica*.[76] Today, I would be inclined to propose an alternative but concomitant reason to explain the demilitarization of the city. The dismantling of the defensive walls of the city of Barikot can be interpreted, directly or indirectly, as signaling the disempowerment of the landed aristocracy, with the concomitant transfer of power to the monastic communities. The thesis proposed here is that the city walls were demolished (or, at any rate, not rebuilt) as a deliberate sign of the handover of the reins of economic administration—which involved the collection of taxes and the management of agricultural deposits—from the landed nobility (the urban elite) to the Buddhist monasteries.

Whatever was the reason for this pivotal event in the structural history of the city, the city continued to carry on its life as a center of aggregation, while many residential quarters of the city from the end of the second century also began to be transformed into monastic areas or urban monasteries, perhaps in some cases run by women's communities.[77]

The city was abandoned during the Kushano-Sasanian rule in the early fourth century CE (Macrophase 5b in Barikot).[78] Ample traces of two major earthquakes have been documented in this last century of life at the city at Barikot (Macrophase 6 at Barikot). This crisis of urbanism in Gandhara and Swat is confirmed in practically all

73 See Olivieri 2015c; Iori, Olivieri, and Afridi 2016; Coloru, Iori, and Olivieri 2021.
74 See Olivieri and Iori 2020.
75 In fact, once Bactria was lost during the reign of the first Sasanian king, Ardashir I, Swat and Gandhara lost their strategic depth and were soon occupied by Ardashir's son, Shapur I.
76 In Olivieri 1996.
77 Iori 2023b.
78 Olivieri 2015c; 2017; Olivieri and Filigenzi 2018; Iori and Olivieri 2019.

urban centers in and around Gandhara (from Begram to Barikot, Udegram, Barama, Charsadda/Shaikhan-dheri, and Sirkap) and certainly involved drastic social changes. Perhaps this crisis cannot be associated with the end of the "Gandharan optimum."[79] In fact, since the agricultural economy had long been in the hands of the monasteries, in Swat the economic impact of the city's crisis was not as noticeable as one would have expected (see below).

A Climatic History

...Business as Usual

In fact, despite the urban crisis of the late third century CE, the "business" of agricultural production continued as usual. This is because agricultural production was firmly in the hands of Buddhist monasteries already from the beginning of the second century CE. After all, these monasteries constituted the only local actors possessing staff, organization, and infrastructure, run by expert administrators of high ethical reputation with writing and computing skills.[80] Through royal and private donations, Buddhist monasteries must have had accumulated large estates where they built hydraulic infrastructure such as dams, aqueducts and pit-wells, which are still visible today. Land might have been administered by means of a joint system: tenancy in the high pastures and forestry pools, and crop-sharing in the lowlands. If the first system is possibly indicated by the existence of non-Buddhist semi-nomadic tribes in the mountains,[81] the second is documented by the existence of structured farm villages and agricultural terraces along the alluvial land at the foot of the rich Buddhist monasteries. Significantly, the system of administering land remained functional for at least two centuries after the collapse of the urban system. The crisis, as we will see, might have been triggered by an unpredictable climatic event rather than political or structural change.[82]

79 According to climate data from the LASER CHIP project, the urban crisis that followed the third century CE was in no way related to climate variability.
80 Iori 2023c with references.
81 Discussed in Olivieri 2015b.
82 See Olivieri 2017a; Olivieri and Filigenzi 2018.

The Late Ancient Crisis

However, this system of land management and production stopped working a few centuries later. At this point, according to Xuanzang's testimony, Buddhism in Swat experienced a significant decline around the sixth century CE. The decline was not limited to religious or doctrinal aspects but apparently involved the entire social and economic life of the region. In fact, Chinese sources and diplomatic annals clearly exclude Swat from their descriptions of the main trade routes after 538 CE. Xuanzang, the first Chinese visitor who came to Swat (a century later), found the situation of the economy and Buddhist complexes dramatically compromised. In Xuanzang's words, this fact is also associated with the concomitant collapse of the agricultural production system. This fact, in my opinion, must have been an important turning point in the economic history of the valley. In reference to the accounts of Chinese Buddhist pilgrims, Tucci already succinctly pointed to the scope of this process decades ago: "It is not easy to explain the decrease of monasteries after Fa-hsien [Faxian] (399–414 A.D.) (1,400 monasteries) and the fact that at the times of Hsüan-tsang [Xuanzang] (he travels from 629 to 645) many of them were in ruins [...]. Sung Yun [Song Yun] (he travels from 518 to 523) speaks in high terms of the Buddhist community and does not anticipate the different statements of Hsüan-tsang. 1,400 monasteries imply not only a widespread devotion, but also a great wealth necessary for their maintenance."[83]

This process of decline is reflected archaeologically, as there is a striking gap of evidence during the late sixth to early seventh centuries CE in Swat (Macrophase 7 at Barikot). Interestingly, a similar gap between major archaeological phases is recorded in almost all stratigraphically investigated sites to the west of the Khyber Pass, from Ghazni to Kapisa: Tapa Sardar I and II, Begram II and III, and Tapa Skandar I and II. One of S. Kuwayama's most concise and important contributions on the latter sites is dedicated precisely to this problem.[84]

However, it is worth noting that the crisis is more evident in the central stretch of Middle Swat. In fact, in the seventh to eighth centuries CE, late Buddhist pilgrimage centers in the side valleys of Middle Swat and around the center of Manglawar began to be renovated with addition of rock sculptures.[85] This confirms what Tucci documented through Chinese and Tibetan sources, i.e., that in the seventh century, "Swat was split into two political entities: one ruled by the Buddhist king Indrabhūti

83 Tucci 1977, 67.
84 Kuwayama 2010.
85 The reference study for these data is Filigenzi 2015.

(protector of the late Buddhist schools),[86] while the other was politically dependent on the [Turki Shahi] Laghman-Kabul area."[87]

The Causes

How this process of decline should be explained is less clear. Tucci suggested that "[...] something had, then, happened [in Swat] between the visit [of Song Yun and Xuanzang]. I suppose the cause may be attributed to natural calamities and social unrest [...]."[88] Verardi was even more explicit, stating that it was not possible to "believe that the change [...] took place without any violence."[89]

A provocative alternative hypothesis has more recently been generated through discussion with other colleagues, including Nicola Di Cosmo of the Institute of Advanced Studies, Princeton, in reference to the so-called "late antique Little Ice Age" (LALIA), a long cooling period occurring between 536 and 660 CE. Namely, it may be possible that the collapse of agricultural production in Swat was instigated by the effects of the LALIA. In a similar fashion, scholarly studies have already attributed other regional collapses of imperial organizations, dramatic exoduses of populations across Eurasia, and even the Plague of Justinian to the LALIA.[90] Indeed, new research is showing that the effects of the LALIA have significant regional variations, especially in peninsular South Asia: "A significant link between cooling and social disruption is demonstrated, but it is also demonstrated that the link is highly variable, with some societies experiencing dramatic cooling changing very little, and others experiencing only slight cooling changing dramatically."[91]

In respect to Swat, it is, therefore, probably still too early to advance a comparatively structured hypothesis to explain the collapse of agricultural production. However, it will be important to obtain positive data to fully understand the impact of the LALIA along the piedmont of the Hindu Kush. I hope that, with new paleoclimatic data from Swat, the LALIA working hypothesis can open new perspectives on the impact of climate

86 As related by a thirteenth-century Tibetan tradition; see further Tucci 1940; Olivieri 2017b. In various loci of the Tibetan tradition, it is recorded that Padmasambhava, the great *sadhu* known as Guru Rimpoche, born in Swat and raised by Indhrabhuti, was an expert in irrigation techniques (both physical and metaphysical).
87 Olivieri 2010, 360–361.
88 Tucci 1977, 67–68.
89 Verardi 2011, 172.
90 Büntgen et al. 2016; see also Whittow 2019, 361–363.
91 From the abstract of Peregrine 2020.

change on the ancient economy of the Himalayan double-crop pocket zones.[92] For example, perhaps this phenomenon can help to explain the rapid growth of mountain princely states presiding over agricultural economies that were already adapted to low temperatures, such as the kingdoms of Bamiyan and the Palola Shahi at Bolor-Chilas.

However, when Xuanzang visited Swat, a new element had emerged in Swat's cultural environment: the *deva*, or Brahmanical temples. Indeed, as Tucci spoke of possible "social unrest," and Verardi of "violence," there was certainly a breakdown of the social status quo. But that breakdown may be related to the crumbling prestige of Buddhist elites following sudden climatic cooling, and the concomitant collapse of agricultural production.

Ultimately, this agricultural and climatic crisis was symbolically lethal for Buddhist elites. The climate drama—alongside its impact on the material life of the population—most likely had a metaphysical impact on the perceived capacity of Buddhist elites to deal with elemental forces (such as the powerful *nāgas* who first opposed Buddhism in the valley). Xuanzang describes a doctrinal shift in the attitude of Buddhist monks towards magic and exorcisms. Could this reflect their plummeting metaphysical reputation? Let us focus on just one single episode of the long anti-Buddhist process, which occurred in a post-Kushan chronological moment of the history of Kashmir. Specifically, in the Rājatarangiṇī (I 181), it is conveyed that the Brahmans, not Buddhists, were able to please the *nāgas* who were responsible for heavy snowfalls that were causing destruction.

In a situation of climatic distress and the collapse of agricultural production, it is possible that the Buddhist legitimacy (i.e., the Apalāla's covenant episode) might have been shaken, possibly creating the conditions for a radical power shift. Although others have explored potential conflict between the Buddhist elite and landed gentry with respect to the possession and management of agrarian resources in northern India,[93] in my view it is premature to introduce a parallel situation in the case of Swat.

In any case, archaeology attests to the construction of *deva* temples within such a context of social and economic flux, including the example on the acropolis of Barikot. This temple was built in the early Turki Shahi period (end of the seventh century CE; Macrophase 8a at Barikot), directly on top of the demolished structures of a magnificent Buddhist sacred area (Fig. 9). [94]

92 Despite the significant amount of data, the LASER CHIP project failed to capture an environmental archive covering the occurrence of the most recent interphase (between 500 CE and 700 CE). The study is ongoing with new sampling, the analyses of which will be released during 2025–2026.

93 On this, see Bronkhorst 2007, 251–252; Verardi 2011.

94 Here, excavations are in progress. For now, see Callieri, Colliva, and Nasir 1999–2000; Callieri et al. 2000. See also Olivieri 2022c; 2022d.

Fig. 9 The *deva* temple on the acropolis of Barikot constructed directly over a demolished Buddhist sacred area.

Conclusions

With these concluding remarks, I return to the question of the importance of the phenomenon of archaeological negative interfaces represented by absences of activity (interphases), as highlighted in the Introduction. When this contribution was conceived for the 2019 Freiburg conference, we were moving into the realm of hypothetical answers to a framework of questions that field archaeology gave as well established, and that concerned the agricultural and settlement climatic exceptionalism of the Swat Valley economic space and its oscillations between its phases of occupation and interphases of abandonment.

Today, we are one step closer still to providing well-founded answers to the following set of questions specifically:

1) the issue of double-crop agricultural economy and its relevance in the system of exchanges between productive and consuming areas, i.e., between center and periphery in polycentric or highly centralized systems of power;

2) the importance of agricultural intensification as a driving element for urban expansion in historical phases;

3) the diagnostic relevance of archaeological interfaces for the interpretation of historical phases in areas characterized by favorable conditions and demographic and anthropic–cultural continuity;

4) the importance of paleoclimatic studies for understanding interphase phenomena and, thus, the possibility of experimentally tracing, through recognizable patterns, human response or resilience to global phenomena of natural origin. As paraphrased in the title of a very important recent collection of essays, we can test the possibility of tracking historical phenomena through the form of natural experiments.[95]

Most of these answers are based on the initial results of the LASER CHIP project (Late Antique Swat Ecology and Resilience: Climate and Habitat in Interfacial Periods) launched by the Ca' Foscari University of Venice in 2021 in collaboration with the Italian Archaeological Mission, which is beginning to yield its results.[96] The new project carried out a series of three core drillings in 2021 at the Barikot site on a sequence that is chronometrically stable between the present and 20,000 BP, thus covering the entire sedimentological and anthropogenic sequence of the post-glacial phase site and spanning the entire Late Pleistocene to Holocene and Anthropocene of the Swat Valley. Analysis of inorganic elements, organic biomarkers, and stable isotopes of soil/sediment deposits, together with structural analysis of archaeological material, is producing a new model for reconstructing economic processes through the entire ancient age. At present, it is too early to give the details of these results; what has been anticipated in this contribution, however, is that the analyses have revealed dramatic climatic fluctuations, with transitions from cold-arid to warm-humid phases, then from periods of climatic and environmental stress to truly long phases of climatic optimum. Just as the latter coincide with phases of urbanization and agricultural intensification (which also entail the inclusion of economically and culturally revolutionary new crops, such as cotton), the former periods of stress significantly seem to coincide—at least in one case—with such interphases, or periods of anthropogenic stasis, which this study began by highlighting.

95 Diamond and Robinson 2010.

96 Which will soon be available in a publication that I am preparing with Dario Battistel, Robert Spengler, Rita Dal Martello, Claudio Faccenna, Giuditta Fellin and their team, Stefan Baums, Omar Coloru, Elisa Iori, and Michele Minardi—a paleoclimatologist, two paleobotanists, a team of geologists, a philologist, a historian, and two archaeologists—with a focus on the early urbanization phases of Swat.

Figure Credits

Chart 1	By Luca M. Olivieri
Fig. 1a+b	Google Earth (elaborated by the Luca M. Olivieri); inset: University of Vienna Department of Geography/ISMEO (elaborated by Luca M. Olivieri)
Fig. 2	Photo by Carla Biagioli/ISMEO
Fig. 3	Photo Robert Spengler/Max Planck, Jena
Fig. 4	Drawings by Francesco Martore/ISMEO and Massimo Vidale/ISMEO
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Fig. 6	Photo by Luca M. Olivieri/ISMEO and Roberto Micheli/ISMEO
Fig. 7a+b	Drawings by Francesco Martore/ISMEO
Fig. 8	Elaborated by Luca M. Olivieri/ISMEO
Fig. 9	Photo by Luca M. Olivieri/ISMEO

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Economic and Military Aspects of Roman Provincialization
The Case of Roman Arabia

Michael A. Speidel

Introduction

According to Roman political ideology, all regions in which Roman political and military directions (*imperia*) were (or were expected to be) followed belonged to the Roman Empire (*Imperium Romanum*). From a Roman perspective, therefore, the Empire included not only the provinces but also the territories of Rome's allied kings and dynasts beyond the provincial boundaries.[1] In these peripheral regions, Rome had various interests, among which business and trade played a major role. The allied kingdom of Nabataea on the borders of the provinces of Egypt, Syria, and Judaea is a point in case. During the second century BCE, the Nabataean kings began to control the northern sections of desert routes leading to the Persian/Arab Gulf as well as to the southern regions of the Arab Peninsula, from which frankincense was imported to the Mediterranean world. In his account of the incense trade, Pliny refers to the various places and dominions through which caravans had to pass on their way from Southern Arabia to Gaza and the Roman Empire and, thereby, gives a vivid impression of how the possession or control of the oases along the routes connecting the north and the south of the peninsula was a lucrative source of income.[2] Ancient South Arabian inscriptions record violent conflicts over the control of these oases from as early as the eighth and seventh centuries BCE. The Nabataean kingdom thus drew a great deal of its wealth from its control of the northern oases in the Hejas, the Wadi

1 Tac. *Ann.* 1,11,4. Suet., Aug. 101,4. Dio 56,33,2. See also Cic., Leg. 3,41 and cf. Speidel 2009, 54–58. The present text is a revised and updated version of Speidel 2021. I sincerely thank Eli Weaverdyke, Freiburg i. Brsg., for his help with adapting this contribution to the scope of the present volume.

2 Plin. *NH* 12.32.63–65.

Speidel, Michael A.: Economic and Military Aspects of Roman Provincialization: The Case of Roman Arabia, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 81–99. DOI: https://doi.org/10.17885/heiup.1582.c22722

Sirhan, and elsewhere.[3] Strabo, in the last decades of the first century BCE, described the Nabataeans (and the Sabaeans in South Arabia) as subjects of the Romans and was full of praise for Nabataea's excellent laws and public administration, which allowed many Romans to reside there and trade in peaceful conditions.[4] We must, therefore, ask what exactly changed, in economic terms, when Rome took over the kingdom in 106 CE. Recent archaeological and epigraphic finds from the Arabian Peninsula shed important new light on many economic cultural and social changes that affected the Nabataean frontier zones as economic spaces when the Roman frontier province was established.[5]

Unfortunately, our written sources contain hardly any information regarding the reasons for the Roman invasion and occupation of Nabataea, nor about the circumstances and details of the military operations.[6] Perhaps local unrest following the death of Nabataea's last king, Rabbel II, early in 105, triggered the Roman intervention. In any event, Roman troops permanently occupied the former kingdom in 106; the royal Nabataean army was restructured and incorporated into the Roman military system; royal rule was replaced by a Roman provincial government; the capital was eventually moved from Petra to Bostra and renamed *Nova Traiana Bostra;* and state taxes and military service were now owed only to Rome.[7] These were, of course, profound changes, both for those living in the former kingdom and for the Roman state. Curiously, however, no grand celebration followed this achievement in Rome. Roman imperial coinage publicly commemorated the new acquisition only in 111 CE, i.e., four to five years after the occupation—*Arabia adquisita*.[8]

The question has, therefore, often been asked whether Marcus Ulpius Traianus, the emperor who ordered the invasion, pursued far-reaching geopolitical plans. To

3 For an excellent overview of the topic and the early epigraphic evidence, see Nebes 2014. For the Nabataeans policing the long-distance trade routes of Arabia in the first century CE, see also PME 20 and the evidence discussed below.

4 Strabo 16,4,21. For Roman hegemony of South Arabia established by Augustus, see Speidel 2015b and 2016a, 157–165; and now also Bowersock 2019, 231–233; Robin 2019. See also Macdonald 1994.

5 Speidel 2021.

6 All that survives is Dio 68.14.5 and Amm. 14.8.13. Cf., e.g., Bowersock 1983, 76 ff; Speidel 2009, 150 ff; Strobel 2019, 325 ff.

7 For a full account, see Bowersock 1983, 76–89 and most recently, Strobel 2019, 325–349, esp. 343, with recent literature. Strobel (2019, 328), however, is mistaken in claiming that *ala I Ulpia Dromedariorum* originally consisted of royal Nabataean camel riders (cf. below at n. 49). For Pompeius Falco (cos. 108), the governor of Judaea and commander of *legio X Fretensis* (CIL III 12117 = ILS 1036, cf. now also AE 2003, 1706), often referred to in this context; see Eck 2017, 97–99. On the impact of Trajan's takeover of the Nabataean kingdom on the Red Sea basin, see also Nappo 2018, 73 ff.

8 RIC Trajan 94–95; 244–245; 465–8; 610–615. Also cf. RIC Trajan 142–143. On Trajan's coinage in general, see Woytek 2010. See also below n. 25.

be sure, Trajan was remembered not only as Rome's *optimus princeps* but also as the Empire's most warlike leader, the *bellicosissimus princeps*.[9] No Roman emperor before Trajan (apart from Augustus) and no other after him added as much new territory to the Empire, even if most of it was soon lost or given up after his death. In the present context, the question we need to ask is whether the provincialization of the Nabataean kingdom in 106 was in any way directly connected to Trajan's infrastructure and military projects in the wider region, and therefore, whether they belonged to a greater geostrategic project or whether a greater emphasis should be placed on the potential economic motivations of this activity. As we will see, Trajan's takeover of the Nabataean kingdom (which was a loyal ally until 105) carries the hallmarks of an unforeseen and urgent reaction to local events rather than those of a premeditated plan. But this does not, *a priori*, invalidate the hypothesis of the previous existence of a geopolitical plan for the region that was immediately implemented as soon as a suitable occasion (i.e., the death of the last Nabataean king) arose.

A New Roman Naval Force and Its Infrastructure

One of the consequences of Trajan's takeover of the Nabataean kingdom in 105/6 was the extension of Rome's naval capabilities in the Red Sea. To be sure, there is evidence for Roman war ships in the northern parts of the Red Sea from as early as, it seems, the reign of Augusts;[10] yet Trajan appears to have renewed and enlarged this fleet and extended its range to the very south of the Red Sea basin. Thus, Eutropius and Festus relate that Trajan established a war fleet in the Red Sea (*in mari rubro classem instituit*) so that he could "lay waste to the borders of India," as Eutropius explains. Surely, "India" in this context was a reference to the southern parts of the Red Sea or the Gulf of Aden.[11] Jordanes adds that a statue of Trajan was set up *in mari Rubro*.[12] Documentary confirmation is provided by a Latin inscription from the first half of the second century that was found on the main island of the Farasān archipelago.[13] Only the lower right-hand corner survives. This fragment (often overlooked in recent accounts) dates, perhaps, from the twenties of the second century CE. It is set in a "tabula ansata" and attests building activities on the island. It reads as follows:[14]

9 Epit. 20.5. Cf. Dio 68.7.5. Speidel 2009, 121–165.
10 Speidel 2015b, 249 ff. for the evidence and a full discussion.
11 Eutrop., *Brev*. 8.3.2. Cf. also Festus 14 f. India: Mayerson 1993.
12 Jord., *Rom.* 268. Discussed in Speidel 2015b, 251.
13 AE 2005, 1640 = AE 2007, 1659. Cf. Villeneuve 2007, 23–25; Speidel 2007 = 2009, 639–640; Speidel 2015a, 89–90.
14 For the date and a partial restoration, see Speidel 2007 = 2009, 640. Cf. also Nappo 2018, 81.

- - -]

[- - -]VI FERR

[- - -]PR PR

Because of the highly formulaic nature of Latin building inscriptions, the letters PR PR in the last line of this Latin building inscription are doubtless to be understood as the remains of *pr(o) pr(aetore)* from the titulature of a Roman senatorial governor.[15] As is well known, the only Roman province on the Red Sea that was governed by a *legatus Augusti pro praetore provinciae* was *provincia Arabia*. Furthermore, the use of Latin in this part of the world, in which Greek was the common *lingua franca*, suggests a military context and therefore leaves no doubt that the letters -]VI FERR referred to *legio VI Ferrata*.[16] The reference to this legion provides a chronological frame for the date of this inscription, for *legio VI Ferrata* belonged to the garrison of the province of Arabia only for a short period of time after 114 and before 132/5(?).[17] The inscription thus attests the construction of a building, ordered by the governor of the province of Arabia, that was carried out by a detachment of Roman legionary soldiers. The soldiers from Arabia were later (in 144 at the latest) replaced by a detachment of *legio II Traiana* and auxiliaries from Egypt who were under the local command of a *praef(ectus) Ferresani portus (?) et Pont(i) Hercul(is)*.[18]

The legionary detachment of *legio VI Ferrata* from the new province of Arabia may, therefore, have completed construction works on the Farasan islands in the very last years of Trajan's reign or very early in Hadrian's reign. The military stronghold on the island could, therefore, have been established even a few years earlier.[19] The construction in stone betrays Rome's will to establish a permanent (at least in the

15 For the argument in full, see Speidel 2007 = 2009, 639–640. Cf. also Villeneuve 2007, 24, suggesting a number of other, yet unlikely, solutions. The concerns regarding this interpretation of the inscription expressed, e.g., by Villeneuve (2007, 24), Cobb (2018, 119), and Nappo (2018, 80 f.) are unnecessary.

16 Cf. Villeneuve 2007, 24.

17 Sartre 2005, 136–137. Speidel 2007 = 2009, 640; Nappo 2018, 81. For *legio VI Ferrata* in Judea, see Eck 2022.

18 AE 2004, 1643 = AE 2005, 1639 = AE 2007, 1659 (Farasan). Speidel 2007 = 2009, 635 ff.

19 Small finds of Nabataean pottery and coins on Farasān may, perhaps, hint at the existence of a Nabataean post prior to the establishment of Rome's military presence on Farasan, which, if true, also would have been a direct consequence of the Roman takeover of Nabataea: Villeneuve 2007, 20 n. 19; Speidel 2007 = 2009, 647; McLaughlin 2014, 132. At present, of course, this must evidently remain hypothetical (Bukharin 2011, 8–9; Nappo 2018, 82), but see Speidel 2015, 247–249 and Robin 2019 for evidence for and discussion of increased Nabataean influence in southern Arabia in the aftermath of the campaign of Aelius Gallus in 26/25 BCE.

mid-term) military presence in the southern Red Sea. Evidently, it was the purpose of the legionary detachment to impose Rome's will by the threat or the use of military means, be this by fighting "pirates" or by locally enforcing fiscal measures or a favored political order (a task for which legionary soldiers were particularly suited).[20] At any rate, the soldiers of *legio VI Ferrata* on Farasan must have had ships at their disposal, as they would otherwise hardly have been capable of fulfilling any task beyond the coastlines of their small island. Moreover, the establishment and upkeep of this post and its military garrison well over 1,200 km south of Roman Arabia's southernmost harbor at Leuke Kome could hardly have been carried out without further bases on the way or the support or consent of local allied rulers. It is most likely, therefore, that we need to assume the existence of a Rome-friendly network of local powers along the coasts of the Red Sea stretching from the southern borders of Egypt and Arabia to the Bab-el Mandab.

The Farasān detachment was perhaps established within the same context as another of Trajan's Red Sea projects, for the emperor is also known to have ordered, in 112 at the latest, major construction works on the canal that connected the Red Sea and the Nile in Egypt, which included a new harbor near Babylon at the tip of the Delta. This construction provided seasonal access to the Red Sea from the Pelusiac branch of the Nile.[21] Archaeological investigations of the remains of the new Trajanic harbor have produced remarkable results.[22] For the large size of the stone blocks that were used, the massive towers and the width of the entrance of over forty meters betray the confidence in the sense of this project that the planners and builders of Trajan's canal apparently had. Diocletian later rebuilt and fortified Trajan's harbor and, therefore, evidently shared his predecessor's confidence in its usefulness. Moreover, the remaining structures show surprising similarities in the layout of the Trajanic harbor with that of Diocletian, which suggests that Trajan's construction may have been as much a military installation as the fortress that Diocletian built to replace it.[23] If true, Trajan may have intended the canal, in the first instance, to be used by military ships.

20 Cf. Speidel 2016a, 160 ff. With Farasān laying over 1,200 km beyond the provincial territories of *provincia Arabia*, one wonders which role the archipelago could have played in the "defence" of the province or in Trajan's "reorganization of the eastern provinces" (cf. Nappo 2018, 80–82).

21 See esp. Oertel 1964; De Romanis 2002; De Romanis 2020, 36 ff; Aubert 2004; Adams 2007, 34 f.; Adams 2015; Jördens 2009, 417 ff.; Cooper 2009; Sheehan 2010, 35 ff.

22 Sheehan 2010.

23 Sheehan 2010, Fig. 26. Cf. also Not. Dign., or. 28.15: *legio tertiadecima gemina*: *Babilona*. Most recently, Strobel (2019, 330) argued again for economic considerations having been the true reasons for Trajan's investment into the Red Sea canal. De Romanis (2020, 36; 39) is undecided "whether the construction under Trajan of a new canal joining the Nile delta and the Red Sea was a consequence of, or a driving force for, the transformation of Rome's trade with India." For the enormous impact which the canal and the *via nova Traiana* eventually had on the trade through the Red Sea, particularly in Late Antiquity, see De Romanis 2020, 36 ff.

The canal would thus have afforded the passage of such vessels to reinforce the Red Sea fleet and, ultimately, to supply the post on Farasān as well as other naval bases.

New Roman Roads and Harbors: Military or Economic Installations?

Several scholars have concluded that the chronological proximity of Trajan's conquests and construction projects in the East betray a single overarching strategic plan pursuing economic or military objectives. Some believed this plan to concern the Red Sea basin; others even recognized military intentions linked directly to Trajan's Parthian war of 114–117 CE.[24] However, military considerations with regard to the Parthian war seem rather unlikely to have been at the root of Trajan's interventions in the region, for an attack on Parthia via the sea route or the former Nabataean kingdom, if it was ever intended, would surely have been launched at the very beginning of the campaign in 114. Yet it never was. Nor is there any evidence for a related dislocation of troops or for making military use of any of the new Roman constructions or institutions in the Red Sea basin or on the Arabian Peninsula during this war.

But do economic objectives impose themselves as compelling arguments for Trajan's activities in the wider region? To find answers, we need to take a closer look at the Roman infrastructural development after the Roman takeover of the Nabataean kingdom in 106. Thus, in 111 CE, Roman milestones were set up along a new formidable and plastered road, the *via nova Traiana*.[25] Their Latin inscriptions celebrated the completion of a major traffic axis that ran right through the urban heartland of Roman Arabia, connecting it first to the network of roads that linked up Roman Syria's cities, harbors, and military fortresses and then, ultimately, to the other provinces, Italy, and Rome. It is generally held that the *via nova Traiana* replaced an existing Nabataean route that is usually referred to as the "king's highway" and that this Roman highway was designed to serve as a major trade route, but also for military and administrative purposes. However, recent research has cast some doubt on such views. It has been

24 Most recently, Nappo (2018, 83), Strobel (2019, 325–331), and Stoll (2022, 61–62) suggested economic motivations. Nappo (2015, 69) speaks of a "master plan" for the Red Sea, "motivated by the potential for economic gain." McLaughlin (2014, 131), Aubert (2015, 35), and Cobb (2018, 118) contemplated military objectives connected to the Parthian War. De Romanis (2020, 36) remains undecided.

25 Many specimens survive; cf. e.g., CIL III 14149,23 = ILS 5834: *Imp(erator) Caesar / divi Nervae f(ilius) Nerva / Traianus Aug(ustus) Germ(anicus) / Dacicus pont(ifex) max(imus) / trib(unicia) pot(estate) XV imp(erator) VI co(n)s(ul) V / p(ater) p(atriae) / redacta in formam / provinciae Arabia viam / novam a finibus Syriae / usque ad mare rubrum / aperuit et stravit per / C(aium) Claudium Severum / leg(atum) Au[g(usti) pr(o) pr(aetore)]*. Cf., e.g., Bowersock 1983, 83; Isaac 1992, 119–121; Isaac 1998, 135 ff.; Graf 1995; Young 2001, 108 ff.; Kennedy 2004, 93 ff.; Sartre 2005, 139 ff.; Abudanah 2016.

pointed out that the steep gradients of the *via nova Traiana* through the great wadis, particularly through the Wadi al-Mujib, are unsuitable for heavily loaded camels and, thus, for caravan traffic altogether.[26] It is probably significant, therefore, that no remains of a constructed Nabataean predecessor road have yet been discovered along the stretch from Petra to Bostra where the *via nova Traiana* traversed the wadis and that no written source confirms the existence of this stretch of the route in the Nabataean period. Remarkably, however, a known Nabataean caravan route from Petra to Bostra passed much further to the East, thus avoiding the deep canyons.[27] If caravans indeed could not pass through the great wadis, the *via nova Traiana* was therefore hardly, in the first instance, constructed to serve as Rome's great trade route into Arabia. The true reasons for the construction of this major Roman road are spelled out (at least in part) on the famous milestones that were set up along its sides. This text describes, in Latin, the new extent of Roman direct rule from Syria to the Red Sea (*a finibus Syriae usque ad mare rubrum*: ILS 5834), echoing earlier such claims by Pompey.[28] Clearly, reaching the Red Sea was understood to be a powerful political statement. Trajan's new road, therefore, was essentially an imperial project that was intended to celebrate Rome's technical abilities and to demonstrate the extension of Roman direct rule *ad mare Rubrum*. It was to provide full access to the urban core of the new province and to integrate it into the empire's provincial territory.

Another observation appears to support this argument: what is known of the development of the harbor of Aila on the gulf of Akaba does not fit the theory of it having been a major trade hub at the end of the *via nova Traiana* in the first three centuries CE. Finds indicating that this harbor had commercial interactions of significance with the southern Red Sea or areas in the Indian Ocean before late antiquity appear to be absent from the archaeological record.[29] Nor do written sources suggest that Aila was of any significance as a port of trade during that period. Ptolemy calls it a village (κώμη), and Strabo and Pliny have nothing to say about a harbor but refer to Aila's overland connections through the surrounding deserts.[30] Josephus records that the Ptolemies established a port named Berenike in the vicinity. This port is now usually considered to be identical with Aila, but there is nothing to suggest that the

26 Borstad 2008. Cf. Speidel 2019, 57.

27 Parker 2006, 529; Borstad 2008.

28 See also Tacitus' statement precisely from these years: *[…] claustra olim Romani imperii quod nunc Rubrum ad mare patescit.* For a lengthy commentary, cf. Schneider 2015. Pompey: Plin. *NH* 7.26.97 (quoting from an inscription at a temple of Minerva): *Cn. Pompeius Magnus, imperator […] terris a Maeotis ad Rubrum mare subactis, votum merito Minervae*. Diodor 40,4 (translated from a Latin inscription at Pompey's theatre): *[…]* καὶ πάντα τὰ ἔθνη τὰ ἐντὸς τῆς Ποντικῆς καὶ τῆς Ἐρυθρᾶς θαλάσσης κατοικοῦντα *[…]*.

29 Parker 1996. Most recently: Sidebotham 2017, 129–132.

30 Ptol. 5.16.1; Strabo 16.2.30 and 16.4.4; Plin. 5.12.65.

foundation of Berenike led to a lasting upsurge of maritime trade and prosperity that would have justified the construction of a road on such a grand scale at the beginning of the second century CE.[31]

In fact, during the first three centuries CE, the main maritime trade route on the Arabian coast appears to have ended at the Red Sea port of Leuke Kome, much further to the South. Strabo reports that large caravans traveled via Hegra to Petra from this southernmost Nabataean harbor, which is possibly located at modern al-Wajh in Saudi Arabia.[32] A passage in the *Periplus Maris Erythraei* from the mid-first century CE concerning Leuke Kome claims that because of its port "and as a security measure, there is dispatched there also [*sc*. to Leuke Kome] the Receiver (παραλήπτης) of the Quarter Tax (τετάρτη) on incoming merchandise as well as a centurion (ἑκατοντάρχης) with a detachment of soldiers."[33]

This statement has caused a great deal of confusion and triggered an ongoing debate on whether the tax official, the officer, and the soldiers concerned, or even the harbor of Leuke Kome were Nabataean or Roman at that time. According to the perhaps most influential view, it was simply inconceivable that Roman authorities could have operated in a Nabataean harbor.[34] Yet this ignores that similar settings are indeed on record elsewhere.[35] Also, it seems very unlikely that both Nabataeans (at Leuke Kome) and Romans[36] should have each raised twenty-five percent customs duties on the same imports, thus adding a total of 56.25 percent to their price on Roman markets.[37] Such a practice would surely have brought about the immediate end of imports through the Nabataean kingdom. Moreover, a reader of the *Periplus* from the Greek-speaking provinces of the Empire is no doubt likely to have thought that the verb ἀποστέλλεται, "dispatched" (or "sent over"), was "more fitting for functionaries

31 Jos., Ant. 8.6.4 (160). Cf. Cohen 2006, 314 f.

32 Strabo 16.4.23–24. For el-Wajh as the likely location of Leuke Kome, see Nappo 2010; Nappo 2018, 35. For a different view (Aynuna), see Gawlikowski 2018.

33 PME 19. Διὸ καὶ παραφυλακῆς χάριν καὶ εἰς αὐτὴν (sc. Λευκὴ κώμη) παραλήπτης τῆς τετάρτης τῶν εἰσφερομένων φορτίων καὶ ἑκατοντάρχης μετὰ στρατεύματος ἀποστέλλεται. For the 25 percent import tax (tetartē / *maris rubri vectigal*), see, e.g., Jördens 2009, 355–370; Ast and Bagnall 2015; De Romanis 2020, 277 ff.

34 For the different positions and further bibliography, see, for instance, Bowersock 1983, 71; Casson 1989, 145; Young 1997; Cuvigny, O.Krok., 1435 with n. 22; Jördens 2009, 355–367, esp. 364–367; Ast and Bagnall 2015, 179–180; Nehmé 2018, 54; Nappo 2018, 98–107.

35 For Roman soldiers collecting the *capitulum lenoceni* tax in Chersonesus Taurica, see CIL III 13750 = IGRR I 860 = IOSPE² I 404. For allied kings paying Rome tribute, see Lucian, *Alex*. 57. Plin. *Ep*. 10.63 f. and 67; Jos. *BJ* 1.29.3. *AJ* 17.54 f. On the subject, see esp. Haensch 2009, 220 ff. On *regna* listed as assets in Augustus' *breviarium totius imperii*, see Speidel 2009, 55, 70 f. and 568 n. 33.

36 E.g., at Gaza: Plin. *NH* 12.32.64–65.

37 Thus, convincingly, Young 1997.

sent from outside than for those installed within their own state."[38] Above all, however, the presumably Greek-speaking reader from the Roman provincial world surely first associated the unspecified term ἑκατοντάρχης (the standard Greek translation for Latin *centurio*) with a Roman officer, not with a Nabataean one, as has been proposed because the Nabataeans occasionally used a transliteration of *centurio* (e.g., qnt.ryn') to denote a specific rank in their army.[39] If a reference to Nabataean qnt.ryn' (*vel. sim.*) had indeed been intended, one might expect the author of the *Periplus* to have used the Greek transliteration κεντύριων.[40] In any event, the Greek term ἑκατοντάρχης in no way recalls a Nabataean institution. Hence, the evidence very strongly points to a Roman customs control station with a small guard of Roman soldiers at Leuke Kome long before the Nabataean kingdom was turned into a Roman province by Trajan.

From a Roman point of view, there would, of course, have been a need for a Roman import monitoring station at Leuke Kome in order to prevent imported goods from evading the twenty-five percent import tax by unloading there rather than at the Egyptian ports of Myos Hormos or Berenike, where a parallel institution under the responsibility of a παραλήπτης (receiver) was in place—as is borne out by an ostracon from Krokodilô and two recently published inscriptions from the port town of Berenike.[41] It thus appears that the "receivers" in the Red Sea ports were charged with examining unloaded cargos and with establishing their composition and value. They would then send the relevant documentation onwards to stations inland, independently of the transporting caravans, so that the integrity of the cargo could be verified at the end of the desert journey by another set of homonymous officials. Taxes on imported goods from the eastern trade, however, were only paid in Koptos or Alexandria and in Gaza, or in Antioch (for those goods that were imported from or via Southern Mesopotamia).[42]

The continued importance of Arabia (and, of course, Egypt) for the import of Eastern goods even after it was turned into a Roman province is probably also reflected by Cassius Dio's Greek designation of the respective warehouses in the center of Rome, for his Greek name for the *horrea piperataria* is not (as the Latin term) based on the most important or iconic good stored there (i.e., pepper) nor on their origins (India and South Arabia, *viz.* "Saba"), but he describes them as the "warehouses of Egyptian

38 Thus Ast and Bagnall 2015, 180. See also Jördens 2009, 364–367.

39 The term used in the Nabataean army was qnt.ryn', qt.rywn' *vel. sim*. Nehmé 2017, 142; Nehmé 2018, 53.

40 Cf., e.g., SEG 19.783.

41 O. Krok. 1, l.26; Ast and Bagnall 2015 with a full discussion. Cf. Raschke 1978, 664; Young 1997, 267.

42 Gaza: Plin. *NH* 12.3265. Cf. Young 1997. Antioch: Starcky 1949, nos. 29 and 113. For Koptos as the mart for Indian, Arabian, and Ethiopian merchandise, see, e.g., Strabo 17.1.45; Plin. *NH* 5.11.60; Aristid., or. 36 ("Egyptian Discourse"), 115.

and Arab goods," which likely derives from the provinces through which these goods were mainly imported (and taxed).[43]

Before the Roman takeover, the Nabataeans controlled the northern end of the network of trade routes that connected South Arabia and the Persian Gulf with the Mediterranean coast. This included the trade corridor to the Persian Gulf through the Wadi Sirhan in the Arabian desert, which, before the Roman takeover, was guarded (at least at times) by Nabataean soldiers.[44] Two Latin inscriptions clearly attest Roman military control of the Wadi Sirhan since the early third century CE.[45] The assumed lack of second-century archaeological and epigraphic evidence from the Wadi Sirhan has led several scholars to believe that Trajan, in 106, renounced (or simply did not care to take) control of this route from the Nabataeans, despite his decision to establish the provincial capital at Bostra. According to this theory, it was only Septimius Severus who brought this trade route and the oasis town of Dumata (Dûmat al Jandal, Saudi Arabia) at the wadi's southeastern exit under Roman control.

However, recent archaeological and epigraphic findings in this region (al-Jawf and Sakākā) suggest a very different reconstruction of Trajan's decision concerning this region; for not only were the remains of a watchtower discovered at Dumata that was in constant use from the first to the fourth century CE, but second-century graffiti in Nabataean script and language from soldiers of Roman army units were also discovered not far from Dumata.[46] It therefore seems very likely that Trajan, as with all other Nabataean strongholds, also immediately occupied the important military checkpoints on this caravan route in 106 (or immediately afterwards). Evidently, to the Romans, too, it mattered who was in control of the oases.[47]

New archaeological and epigraphic finds from the region of Hegra (Medâ'in Sâlih, Saudi Arabia) suggest that a parallel development took place along the old "incense route." Again, it was held that this major Nabataean settlement was abandoned soon

43 *Horrea piperataria*: Chron. a. 354, p. 16f. 64 (*Chron min*. I 146); AE 1994, 297; Dio 73,24,1: τὰς ἀποθήκας τῶν τε Αἰγυπτίων καὶ τῶν Ἀραβίων φορτίων.

44 Trade corridor: Plin. *NH* 6.32.146; Ptol. 5.19.7. Nabataean soldiers (in 44 CE): Savignac and Starcky 1957; Bowersock 1983; 154–159. For further literature on the Wadi Sirhan (and on the inscription), cf., e.g., Speidel 1992, 369–370; Isaac 1992, 126; Christol and Lenoir 2001, 164–165; Young 2001, 83, 85, 99–100, 104.

45 AE 2001, 1979 (Dumata): *Pro salute / domm(inorum) nn(ostrorum) Augg(ustorum) / I(ovi) O(ptimo) M(aximo) Hammoni et San/cto Sulmo / Fl(avius) Dionysi/us |(centurio) leg(ionis) III Cyr(enaicae) / v(otum) s(olvit)*. – AE 1987, 964 = AE 1996, 1623 (Azraq): *-] PE[---]L[--]V[--]LSSSV[-] / legg(ionum) XI Kl(audiae) et VII Kl(audiae) / et I Ital(icae) et IIII Fl(aviae) et / I Ill(yricorum) praetensione / concata mil(itibus) suis ex / leg(ione) III Kur(enaica)(!) a Bostra / Dasianis m(ilia) p(assuum) LXVI et / a Basienisa m(ilia) p(assuum) XXX / et a Bamata Dumata / m(ilia) p(assuum) CCVIII.*

46 Graffiti: Nehmé 2017, 148–150. Watchtower (L2018): Charloux 2016, 206–228. Roman finds from Dumata: Charloux, Cotti, and Thomas 2014, 200.

47 For a Roman statement to this effect, see Plin. *NH* 12.32.64–65.

after Rome took direct control of the kingdom;[48] yet Latin, Greek, and Nabataean inscriptions and graffiti from in and around Hegra from the second and early third (?) centuries attest the regular (or at least repeated) local presence of soldiers and officers of *legio III Cyrenaica* as well as horsemen of *ala I Ulpia dromadariorum Palmyrenorum milliaria* and *ala veterana Gaetulorum* in Hegra and its surroundings (Jabal Athlab and route to Al-ʿUlâ).[49] Two inscriptions recently discovered in Medâʾin Sâlih name legionary *stationarii* (evidently of *legio III Cyrenaica*), soldiers dispatched to an outpost (*statio*), as known also from Egypt's eastern desert.[50] Another inscription as well as graffiti also mention *eq(uites) dro(medarii)* (no doubt of *ala I Ulpia dromedariorum Palmyrenorum*), all soldiers of the kind that were also employed along the routes through the Egyptian eastern desert.[51] Even a second-century Roman military camp was recently discovered at Hegra.[52] The stationing of Roman soldiers in the Hejaz desert around 900 km south of the provincial capital Bostra at this location on the old incense route can hardly have served any other purpose than the control and protection of the caravan trade between the Mediterranean and southern Arabia. *Ala I Ulpia dromedariorum Palmyrenorum milliaria* is of particular interest for the history of the new province (and, of course, for Palmyra's history), for according to its name, the unit was set up by Trajan from 1,000 Palmyrenian camel riders. As the *ala* is attested in Arabia by military diplomas of the years 126, 142, and 145 (and nowhere else in the first half of the second century CE), the regiment presumably was part of Arabia's initial Roman garrison.[53] If this is true, it betrays the comprehensive efforts to integrate the new province into the structures and fabrics of the Empire, and the importance Trajan and the imperial authorities attached from the very beginning to

48 Cf., e.g., Graf 1988; Shahid 1989, 476; Hackl, Jenni, and Schneider 2003, 55–56.

49 Inscriptions and Graffiti: Jaussen and Savignac 1914, 644–649; Seyrig 1940, 163; Speidel 1984, 245–248; Sartre 1982, 30–33; Graf 1988, 192–196; Young 2001, 109 f.; Sipilä 2004, 320; Al-Tahli and Al-Daire 2005 (= AE 2004, 1620); Speidel 2009, 633 ff.; Villeneuve 2015, 23 ff., 37 ff.; Nehmé 2018, 52–54. Fiema et al. 2020. For the date of the graffiti, cf. the name *Ulpius Magnus* of one of the horsemen of *ala dromadariorum* mentioned in the graffiti along the route to Al-ʿUlâ. A*la I Ulpia dromadariorum Palmyrenorum milliaria* is attested as part of the Roman army in *provincia Arabia* by military diplomas of the years 126, 142, and 145: AE 2004, 1925; AE 2016, 2014; Eck and Pangerl 2016. In the years 153 and 157, the unit was stationed in Syria: Weiss 2006, esp. 283.

50 Fiema et al. 2020, n° 1 (180-183), and n° 8 (190-191). Cf. already Villeneuve 2015, 34 ff. and Speidel 2019, 59. In two other cases (Fiema et al. n° 2 and n° 6), the reading of the single letter S and the restoration of the term *s(tationarius)* is doubtful. Eastern desert: see, e.g., O.Claud. I 68 (Trajanic, checking travel permits), Sidebotham 2011, 166.

51 Fiema et al. 2020, n° 12 (193). Graffiti: cf. above n. 49. For a full discussion of this evidence, see Speidel 2019, 59-61. Cf. also Stoll 2022. For *dromedarii* in the Roman army in general, cf., e.g., Dąbrowa 1991; Young 2001, 147 f.; 155 f.; Gatier 2017.

52 Fiema and Villeneuve 2018.

53 Thus also Gatier 2017, 284. Military diplomas: see above, n. 49.

the safety of the desert caravan routes; for Palmyrenian camel riders were, of course, experts in providing security on routes leading through deserts.

Finally, an altar from between 213/4 and 217 that was set up in Hegra by one Aurelius Gloriosus, a *libertus Augusti* and *adiutor tabulariorum,* attests this man's (temporary) local presence.[54] As an imperial freedman and an aid of bookkeepers, Gloriosus evidently belonged to the staff of the financial *procurator* of the province of Arabia and was attached to the procuratorial archives.[55] The dedication of his altar not only to the immortal gods and goddesses and the health of Caracalla and of his mother Julia Domna but specifically also to *Mars conservator,* to the *genius hospiti(i),* and to *Fortuna Redux* suggests that Gloriosus had, on the one hand, been on an important official mission to the Roman troops on the empire's remote southern frontier at Hegra that, at least in part, concerned aspects of the long-distance trade with the South and that, on the other hand, he hoped for divine protection on his journey from and to Gerasa, where the *procurator* of Arabia resided.[56] What is known of the activities and tasks of other *tabularii* and their *adiutores* supports the notion that Gloriosus' mission was most likely connected to the documentation of logistical and/or fiscal matters at this southernmost outpost of *legio III Cyrenaica* in the province of Arabia.[57]

Let us now return to the question of to what extent economic objectives may have motivated Trajan and his advisors to take over and provincialize the Nabataean kingdom. As we have seen, the Roman fiscal infrastructure at the Nabataean harbor of Leuke Kome ensured that the lucrative maritime trade with Southern Arabia, East Africa, and India was already fully integrated into the Roman economy before Trajan's takeover of the kingdom. Moreover, Rome benefited from the successful economic, political, and military activities of her Nabataean allies with regard to long-distance trade. Therefore, it remains questionable whether replacing the former Nabataean services and installations along the great overland and maritime trade routes by setting up Roman ones in their stead in 106 would, by itself, have appealed to the Roman emperor as a sensible and profitable plan.[58] Nor is there evidence to suggest that the

54 Fiema et al. 2020, n° 15 (195-197).

55 Thus correctly Stoll 2022, 83–87 (yet *pace* Stoll 2022, 86, Gloriosus cannot have been a true member of the *tabularium legionis*, as being a freedman, he evidently had no right to serve in the army. Nor is there anything to connect Gloriosus' presence at Hegra with Caracalla's Parthian War, *pace* Stoll 2022, 86).

56 For *hospitium* and long-distance trade, see Dig. 49,15,5,2 (Pomponius) with Speidel 2016a. Cf. Stoll 2022, 87 and n. 107 with the observation that dedications to similar *genii* (*commercii*, *negotiantium*) have also been found at several other Roman military bases on the frontiers. Gerasa: Sartre 2005, 134.

57 See, e.g., Rossignol 2014, *passim* and France and Nelis-Clément 2014, *passim*. Cf. also Speidel 2009, 340–342; De Romanis 2020, 317 with n. 92.

58 As, e.g., Strobel (2019, 326) assumes. For Rome economically benefiting from her Nabataean allies, see, e.g., Speidel 2016a, 171–174; Speidel 2016b, 293; Speidel 2019.

great *via nova Traiana* was constructed to serve as a major trade or military route after the Roman provincialization. This is, of course, not to say that the Roman takeover of the Nabataean kingdom and the new Roman infrastructure projects and advanced bases did not impact significantly on various economic aspects and developments regarding the Red Sea basin. Thus, for instance, Rome's increased influence in the southern Red Sea in the early second century appears to be reflected by a new series of coins which the kingdom of Saba, now for the first time, began to mint to the standard of the Roman *denarius*.[59] However, the good relations with the Nabataeans before 105 CE, the apparently unexpected circumstances that led to the Roman takeover, and the volume of the investments necessary to replace Nabataean infrastructure and institutions that came with provincialization do not necessarily suggest that the intention to increase the Roman treasury's income was Trajan's foremost incentive to occupy and provincialize the Nabataean kingdom.

A Policy of Peace and Order as an Economic Consequence of Roman Provincialization

Nevertheless, once provincialization was put into effect, the evidence clearly bears out that Rome's measures and investments into military and other infrastructure naturally included the intention to protect long-distance trade and to increase the flow and volume of trade, thereby maximizing the institutional capabilities of raising fiscal income for the Roman treasury.[60]

Rome's marked interest in the long-distance trade routes through the Red Sea basin are, of course, not at all surprising if we consider the gigantic sums that the imperial treasury collected as taxes on imports from the East via this route; for, according to some recent estimates based on figures transmitted by ancient historiography, geographical works, and documentary evidence, the revenues from the twenty-five percent import tax (*tetartē*) might have amounted to a sum that could have covered most of the regular expenses for the Roman army.[61] Losing control of Nabataea and, subsequently, maybe even of further parts of the Red Sea basin were, therefore, surely not an option Rome would ever have chosen to consider, in 105/6 or at any other

59 Huth 2010, 104 ff.

60 Thus also Wilson 2015, 21. For the importance of such considerations, see, e.g., Strabo 2.5.8 and 4.5.3; 3.4.20. Suet., Nero 18. App., *Praef.* 5. 7. 15. Cf. Speidel 2009, 42 ff. and 71 f. (with further references).

61 McLaughlin 2014, 88–94; Speidel 2015a, 104 f.; Speidel 2016a, 165; Wilson 2015, 23; Cobb 2018, 115 f. Cf., however, Scheidel 2015, 160–161, n. 44.

time in its history. A tenacious internal dispute over the succession to the kingdom's throne hence made Rome's intervention inevitable.

Epictetus, a Phrygian contemporary of these events, offers comments on Trajan's wars. Even though, in his view, all wars (including Trajan's) were the result of ignorance, he conceded that Trajan's wars did achieve some laudable results: "For you see that Caesar appears to furnish us with great peace, that there are no longer enemies, nor battles, nor great associations of robbers, nor of pirates, but we can travel at every hour and sail from east to west." [62] There can be little doubt that Epictetus was quoting official positions, for peace indeed played a prominent role among the ideological messages that Trajan (and other Roman governments) circulated in Rome, Italy, and throughout the Empire. Coinage, of course, was the main (but not the only) medium of dissemination.[63] But peaceful conditions and regional security (on Roman terms) were no doubt precisely what Trajan and his successors aimed for in the Red Sea basin. They were necessary conditions for prosperity and the flow of trade and, therefore, not only were among the most prominent concepts conveyed by imperial propaganda but also led Roman governments to invest great amounts of resources into fortifying, securing, and controlling those routes on the fringes of provincial territory that were particularly threatened by brigandage.[64] A great many forts, watchtowers, and soldiers guarded these routes, even though the existence of the Empire was not threatened by external enemies of any significance in these remote parts.

After Trajan turned the Nabataean kingdom into a province in the year 106, Roman coins were issued (in 111 CE) showing personified Arabia as having accepted Roman peace, for she is holding the olive branch over a camel, the symbol of her country. But the camel was also the symbol of trans-Arabian long-distance trade. Imposing peace in Arabia, therefore, surely also implied peace and security for major stretches of the trans-Arabian (and maritime) trade routes of the Red Sea basin. In this, Trajan may have been obliged by the ideal Augustus had established in the region.[65]

62 Epictetus 3.13.9. See also 1.25.15 (for Trajan being meant, see Birley 1997, 61) and 2.22.22.

63 For *Pax* in Trajan's coinage see, for instance, the *denarii* RIC Trajan 16 (98–99 CE); 102 (103–111 CE); 189 (103–111 CE). See also Woytek 2010.

64 See, for instance, OGIS 701 = IGRR I 1142 = I.Pan 80 = SB V 8908 (+ p. 551) (Antinoopolis, 137 CE): διὰ τόπων ἀσφαλῶν καὶ ὁμαλῶν παρὰ τὴν Ἐρυθρὰν θάλασσαν ὑδρεύμασιν ἀφθόνοις καὶ σταθμοῖς καὶ φρουρίοις διειλημμένην … Bagnall and Sheridan 1994. Malalas 18,15 (433) (*ad a.* 528/29 n. Chr.). The Chronicle of Zuqnin, 54 (*ad a.* 846 = 534/35 n. Chr.). Cf., e.g., Witakowski 1996, 51; Cuvigny 2003; Kennedy 2004, 93 ff.; Sartre 2005, 139 ff.; Sartre 2007, 313–318; Speidel 2015b, 295–296; Speidel 2016a, 161 and 164; Nehmé 2015; Haensch 2016. Cf., e.g., Speidel 2016a, 161–164; Cobb 2018, 92–112; Speidel 2019.

65 Cf. Philo, *Leg. ad Gaium* 146 with Mommsen 1904, 615; Speidel 2015b, esp. 242–249 and 252.

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Part 2
Nodes and Flows

Between Desert and Oasis
Border Markets and their Place in Economic Networks in Southwestern Central Asia

Sören W. Stark

Introduction

Discussions of macro-economic phenomena and trends—in pre-modern Central Asia as elsewhere in the ancient world—usually take a broad, transregional perspective. However, such broad discussions run the risk of oversimplifying microregional realities on the ground. They tend to overemphasize certain features of the ancient economy while neglecting other important aspects—such as local actors and local circumstances—simply because they tend to be less visible in the bigger picture. In order to bring such otherwise-lost aspects into the picture, microregional perspectives not only need to remain part of the discussion—they oftentimes provide a productive starting point for further inquiry.

In the following, I hope to exemplify this by looking at the role of border markets within regional and transregional economic networks, focusing on the Bukhara oasis as a node within the larger network of commercial exchanges across southwestern Central Asia and beyond. This network is often conveniently labeled the "Silk Roads"—a term that has morphed into a powerful, yet rather problematic, historical narrative.[1] One of the many problems with the conventional Silk Road narrative of commercial and cultural encounters across Central Asia and beyond is its emphasis on cities: in this narrative, it is almost exclusively the urban centers of the fertile oasis regions, such as Bukhara, Balkh, or Marw, that supposedly serve as "natural" nodes for commercial and cultural encounters, imagined as dots along the trajectory of caravan routes. By contrast, largely overlooked remains the fact that, apart from the urban centers of

1 See, for example, Rezakhani 2010; Brosseder and Miller 2018.

Stark, Sören: Between Desert and Oasis: Border Markets and their Place in Economic Networks in Southwestern Central Asia, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 103–120. DOI: https://doi.org/10.17885/heiup.1582.c22724

irrigated river oases, commercial hotspots serving as important nodes in transregional economic networks notably developed in the border zone of these river oases in the form of border markets and specialized production centers. This zone is in the center of the following discussion.

Oasis, Border, and Frontier: The Case of Bukhara

The microregional anchor point of my discussion is the oasis region of Bukhara (Fig. 1). It is formed by the alluvial fan of the Zerafshan river, one of the two large rivers of the historical region of Sogdiana. Bukhara and its hinterland represent an excellent case in point. On the one hand, this microregion was situated at an important crossroads between Bactria–Tokharistan, Chorasmia, the Iranian Plateau, and the Syr Darya regions. On the other hand, we have some detailed information about a whole gamut of extra-urban bazaars in this region from a relatively early written source: the *Tārīkh-i Bukhārā*.[2] This important local history was written in Arabic before 943/4 CE by a certain Abū Bakr Muḥammad ibn Ja'far Narshakhī, a native of one of the villages in the hinterland of Bukhara. However, this history has come down to us only in the form of an abridged translation into Persian, amended with additional material in 1128/9 CE by a certain Abū Naṣr Aḥmad ibn Muḥammad Qubāvī, and then again in 1178/9 CE by a certain Muḥammad ibn Zafar ibn 'Umar.[3] The latter notably added information from a now lost work entitled *Khazā'in al-'ulūm* ("Treasures of Sciences") by a certain Abu'l Ḥasan 'Abd al-Raḥmān ibn Muḥammad Nīshāpūrī, which preserved many older traditions from the countryside outside of the city. Indeed, with regard to its richness on information pertaining to the countryside, the extant version of the *Tārīkh-i Bukhārā* is quite unique among the local histories of eastern Iran and western Central Asia that have come down to us.[4]

Of course, there is no denying that urban markets in the oasis centers were of great importance. During the early medieval period, they were centered in the suburbs to the south and the southeast of the inner city (Arab. *madīnah*, Pers. *shahristān*), close to the Shāh-rud canal, the main watercourse of the city since early medieval times.[5]

2 *Tārīkh-i Bukhārā*, ed. Riḍawī 1984.

3 On the textual evolution of the *Tārīkh-i Bukhārā*, see Смирнова 1965. There are even later additions to the text.

4 On this group of sources, see, for example, Paul 1993; 2000; Melville 2000.

5 Commerce in this area culminated during a biannual fair called "Bazaar on the day of Mākh," where, during the middle of the tenth century, daily transactions surpassed 50,000 dirhams

But what is sometimes overlooked is the fact that traveling inside the irrigated oasis territories was actually quite difficult. Nineteenth-century travelers repeatedly mention the bad quality of roads: in winter and spring they were muddy, while during early summer the high water in the canals made many bridges impassable.[6]

Thus, the markets of the major centers inside the oasis were by no means "natural" transit hubs for those who passed by on their way to other destinations. This is one of the reasons why the originally relatively small site of Paykand—located outside the oasis of Bukhara with no significant agricultural hinterland of its own, but right on the desert–steppe tract of the king's road between Khorasan and Samarqand—developed between the fourth/fifth and the eighth centuries into one of the most commercially vibrant cities of the entire region: a veritable border city.[7]

When we turn to the nonurban zone of the border of the Bukhara oasis, we notice two seemingly contradictory conditions. On the one hand, this was a well-defined border. In ecological terms, the sandy expanses of the Kyzyl-kum desert stretched to the north and west of the oasis, while the desert–steppe plateau of the so-called *orda chūl* bordered the oasis to the east and south. Militarily, at least at some point around the fourth century and again between 830 and ca. 900 CE, the entire irrigation oasis was also enclosed by an impressive oasis wall defense system—Bukhara's famous *Dīvār-i Kanpirak*, complete with close to sixty fortresses, watchtowers, or fortified gates.[8] But on the other hand, the outer border zone of the Bukhara oasis was also a fuzzy frontier, where central authority was rather contested. In the early nineteenth century, Russian caravans coming from Orenburg via the lower Syr Darya were met and inspected and sealed by the customs officials of the *amīr* (under the command of the *qūshbēgī*) at a place called Kargata, some eighty kilometers deep in the Kyzyl-kum

(*Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 29–30). Apparently, this and other fairs in Bukhārān Soghd (see below) were originally connected with Sogdian temple festivals—see Bīrūnī, *al-Āṯār al-bāqiya*, ed. Sachau 1878, 234–235. On permanent bazaars in the suburbs, see *Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 73 (the bazaar at the southern gate, also called the "Gate of the Spice-sellers"), 79 (the bazaar of Kharqān beyond the eastern gate and stretching northwards), 131 (the bazaars destroyed by the grand fire of May 937). A small bazaar (including a small metal workshop) dating to the late Samanid and early Qarakhanid period has been identified in the course of recent archaeological excavations conducted by the Uzbek–American Expedition in Bukhara (UzAmEB) just to the north of the present-day Congregational Mosque—see Mir-Makhamad et al. 2023; Schibille et al. 2024; Мирзаахмедов et al. 2024. For the bazaars of the city between the sixteenth and the twentieth century, see in detail Nekrasova 1999.

6 Von Helmersen 1839, 67; von Schwarz 1900, 166–172; 418–422.

7 Наймарк 1992; Stark 2021.

8 For written sources on this oasis wall, see https://isaw.nyu.edu/research/bukhara-project/sources (accessed May 17, 2025), especially the *Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 46–48. For archaeological research, see Обельченко 1960; Мухамедов 1961; Муҳамедов 1961; Мухамеджанов 1983; Штарк and Мирзаахмедов 2015; Мирзаахмедов et al. 2016; Stark and Mirzaakhmedov 2016; Мирзаахмедов, Штарк, and Мирзаахмедов 2018; Stark forthcoming.

Fig. 1 Map of the Bukhara region with sites and places mentioned.

desert.[9] Apparently, this was a countermeasure to what usually happened along the Syr Darya, another border zone, with Russian caravans going up this river to Kokand: when they arrived in the first frontier settlements at the middle course of the river, small "black markets" emerged spontaneously, in which caravan traders sold parts of their commodities to local Kazakh nomads, thus avoiding customs payments for part of their goods, because taxes were only levied further upstream upon entering the Tashkent oasis.[10] During the tenth to twelfth centuries, this outer border zone was probably mostly monitored from caravanserais located deep in the desert. A telling example of this is the remains of one such caravanserai in the Kyzyl-kum desert on the route from Bukhara to Khorezm, today called Ak-Rabat by local pastoralists (who still use its old well for their herdsmen station)—doubtless the ribāṭ Tāsh mentioned

9 Eversmann 1823, 60; von Meyendorff 1826, 234; von Helmersen 1839, 66.
10 Von Helmersen 1839, 68.

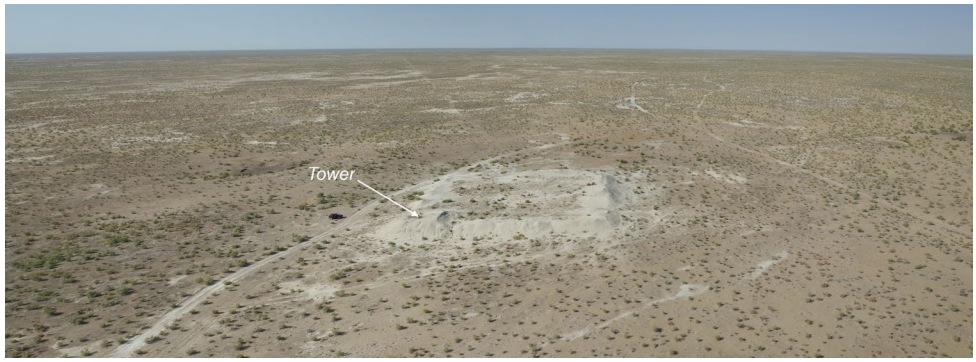

Fig. 2 Aerial photograph of Ak-Rabat.

by al-Muqaddasī (Fig. 1).[11] Situated some twenty kilometers (i.e., a one-day journey) beyond the "Long Wall," this caravanserai seems to have been built during the later tenth century and featured a ten-by-ten-meter tower next to its entrance (Fig. 2).[12] This tower probably housed a small outpost that safeguarded the caravanserai but perhaps also controlled incoming caravans before they reached the actual border of the oasis the next day.

Regular Border Markets: The Early Medieval Evidence

Much more important than the unregulated, largely spontaneous "black markets" in the outer border zone were regular border markets. These were situated right at the heavily policed immediate border of the irrigated oasis. Taking the form of either weekly rural bazaars or annual fairs, they could attract a considerable volume of trade.

Among the important rural bazaars mentioned by the *Tārīkh-i Bukhārā,* the one at Wardāna was surely a veritable border market. Wardāna (today Vardanze)[13] was located at the northern border of the oasis (Fig. 1), in an interaction sphere with the pastoral world of "Turkistān" as well as on an important route leading to the lower Syr Darya. It is probably for these reasons that this market was, in the time of Narshakhī, a commercial hotspot that saw "much trading" (*bazargānī bisiyār*).

11 al-Muqaddasī, ed. de Goeje 1877, 343.
12 Шишкин 1956, 5–6; Stark et al. 2015, 26.
13 On the history of the site and the result of recent excavations, see Pozzi 2018; Pozzi, Mirzaachmedov and Sultanova 2019; Pozzi 2024.

Specifically mentioned among the commodities traded there is "well-made Zandanījī (cotton) textiles" (*zandanījī būda nīkū*).[14] The geographers of the tenth to twelfth centuries frequently mention such cotton textiles as exports to the west, but they were also important for the trade with pastoralists.

As for fairs—perhaps all originally associated with Sogdian temple festivals (Sogd. *ʾγʾm*)[15]—a particularly large one was situated in the area of Arqūd/Ṭawāwīs (approximately in the area of present-day Kyzyltepa; Fig. 1). It is mentioned in a wide range of sources, several of them specifically stressing its transregional importance.[16] Importantly, this fair was not situated in the depths of the oasis but at or very close to its border. Its most detailed description is preserved in the extant version of the *Tārīkh-i Bukhārā*, possibly derived (although this is not explicitly stated) from Nīshāpūrī's *Khazāʾin al-ʿulūm*[17] and, thus, perhaps going back to some local oral tradition:

> In former times there used to be a fair for ten days in the season of the month of Tīr. The nature of that fair was such that all defective goods, such as curtains, covers, and other goods with defects, were sold in this fair. There was no way or means to return goods in the fair, for neither the seller nor the buyer would [return or] accept them back on any condition. Every year more than 10,000 people came to this fair, both merchants and buyers. They even came from Ferghāna, Chāch, and other places, and returned with much profit. Because of this the people of the village became rich, and the reason for that was not agriculture. It is located on the royal road to Samarqand, seven parasangs from Bukhārā.[18]

Important additional information about this border fair is preserved in Bīrūnī's *Kitāb al-Tafhīm*:

> The Magians of Soghdia also have their feasts and festivals of a religious nature called āghāms […] In these they hold bazaars […] at which we are

14 *Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 21. For a long time, these Zandanījī textiles were believed to be silk textiles, but they are clearly cotton textiles. Cf. Marshak 2006; Sims-Williams and Khan 2008; Dode 2016.

15 Our main source on these temple festivals is Bīrūnī (Bīrūnī, *al-Āṯār al-bāqiya*, ed. Sachau 1878, 221; Bīrūnī, *al-Tafhīm*, ed. Wright 1934, 184). See also Смирнова 1970, 141–142.

16 *Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 17–18; Bīrūnī, *al-Tafhīm*, ed. Wright 1934, 184; Bīrūnī, *al-Āṯār al-bāqiya*, ed. Sachau 1878, 221; Iṣṭakhrī, ed. Ḥīnī 1961, 175; Ibn Ḥawqal, ed. Kramers 1939, 489; al-Muqaddasī, ed. de Goeje 1877, 281; al-Idrīsī, ed. Cerulli et al. 1970–1984, 495–496; Ḥudūd al-ʿālam, ed. Sutūda 1962, 113.

17 This was already suggested by O. Smirnova (Смирнова 1970, 144), who had been working on a critical edition of the text.

18 Trans. Frye 1954, 13 (with corrections by author).

> told stolen articles are sold, great confusion prevails and no returns are made. […] The fair of Ṭawāwīs, a large and populous town, lasts for seven days from the 15th of Mazhīkhandā (Sogd. *məzēxand*) the sixth month.[19]

In addition, a number of tenth- to twelfth-century geographers stress the transregional importance of this fair:

> Ṭawāwīs, où les habitants tenaient autrefois une foire, qui rassemblait une affluence considérable de monde venant de tous les points du Khurāsān, à une date fixe de l'année. On s'y procure des étoffes de coton avec une telle profusion qu'on en exporte en Iraq.[20]

Judging from all these accounts, we are dealing here with an annual fair that generated a huge volume of trade. In order to assess the character of this important fair, we must answer four questions: 1) Where did the fair take place? 2) When did it take place? 3) What were the main commodities traded there? and 4) What was its catchment area?

We know that the citadel of the town of Arqūd/Ṭawāwīs was situated very close to the northeastern border of the oasis (Fig. 1).[21] From our extant sources, it is not clear where exactly this fair took place, but given its dimensions, it is unlikely that it was situated inside the densely inhabited and intensively farmed oasis area. It was probably held at the nearby border with the desert steppe, where caravans passed by on their way between Samarqand, Paykand, and Marw. During the periods when the oasis of Bukhara was fenced off towards the desert–steppe by an oasis wall, the fair most likely took place at one of the major gateways into the oasis. Indeed, there used to be a unique archaeological ensemble ca. 3.2 km to the southeast of the actual town of Arqūd/Ṭawāwīs constituting the remains of the main gate of the oasis wall in this area on the main road to Samarqand.[22] Unfortunately, most of this ensemble is destroyed today. However, it was investigated by A. Iakubovskii's and V. Shishkin's Zerafshan expedition in 1934 and by the Uzbek–American Expedition in Bukhara (UzAmEB) in 2011 and 2015–2016. The ensemble is also clearly visible on Corona

19 Trans. Wright 1934, 184.

20 Ibn Ḥawqal, ed. Kramers 1939, 489; trans. Kramers 1964, 469. Similar al-Idrīsī, ed. Cerulli et al. 1970–1984, 495–496 and Iṣṭakhrī, ed. Ḥīnī 1961, 175, who has "Mawarannahr" instead of "Khurāsān" and does not mention Iraq; al-Muqaddasī, ed. de Goeje 1877, 281 calls the market "quite long."

21 Namely, at the archaeological site of Khoja-Buston, ca. 3.8 km to the northwest of the present-day *rayon* center Kiziltepa. Cf. Штарк and Мирзаахмедов 2015, 93.

22 Якубовский 1940; Алпаткина, Иневаткина, and Кулакова 2008; Шишкин 2015; Мирзаахмедов and Штарк 2012; Штарк and Мирзаахмедов 2015; Stark and Mirzaakhmedov 2016; Мирзаахмедов, Штарк, and Мирзаахмедов 2018.

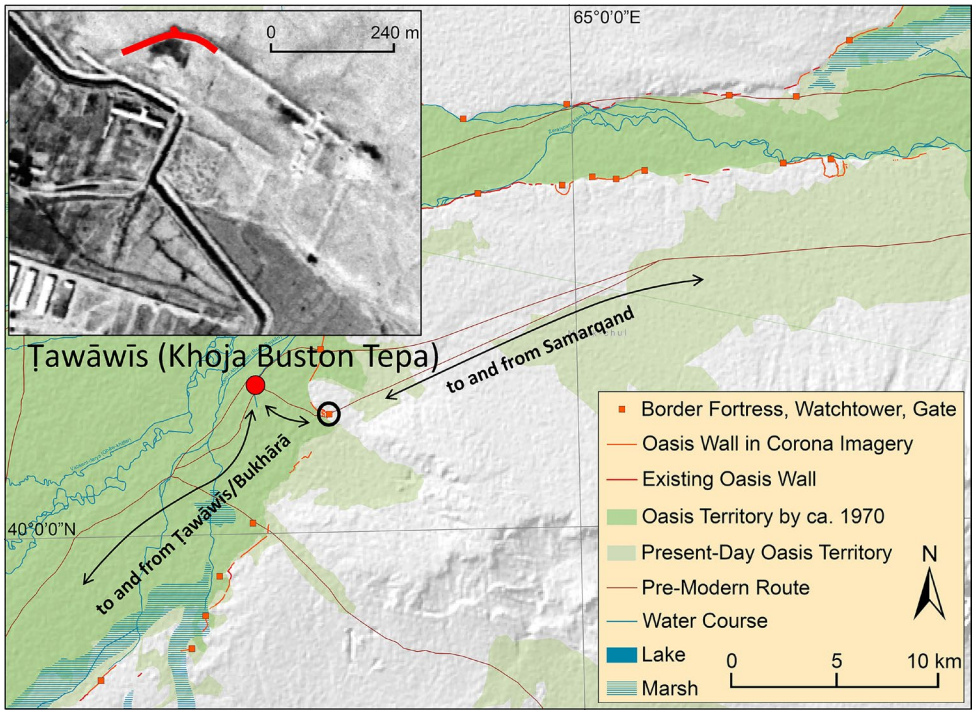

Fig. 3 Map with Corona image of Kiziltepa ensemble.

imagery from March 1970 (Fig. 3). It consisted not only of a strong border fortress, the line of the oasis wall, and a gate opening adjacent to the fortress but also of a large enclosure, measuring a total of more than ten hectares. The area of this enclosure is littered with sherds mainly dating to between the fourth and the tenth centuries CE, but it showed few traces of permanent habitation. This seems like a very good candidate for the spot where the famous fair of Arqūd/Ṭawāwīs could have taken place (at least during the periods when the "Long Wall" was functioning): situated right at the interface of the oasis and the steppe on the main route to and from Samarkand but, at the same time, fenced off from the steppe and thus, in all likelihood, heavily policed.

The second question is the exact timing of the bazaar. Most modern commentators hold that this was a summer fair because the "month of Tīr" is the fourth month of the Persian solar calendar, corresponding to mid-June to mid-July. However, we know that the Sogdians employed a mobile calendar and that, in late pre-Islamic times, the Sogdian New Year fell at the end of July. At that time, the fourth month of the year would have occurred in the fall. This is confirmed by Bīrūnī's *Kitāb al-Tafhīm*,

which states that the fair started on the fifteenth day of the sixth month—that is, September–October. So, in all likelihood, this was a fall fair, not a summer one.

But what were the main commodities of this border fair? According to the *Tārīkh-i Bukhārā*, "defective goods, such as curtains, covers, and other goods with defects" (*ākhriyān-i maʿyūb būdī az barda wa sutūr wa dīgar ākhriyān bā ʿaīb*) were sold. The tenth- to twelfth-century geographers all mention cotton cloths being sold at this market. However, there is an additional interesting detail reported by Bīrūnī, namely, his strange assertion that "stolen goods" were sold here, that could not be returned. The point that sales could not be rescinded also appears in the *Tārīkh-i Bukhārā*—but there it is mentioned with regard to defective goods, which makes perfect sense. As for the "stolen goods" (*masrūqāt*), I am inclined to follow O. Smirnova's suggestion to simply eliminate a dot over the *qaf*, thus arriving at *masrūfāt*—meaning something like "things eaten by worms" (i.e., by moths), thus suggesting silken or woolen (but not cotton) textiles.[23] This fits well with the curtains and covers mentioned by the *Tārīkh-i-Bukhārā*. As there is no good evidence for silk production in Bukhara in the tenth century or earlier,[24] we may assume these were mostly woolen carpets, covers, and wall hangings—in addition to the cotton textiles mentioned by the tenth to twelfth century geographers (which were apparently also traded at the border market at Wardāna; see above).

This finally leads us to the question: who were the main actors at this bazaar? Or, in the words of the *Tārīkh-i Bukhārā*: who were these people from "Ferghana, Chach, and other places"? Geographically, this clearly points to the regions along the middle Syr Darya, and indeed, there were several important steppe routes connecting Bukhara directly with the middle course of the Syr Darya, running north of the Nuratau range.[25] We know that the city dwellers along the micro-oases of the middle Syr Darya and its tributaries lived very closely intertwined with pastoral communities in the steppes and high mountains. Thus, the *Tārīkh-i Bukhārā* could have been referring to urban middlemen from Ferghana, Chach, and all the way up to the Otrar–Turkestan–Sawrān area, who sold or bought woolen textiles at this fair in Bukhara; but it is equally possible that these people from "Ferghana, Chach, and other places" included pastoralist groups from the middle Syr Darya regions. And here the timing of the fair comes into play: we know that the fall was the time when pastoralists drew near the marshy eastern fringes of the oasis, using them as winter pasture area.[26] For the centuries around the turn of our era, this is impressively attested by the presence of hundreds of kurgans along the eastern fringes of the Bukhara oasis, including the

23 Смирнова 1970, 144–145.

24 As opposed to later periods; for the sixteenth century and later, see Nekrasova 1999, *passim*.

25 These routes largely remained outside of the purview of the tenth- to twelfth-century geographers, but they are attested in later sources (e.g., Ott 1974, 87–89) and by the remains of caravanserais and sardābas (Немцева 1985; 1987; 2006; Манылов 1987).

26 Шаниязов 1975, 189. See also Paul 1996, 111 n. 82.

border area near Arqūd/Ṭawāwīs (with extensive kurgan clusters at Shakhri-Vayron, Kiziltepa, Lyavandak, and Kuyu-Mazar).[27] Thus, it is also possible that the enormous fair at the border near Arqūd/Ṭawāwīs, held at some point in the fall, was the place where pastoral groups from up to the middle Syr Darya regions sold woolen fabrics during their seasonal migrations into the region. In this context, it is worth remembering a particular detail mentioned by the *Tārīkh-i Bukhārā* with regard to the fair at Arqūd/Ṭawāwīs: the sale of defective textiles. Perhaps we have to understand this curious notice in the sense that this fair was dominated by wholesale trade, i.e., these textiles were predominantly purchased in bulk by city-based resellers (perhaps similar to the later attested *dallāl*)[28] and not by final consumers; but at the end of such fairs, remaining and defective goods were sold to the local population at cheap prices.

A similar trade with, perhaps, more local pastoralists might have occurred at a second important fair, not far from the eastern border of the oasis zone, at the large village of Shargh. We are told that it took place in winter and that lamb and sheepskin were, in the time of Narshakhī, among the dominant trade items.[29] That herdsmen would sell their highly priced lambskins at a winter fair makes perfect sense, as winter was the traditional lambing season for the famous Karakul lambs in this region.

Specialized Craft Production in the Border Zone: Some Thoughts on Archaeological Evidence for the Pre-medieval Period

Not only trade took place in the border zone. There was also specialized craft production, notably the production of ceramics and metal tools. In the following, I would like to focus on some archaeological evidence that allows us to bring our inquiry chronologically back to antiquity (third century BCE–third/fourth centuries CE).

In an important study, published in 2006, S. Bolelov surveyed more than seventy archaeological sites in the regions of Chorasmia, the lower Syr Darya, Sogdiana, Bactria, Margiana, and Parthyene directly associated with the production of ceramics and dating between the middle of the first millennium BCE and the middle of the first millennium CE. Apart from urban potters' quarters and specialized open production

27 On these kurgans, see Wang 2020 (with earlier literature).

28 Some sort of "brokers," "agents" (Arabic: *dallāl*—lit. "guide"). On the role of these *dallāl* in nineteenth and early twentieth century Bukhara and Qaraqul, see Калашников 1927, 130–131; Сухарева 1966, 236–238; Джаббаров 2011, 183.

29 *Tārīkh-i Bukhārā*, ed. Riḍawī 1984, 20–21.

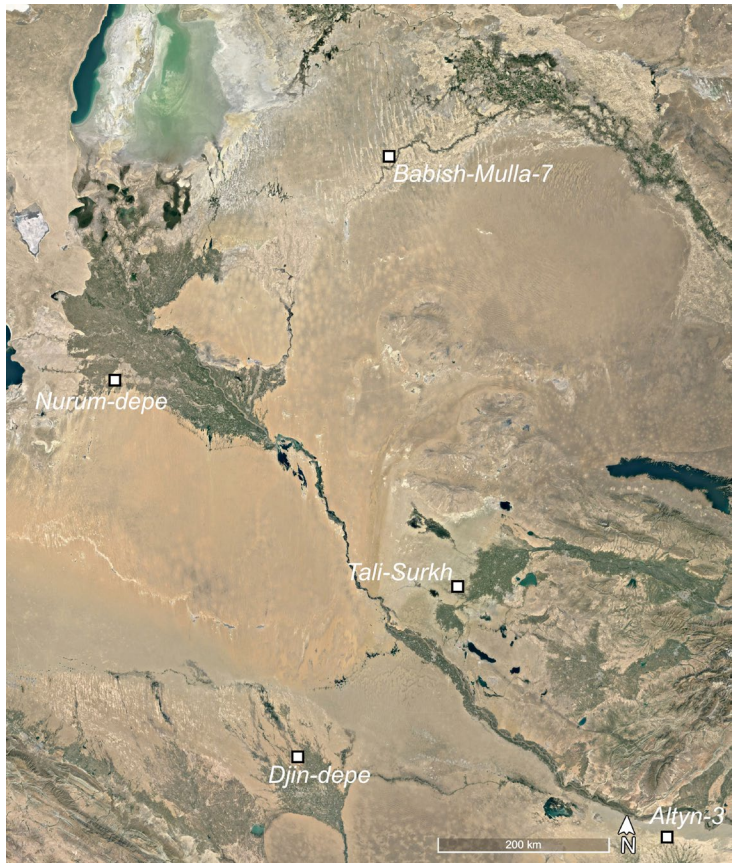

Fig. 4 Map with specialized potters'/craft production/bazaar settlements.

areas in the rural countryside, he notices another interesting type of production site, namely, specialized potters'/craft production/bazaar settlements (Fig. 4).[30] In Bolelov's study, four sites represent this type of production site: the site Babish-Mulla-7 in the old delta area of the Syr Darya (in the area of the Chirik-Rabat culture along the old bed of the Jana-Darya),[31] the site Altyn-3 in Bactria,[32] a cluster of farmsteads around Nurum-depe in left-bank Chorasmia,[33] and the site Djin-depe in Margiana.[34] The

30 Болелов 2006, 116–119.
31 Болелов and Утубаев 2017; Утубаев et al. 2023.
32 Болелов 2006, 116.
33 Вайнберг and Болелов 1999; Болелов 2005; 2006, 116–119; 2012, 483–484.
34 Мержин 1962; Кошеленко 1963.

former two sites date to the third quarter of the first millennium BCE; the latter two to the centuries around the turn of our era.[35] Considering this low number, one should be careful with far-reaching generalizations, but all these sites represent non-fortified open settlements comprised of individual farmsteads around or next to some more monumental central building, complete with a substantial amount of kilns (between fifteen and forty). These were not separated from the settlements; instead, almost every farmstead seems to have had its own kiln. One of the farmsteads of the site in Nurum-depe in left-bank Chorasmia, which happens to be the best explored within this group so far, also housed a smithy and wine presses. Such specialized craft production/bazaar villages also existed in the region in later times; they were studied in the early 1950s by B. Vainberg. Typically, production took place in houses that were loosely scattered around the manor house of some local notable; the products were then usually sold on site. Such craft-production/bazaar settlements often served Turkmen and other nomadic groups living further away.[36]

A similar purpose has been suggested by Bolelov for the sites of Nurum-depe, Djin-depe, Babish-Mulla-7, and Altyn-3. Indeed, all these specialized craft-production settlements are found at the fringes of the agricultural oases or in the zone already dominated by pastoralists, suggesting that production was probably geared towards the latter.

To this group of sites we might now add a fifth one: the small site of Tali-Surkh, first discovered by V. Shishkin and recently investigated by the UzAmEB (Fig. 5).[37] It is situated on the western outskirts of the oasis of Bukhara and seems to have, according to surface finds, functioned first between the third century BCE and the first century CE, and then again briefly between the third and fourth centuries CE. During the earlier phase, it was part of a small settlement cluster that occupied the area at the border of the irrigated farmland, while during the later period, it formed an isolated site just beyond the perimeter of the late antique/early medieval oasis wall. The site follows the same general structure as observed by Bolelov for sites of the type "craft-production/bazaar settlement": a very small (ca. 0.1 ha) central tepa (perhaps the remains of a manor house) surrounded by a non-fortified open settlement (indicated by low mounds) and production areas. The latter are attested in form of two distinct areas, where considerable amounts of ceramic and metallurgic slag were deposited. Indeed, a geomagnetic survey conducted by the UzAmEB in March 2023 under the direction of Zachary Silvia revealed clear traces of kilns and/or furnaces.[38] In addition, pedestrian

35 Болелов (2012, 484) notes that some of the central manor houses at Nurum-depe might date as early as the fourth–second centuries BCE.

36 Вайнберг 1961, 17–18.

37 Шишкин 1963, 143; Stark et al. 2019; Мирзаахмедов et al. 2020, 209–212.

38 Silvia et al. in preparation.

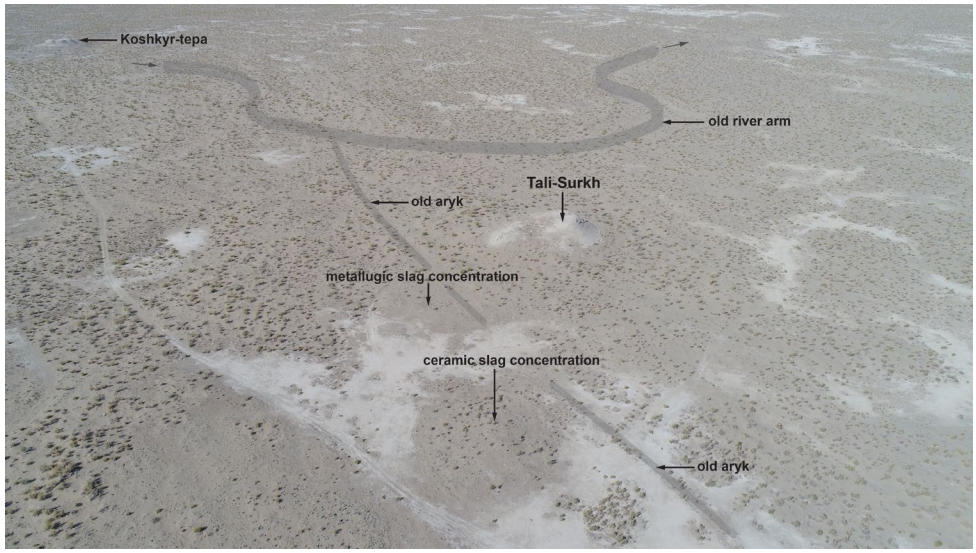

Fig. 5 Aerial photograph of Tali-Surkh.

surveys of the surroundings of the site conducted in August 2018 and September 2022 (the latter by a group of metal detectorists)[39] yielded numerous finds of worked stones, misfired ceramics, a total of ten bronze finger-rings, a bronze seal, two terracotta fragments, and the fragment of a mold for a terracotta figurine.[40] Thus, presumably, not only ceramics were produced around Tali-Surkh but also terracotta figurines and perhaps also personal jewelry. That there might have been some sort of bazaar at this spot is suggested by a concentration of coin finds around the site.[41] Thus, there are good reasons to suggest that the ensemble of Tali-Surkh represents the remains of a specialized craft-production/bazaar settlement at the western border of the Bukhara oasis at some point between the third century BCE and the third/fourth century CE.

39 My heartfelt thanks go to Tomáš Bek, Miroslav Kratochvíl, and Václav Kalenda for their collaboration.

40 For the terracotta figurines and the mold from Tali-Surkh, see Stark et al. 2019, 168–170.

41 V. Shishkin mentions finds of "completely corroded small bronze coins" encountered during his surveys in 1937 or 1938 (Шишкин 1963, 143). A. Musakaeva reports a Hyrcodes imitation coin among Shishkin's finds at Tali-Surkh (Мусакаева 2014, 135). In addition, our metal detector survey of the surroundings of the site in September 2022 revealed one Hyrcodes obol (first to second century CE?), five late Hyrcodes hemi-obols (early third century CE?), and one potential post-Kushan copper coin (third to fourth century CE?). Unfortunately, this area has been systematically looted by local metal detectorists for more than ten years now, so these are likely only the "leftovers" of a once much more substantial assemblage.

Conclusion

This paper hopes to have shown that, in the fertile oasis regions of southwestern Central Asia, it was not only the major urban centers where commercial hotspots and specialized production areas developed but also the seemingly "peripheral" border zones of the oases.

First of all, one needs to acknowledge that the notion of the "border" itself involved both ecologically (and sometimes militarily) well-defined border "lines" as well as a fuzzy frontier (or "outer border zone"). The latter, sparsely populated by (mostly) pastoral groups, was a place of contested authority that nonetheless gave opportunity to commercial activities, often in the form of small unregulated "black markets" evolving around passing caravans.

However, and perhaps not surprisingly, regular border markets right at the usually heavily policed immediate border of the irrigated oasis were much more important. In the oasis of Bukhara alone, data from textual sources (both historical and ethnographic) and archaeological investigations reveal a whole gamut of vibrant border markets—ranging from rural weekly markets to major yearly fairs of transregional importance.

These border markets and associated production centers played an important role in serving the economic needs of pastoral and agro-pastoral groups in the region. However, as impressively shown by the famous fair at Arqūd/Ṭawāwīs, they could also attract actors from neighboring regions and even beyond. Either way, these border markets served as important nodes in regional and transregional economic networks—the latter sometimes spanning across Central Asia and beyond. This observation forces us to rethink our traditional focus on urban centers even when it comes to broad discussions of macro-economic phenomena and trends, or at least to be careful not to mistake the heightened visibility of cities in many of our sources as an accurate reflection of the realities on the ground, which tend to be more complex and involve a wide range of nonurban actors and agents.

Figure Credits

Fig. 1, 4 Map: Sören Stark, Google Earth imagery.

Fig. 2, 5 Photo: Sören Stark.

Fig. 3 Map: Sören Stark; inset: Corona imagery, March 1970.

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Notes on Barygaza's Trade
Commodities and Coins at an Asian Crossroads

Federico De Romanis

In the *Periplus Maris Erythraei*, the kingdom of the Kṣaharāta Nahapāna appears as one of the main Asian hubs for long-distance trade.[1] At Ozene (Ujjayinī), which was and would again be the capital of the kingdom, the land routes from both the south (Deccan plateau and Bay of Bengal) and the north (Indus valley, Punjab, and Himālaya) meet.[2] At Barygaza (Bhṛgukaccha/Bharukaccha, Bharuch), at the mouth of the Narmadā River, the sea routes from Egypt, Arabia, West Asia, and South India converge.[3] The merging of these long-distance trade networks broadened the economic horizons of a kingdom suddenly elevated to a pivotal commercial role.

1 The *Periplus Maris Erythraei* was written during the reign of the Nabataean king Malichus II (Peripl. M. Rubr. 19), between 39/40 and 69/70 CE (Wenning 1993, 36). Barygaza was then within the dominion of king Manbanos, whose identification with the Kṣaharāta king Nahapāna has long been established (Boyer 1897) and generally accepted. Since the dates in the inscriptions of Nahapāna cannot refer to the Saka era (Pauli 1986; Cribb 1992), the absolute chronology of his reign cannot be more narrowly approximated than (partly) overlapping the reign of Malichus II.

2 Peripl. M. Rubr. 48: ἔνι δὲ αὐτῆς καὶ ἐξ ἀνατολῆς πόλις λεγομένη Ὀζήνη, ἐν ᾗ καὶ τὰ βασίλεια πρότερον ἦν, ἀφ᾽ ἧς πάντα τὰ πρὸς εὐθηνίαν τῆς χώρας εἰς Βαρύγαζαν καταφέρεται καὶ τὰ πρὸς ἐμπορίαν τὴν ἡμετέραν, ὀνυχίνη λιθία καὶ μουρρίνη καὶ σινδόνες Ἰνδικαὶ καὶ μολόχιναι καὶ ἱκανὸν χυδαῖον ὀθόνιον. κατάγεται δὲ δι᾽ αὐτῆς καὶ ἀπὸ τῶν ἄνω τόπων ἡ διὰ Προκλαΐδος καταφερομένη νάρδος ἡ Καττυβουρίνη καὶ ἡ Πατροπαπίγη καὶ ἡ Καβαλίτη καὶ ἡ διὰ τῆς παρακειμένης Σκυθίας, ὅ τε κόστος καὶ ἡ βδέλλα. "There is in this region towards the east a city called Ozene, the former seat of the royal court, from which everything that contributes to the region's prosperity, including what contributes to trade with us, is brought down to Barygaza: onyx; *murrina*; Indian garments of cotton; garments of molochinon; and a considerable amount of cloth of ordinary quality. Through this region there is also brought down from the upper areas the nard that comes by way of Proklais (the Kattyburine, Patropapige, and Kabalite), the nard that comes through the adjacent part of Skythia, and costus and bdellium" (transl. by L. Casson). At the time of the *Periplus*, the king possibly resided in "Minnagara, metropolis of the region" (Peripl. M. Rubr. 41; for its location, see Casson 1989, 199). By the time of Caṣṭana, the king's residence had gone back to Ujjayinī; see Ptol. *Geog*. 7.1.63.

3 Peripl. M. Rubr. 21; 27; 36; 49; 52–54. On Barygaza, see now also Ghosh 2023.

De Romanis, Federico: Notes on Barygaza's Trade: Commodities and Coins at an Asian Crossroads, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 121–143. DOI: https://doi.org/10.17885/heiup.1582.c22725

However, the circulation of coins of different metals and standards—the old punch-marked coins, the drachmas (Indo-Greek, Western Kṣatrapa, and Sātavāhana), and the Roman *denarii* and *aurei*—could not help but create monetary tensions. This paper aims to show how king Nahapāna and the mercantile communities operating in Barygaza adapted to the peculiarities of a monetary circulation at the intersection of multiple commercial networks.

Trade Networks

While describing the region and trade of Barygaza, the author of the *Periplus* mentions a number of Indian choronyms that are not found in other Greek or Latin texts: Dachinabades (Dakṣiṇāpatha, Southward Road), Ariake (Āryāvarta, Country of the Ārya), Aberia (Ābhīra), Syrastrene (Saurāṣṭra), and Papike (cf. Pāpeyaka < Pāpī? Pāpeya?).[4] For Ariake and Dakṣiṇāpatha, the author is only nebulously conscious of their inland extent;[5] not surprisingly for a periplographic account, only their coastal boundaries are specified: Ariake and the kingdom of Nahapāna begin after Barake (Gulf of Kutch) and end south of Barygaza, where Dachinabades begins.[6] Yet in no other Greek or Latin text can we find a similar emphasis on a geopolitically crucial polarity that has resonated so deeply through time in India's ancient history.[7]

The author of the *Periplus* is not aware that Dakṣiṇāpatha was originally a name for a land route, nor is he aware of any choronymical or hodonymical projection of its reverse, Uttarāpatha (Northward Road). Despite their morphological parallelism, Uttarāpatha and Dakṣiṇāpatha are not geographically or historically related. Pāṇini's Uttarapatha is the "Royal Road" from Pāṭaliputra to the Indus River referred to by

4 Peripl. M. Rubr. 41; 43. Saurāṣṭras, Avantis, Ābhīras, Śūras, Arbudas, and Mālavas are associated in *Bhāgavat Purāṇa* 12.1.36; see Mitra 1951. For *Pāpeyaka* horses, see *Arthaśāstra* 2.30.29. A delimitation of Āryāvarta is in Baudhāyana, *Dharmasūtra* 1.1.2.9: "west of Ādarśa, east of Kālaka forest, south of Himālaya, north of Pāriyātra, this is Āryāvarta. The practice in this land is the authentic one." For the location of Ādarśa (where Sarasvatī River loses itself), Kālaka forest (near Allahabad), and Pāriyātra (western part of the Vindhya) and, in general, the notion of Āryāvarta over time, see Mitra Shastri 1969, 45.

5 Peripl. M. Rubr. 50. The generally accepted correction μέχρι τοῦ Γάγγου (Stuck) is better avoided. The manuscript's reading μέχρι τοῦ σύνεγγυς reflects the lack of knowledge of the lands beyond Tagara and should be kept: De Romanis 2020–2021.

6 Peripl. M. Rubr. 41; 50.

7 It reemerges, for example, in the Allahabad inscription of Samudragupta: *Corpus Inscriptionum Indicarum* 3.1, ll. 20–21.

Megasthenes.[8] Whether the term Dakṣiṇāpatha is as old is uncertain.[9] In any case, Dakṣiṇāpatha did not start at Pāṭaliputra or at any other stop along the Royal Road to the Indus.[10] The combination of several clues—three passages from the *Periplus*,[11] the Pāli copulative compound *Avantidakkhiṇāpatha*,[12] a passage of the *Mahābhārata*,[13] and a definition by Rājaśekhara[14]—strongly suggests that Dakṣiṇāpatha originally referred to the road that started from Ujjayinī, touched Paithana (Pratiṣṭhāna, Paithan) and Tagara (Ter), and reached the Bay of Bengal.[15]

8 Pāṇini 5.1.77; Strabo 15.1.11 (= *FGrHist* 715 F 6c); Plin. *NH* 6.62–63.

9 For Dakṣiṇāpatha in the Sātavāhana inscriptions, see below n. 24. The occurrence in *Arthaśāstra* 7.12.22–24 (see below) shows that the notion was already known to the "teachers" (*ācāryāḥ*), but their chronology and that of "Kauṭilya" are difficult to determine.

10 The textual evidence regarding Dakṣiṇāpatha is reviewed by Mitra Shastri 1969, 47; Lahiri 1992, 381–387; Chakrabarti 2005, 1–18; and Neelis 2011, 205–217. However, the claim that Dakṣiṇāpatha connected the Gaṅgā-Yamunā valley with the west coast via the Deccan plateau is incorrect.

11 Peripl. M. Rubr. 48, quoted above n. 2; 50: μετὰ δὲ Βαρύγαζαν εὐθέως ἡ συναφὴς ἤπειρος ἐκ τοῦ βορέου εἰς τὸν νότον παρεκτείνει· διὸ καὶ Δαχιναβάδης καλεῖται ἡ χώρα·δάχανος γὰρ καλεῖται ὁ νότος τῇ αὐτῶν γλώσσῃ, "After Barygaza, the adjoining continent extends in a straight line from north to south. For this reason, the region is called Dachinabades. *Dachanos* is 'south' in their language"; 51: τῶν δὲ ἐν αὐτῇ τῇ Δαχιναβάδει δύο ἐστὶν τὰ διασημότατα ἐμπόρια, Παίθανα μὲν ἀπὸ Βαρυγάζων ἔχουσα ὁδὸν ἡμερῶν εἴκοσι πρὸς νότον, ἀπὸ <δὲ> ταύτης ὡς ἡμερῶν δέκα πρὸς ἀνατολὴν ἑτέρα πόλις μεγίστη Ταγάρα. κατάγεται δὲ ἐξ αὐτῶν πορείαις ἁμαξῶν καὶ ἀνοδίαις μεγίσταις εἰς τὴν Βαρύγαζαν ἀπὸ μὲν Παιθάνων ὀνυχίνη λιθία πλείστη, ἀπὸ δὲ Ταγάρων ὀθόνιον πολὺ[ν] χυδαῖον καὶ σινδόνων παντοῖα καὶ μολόχινα καί τινα ἄλλα τοπικῶς ἐκεῖ προχωροῦντα φορτία τῶν παραθαλασσίων μερῶν. "Of the trading centers in the region of Dachinabades, two are the most outstanding: Paithana, twenty days' travel to the south from Barygaza; and, from Paithana, about ten days to the east, another very large city, Tagara. From these there is brought to Barygaza, by journeys of wagons and very long roadless tracts, from Paithana large quantities of onyx, and from Tagara large quantities of cloth of ordinary quality, all kinds of cotton garments, garments of molochinon, and certain other merchandise from the coastal parts that finds a market locally there" (transl. by L. Casson, with modifications). The contrast between πορείαι ἁμαξῶν (journeys of wagons) and ἀνοδίαι (roadless tracts) mirrors that between *cakrapatha* (wheel track) and *pādapatha* (footpath) in *Arthaśāstra* 7.12.27, where a *kharoṣṭrapatha* (ass or camel road) is also mentioned: see De Romanis 2012, 333.

12 *Mahāvagga* 5.13.5–6; 12–13; cf. *Avantidakkhiṇāpathaka* in *Cullavagga* 12.1.7–8.

13 *Mahābhārata* 3.58.20–22: *ete gacchanti bahavaḥ panthāno dakṣiṇāpatham/ avantīm ṛkṣavantaṃ ca samatikramya parvatam/eṣa vindhyo mahāśailaḥ payoṣṇī ca samudragā// āśramāś ca maharṣīṇām amī puspaphalānvitāḥ/ eṣa panthā vidarbhāṇām// ayaṃ gacchati kosalān/ ataḥ paraṃ ca deśo 'yaṃ dakṣiṇe dakṣiṇāpathaḥ//*, "These many roads lead to Dakṣiṇāpatha, passing by Avanti and the Rikṣavat mountains. This is Vindhya, the mighty mountain and Payoṣṇī River running to the Ocean, and these are the hermitages of the great ascetics, with various flowers and fruits. This is the road of the Vidarbhas—and that goes to the Kosalas. From there and beyond, that land to the south is Dakṣiṇāpatha."

14 Rajaśekhara, *Kāvyamīmāṃsā* 93: *māhiṣmatyāḥ parato dakṣiṇāpatha,* "south of Māhiṣmati is *Dakṣiṇāpatha*."

15 The connections of Tagara with the Bay of Bengal are proved by the φορτία τῶν παραθαλασσίων μερῶν (Peripl. M. Rubr. 51) conveyed there. For the geographical and archaeological evidence concerning this trade route, see Chakrabarti 2005, 109–110; 117–119.

The hodonym Dakṣiṇāpatha (Southward Road) is a contrastive denomination that arose as a result of trade. In particular, it was generated by the southward trade voyages of the Dakṣiṇāpatha merchants.[16] A passage in the *Arthaśāstra* compares the commercial expediency of Dakṣiṇāpatha and the Himālayan Road (*Haimavata*).[17] It is self-evident that debating the advantages and disadvantages of these two trade routes made sense only in a context where they were actually alternative options. Quite appropriately, the author uses the word *Haimavata* (sc. *patha*) here. He avoids *Uttarāpatha*, because Dakṣiṇāpatha and Uttarāpatha did not share a terminal, nor did they ever intersect. The only place where traders from Himālaya and Dakṣiṇāpatha met was at Ujjayinī, which was not crossed by Uttarāpatha.[18] The Himālayan Road in the *Arthaśāstra* can be compared to the two routes for acquiring nard (a high-altitude vegetable typical of the Himālayan regions) outlined in the *Periplus*.[19] The first route (through Proklais) is probably reflected in the sequence of peoples "living behind" Barygaza—Aratrioi, Arachosioi, Gandaraioi, and the people of Proklais, where Alexandria Bucephalos lay;[20] the second (through Skythia) reached at some point along the Upper Indus valley. In any case, none of the Ujjayinī "Nard Roads" alluded to in the *Periplus* passed by the Gaṅgā-Yamunā confluence or by Mathurā. In other words, they did not join the Uttarāpatha.

In conclusion, it seems very likely that the hodonym Dakṣiṇāpatha was a creation of the mercantile communities based in Ujjayinī; that these same communities used to compare pros and cons of the Himālayan and Deccanese trade routes; and that the author of *Arthaśāstra* 7.12.22–24 reflects their debates.

Incidentally, it is worth noting that familiarity with the Ujjayinī area, the Himālayan regions, and Dakṣiṇāpatha is also suggested by *Arthaśāstra* 2.24.5, which records the pluviometry of Aśmaka (western Deccan), Avanti (Ujjayinī region), Aparānta (Konkan coast), and Haimanya (Himālaya).[21] Furthermore, the statements,

16 Dakṣiṇāpatha merchants (*Dakkhiṇāpathakā vāṇijā*) are mentioned in *Cullavagga* 1.18.3.

17 *Arthaśāstra* 7.12.22–24, quoted below.

18 Peripl. M. Rubr. 48, quoted above n. 2.

19 Ibid. The Nardostachys jatamansi is today reported in Himālayan regions between 3,600 and 4,800 meters above sea level (Olsen 2005).

20 Peripl. M. Rubr. 47: ἐπίκειται δὲ κατὰ <νώ>του τῇ Βαρυγάζῃ μεσόγεια πλείονα ἔθνη, τό τε τῶν Ἀρατρίων καὶ <Ἀ>ραχουσ<ί>ων, καὶ Γανδαραίων, καὶ τῆς Προκλ<α>ΐδος, ἐν οἷς ἡ Βουκέφαλος Ἀλεξάνδρεια. Aratrioi correspond to Sanskrit Āraṭṭas, from where excellent horses are exported: see *Arthaśāstra* 2.30.29. Baudhāyana, *Śrautasūtra* 18.13.1 mentions Āraṭṭas together with Gāndhāras, Sauvīras, Karaskaras, and Kaliṅgas.

21 *Arthaśāstra* 2.24.5: *ṣoḍaśa.droṇaṃ jāṅgalānāṃ varṣa.pramāṇam, adhyardham ānūpānāṃ deśa. vāpānām, ardha.trayodaśa^aśmakānām, trayoviṃśatir avantīnām, amitam apara.antānāṃ haimanyānāṃ ca, kulyā.āvāpānāṃ ca kālataḥ*. "The amount of rainfall in dry regions is 16 Droṇas and in wet regions, one and a half times that—regions where sowing is carried out according to the zone. The amount of rainfall in the Aśmaka region is 13 and a half Droṇas; in the Avanti region,

in *Arthaśāstra* 2.20.41-42, that the shadows are absent at noon in the month of Āṣāḍha and increase for six months before decreasing for the other six months pertain to a location along the Tropic of Cancer, near which Ujjayinī lies.[22] Therefore, if *Arthaśāstra* Book 2 and *Arthaśāstra* Book 7 were written by two different authors,[23] they did not come from different regions of India.

In the eyes of the author of the *Periplus*, Dachinabades did not designate a road but a vast region south of the Narmadā. The development of the Dakṣiṇāpatha concept depended in part on the ramifications of the regional road system and in part on the self-representations of the Sātavāhana rulers, who sometimes styled themselves as king(s) of Ṛṣika, Aśmaka, Mūlaka, Surāṣṭra, Kukura, Aparānta, Anūpa, Vidarbha, Ākara, and Avanti, and sometimes as "Lords of Dakṣiṇāpatha" (*Dakṣiṇāpathapati* or *Dakṣiṇāpatheśvara*).[24] Herein lies another difference with Uttarāpatha: no Indian ruler has ever claimed to be "Lord of Uttarāpatha." On the contrary, in several epigraphic and literary texts, Uttarāpatha refers to northern powers that had been terrorised, embattled, or conquered by the eulogised king.[25] Unanchored to any particular region, the term *Uttarāpatha* was used to evoke any place of northern otherness, whereas Dakṣiṇāpatha was the proudly claimed home of the Sātavāhana.

23 Droṇas; and in the Aparānta region, as also in the snowy regions, an unlimited amount—unlimited in terms of time also in lands where sowing is carried out with irrigation" (transl. by P. Olivelle). The low rainfall suggests the western Deccan along the Southward Road as the location of Aśmaka; Avanti is the Ujjayinī region; Aparānta designates the Konkan coast; Haimanya is Himālaya. For Aśmaka, Aparānta, and Avanti as parts of the dominion of Gautamīputra Śrī Sātakarṇi, see below n. 24.

22 *Arthaśāstra* 2.20.41-42: *āṣāḍhe māsi naṣṭac.chāyo madhya.ahno bhavati // ataḥ paraṃ śrāvaṇa.ādīnāṃ ṣaṇ.māsānāṃ dvy.aṅgula.uttarā māgha.ādīnāṃ dvy.aṅgula.avarā chāyā iti //* "In the month of Āṣāḍha (June–July), the shadow disappears at midday. Thereafter, the shadow increases by two *aṅgula* a month during the six months beginning with Śrāvaṇa (July–August), and decreases by two *aṅgula* a month during the six months beginning with Māgha (January–February)" (transl. by P. Olivelle). See Willis 2009, 23–35; Olivelle 2013, 37. The latitude of Ujjayinī is fixed at 22°30' in Āryabhaṭa, *Āryabhaṭīya* 4.14.

23 Trautmann 1971, 114–122. On the compositional history, chronology, and authorship of the work, see Olivelle 2013, 6–38 and bibliography cited therein.

24 *Dakhinā[patha]pa[tino]* in Lüders 1912, 1112 = Mirashi 1981, n. 3 = Tsukamoto 1996, Nanaghat 1, l.2; *Dakhiṇapa]thesaro* in Lüders 1912, 1123 = Mirashi 1981, n. 18 = Tsukamoto 1996, Nasik 4, l.11, dated at the nineteenth year of Vāsiṣṭhīputra Śrī Puḷumavi; in the same inscription (l.2), Gautamīputra Śrī Sātakarṇi is labeled *asika-asaka-muḷaka-suraṭha-kukurāparaṃta-anupa-vidabhākarāvantirāja;* see Quagliotti 1982, 77–81.

25 The texts are reviewed by Neelis 2011, 191–192.

Commodities

The *Arthaśāstra* provides a list of high-value commodities imported from the Himālayan route and Dakṣiṇāpatha: "In the case of a land route also, 'Better than Dakṣiṇāpatha is the Himālayan route, with merchandise of greater value consisting of elephants, horses, perfumes, ivory, antelope skins, silver, and gold,' say the teachers. 'No,' says Kauṭilya. 'The same merchandise with the exception of blankets, antelope skin, and horses, and also merchandise consisting of conch shells, diamonds, gems, pearls, and gold is more abundant in Dakṣiṇāpatha.'"[26] (transl. P. Olivelle, with modifications)

Some of the commodities listed also appear among the items exported from Barygaza to Egypt at the time of the *Periplus*: "From these places are exported: nard, costus, bdellium, ivory, onyx, …, lykion, clothing of all kinds (Chinese and mallow included), yarn, long pepper, and items brought here from the trading centres."[27]

Among the goods travelling along the Himālayan route, the entry *danta* (ivory) in the *Arthaśāstra* corresponds to that ἐλέφας in the *Periplus,* whereas *gandha* (perfume) certainly includes nard, costus, and bdellium.[28] As for the commodities specifically coming from Dakṣiṇāpatha, the tag *maṇi* (precious stone), which certainly includes onyx,[29] is paired with *vajra* (diamonds) and *muktā* (pearls).[30] In contrast, the *Periplus* lists diamonds, pearls, all kinds of transparent gems, and jacinth as commodities available not in Barygaza but in the Limyrike trading centres.[31] The discrepancy is striking but, perhaps, not inexplicable. As extremely high-value and easily transported commodities, items such as pearls, gemstones, and diamonds would likely be traded in the most thriving trading centres, rather than the nearest. As a result, their main markets may have changed over time due to external circumstances. At the time of the

26 *Arthaśāstra* 7.12.22–24: *sthalapathe'pi "haimavato dakṣiṇāpathācchreyān, hastyaśvagandhadantāji narūpyasuvarṇapaṇyāḥ sāravattarāḥ" ityācāryāḥ // neti kauṭilyaḥ // kambalaajināśvapaṇyavarjāḥ śa ṅkhavajramaṇimuktāsuvarṇapaṇyāś ca prabhūtatarā dakṣiṇāpathe.//*

27 Peripl. M. Rubr. 49: φέρεται δὲ ἀπὸ τῶν τόπων νάρδος, κόστος, βδέλλα, ἐλέφας, ὀνυχίνη λιθία καὶ †σμύρνα καὶ λύκιον καὶ ὀθόνιον παντοῖον καὶ Σηρικὸν καὶ μολόχινον καὶ νῆμα καὶ πέπερ<ι> μακρὸν καὶ τὰ ἀπὸ τῶν ἐμπορίων φερόμενα.

28 Peripl. M. Rubr. 48. It is uncertain whether *gandha* includes also lykion and long pepper.

29 Peripl. M. Rubr. 51: κατάγεται […] εἰς τὴν Βαρύγαζαν ἀπὸ μὲν Παιθάνων ὀνυχίνη λιθία πλείστη. Onyx's plentiful production in Paithana and easy availability in Barygaza are emphasized also in consideration of Roman fondness for high-quality cameos. The production of cameos during the Julio-Claudian period stands out both for its quality and quantity (Megow 1987).

30 Several adjectives distinguishing the types of pearls in *Arthaśāstra* 2.11.2 suggest an origin from the Gulf of Mannar or the Cūṛṇī River in Kerala: see De Romanis 1982/7, 189–190; Olivelle 2020, 33–34. For the pearl fisheries at Kor̲kai, see *Akanānūru* 130, 8–11; 201, 1–7; *Maturaikkañci* 135–138. It is difficult to pinpoint the origins of the diamonds in *Arthaśāstra* 2.11.37: see Olivelle 2020, 35.

31 Peripl. M. Rubr. 56. At Pattanam, unfinished gemstones and cameos have been found (Cherian and Menon 2014, 73–75).

Periplus, pearl and gemstone traders may have been attracted to the Limyrike trading centres because the Western merchants operating there were much better funded than their colleagues in Barygaza. The pearls and diamonds traded along Dakṣiṇāpatha at the time of the *Artaśāstra* were probably intended primarily for Indian buyers.

Understandably, the list of goods in the *Periplus* does not include elephants, horses, blankets, and skins, which are mentioned in the *Arthaśāstra* as goods of the Himālayan Road;[32] nor are conch shells (*śaṅkha*) explicitly mentioned among the goods from the Southward Road.[33] Given their ubiquity and relatively low value, it comes as no surprise that the *Arthaśāstra* omits any mention of Indian cotton, mallow textiles, and yarn. The author of the *Periplus* emphasises the importance of cotton cultivation in Ariake and points out the large quantities of textiles coming from urban centres such as Minnagara (in Ariake) and Tagara (in Dachinabades).[34] Additional evidence for cotton cultivation, production, and trade comes in the form of the taxes in cotton (*kapāsa*) paid in the Sarvatobhadra district (Chandankheda) in the thirtieth year of Sātakaṇṇi,[35] the perpetual loans granted to a guild of weavers (*kolīkanikāya*) from Govardhana (Nasik),[36] and finds of Indian cotton in the port town of Berenike, in Egypt.[37] Although the *Periplus* list includes Chinese silk (ὀθόνιον — Σηρικὸν) among the goods available at Barygaza, and "China cloth coming from China" appears in a passage on textiles in *Arthaśāstra*'s Book 2,[38] Chinese silk is conspicuously absent from the goods of the Himālayan route in *Arthaśāstra*'s Book 7.

As a major hub for maritime trade, Barygaza also had "items brought (t)here from (other) trading centres" available.[39] The *Periplus* is alluding here not so much to imports from the local trade centres of the Konkan coast as to imports from the Arab–Persian Gulf and Limyrike.[40] The fact that these items are not explicitly mentioned in the list

32 The provenances of elephants and horses are specified at *Arthaśāstra* 2.2.15–16 and 2.30.29, respectively (see Olivelle 2020, 41–42). While horses come all from northwestern regions, only elephants of the lowest quality come from regions (*Pañcanada*) along the Himālayan Road. The *Periplus* lists 'Chinese' skins (Σιρικὰ δέρματα) among the commodities available at Barbarikon (Peripl. M. Rubr. 39).

33 They may have been among the merchandise from the coastal parts traded in Tagara; see Peripl. M. Rubr. 51: […] καί τινα ἄλλα τοπικῶς ἐκεῖ προχωροῦντα φορτία τῶν παραθαλασσίων μερῶν.

34 Peripl. M. Rubr. 41; 51.

35 Falk 2009, 198–200. As noted by Falk, the date of the inscription recommends the identification of king *sātakaṃṇi* with Nagānika's husband, the only Sātakarṇi who, according to the *Purāṇa,* reigned for (more than) thirty years.

36 Lüders 1912, no. 1133 = Mirashi 1981, n. 38 = Tsukamoto 1996, Nasik 12, l.2. See Ray 2018, 302–303.

37 Sidebotham 2011, 243–244; Wild and Wild 2018.

38 *Arthaśāstra* 2.11.114: *tayā kauśeyaṃ cīnapaṭṭāśca cīnabhūmijā vyākhyātāḥ*.

39 Peripl. M. Rubr. 49, quoted above n. 27.

40 The items imported from the Arab-Persian Gulf are specified at Peripl. M. Rubr. 36: εἰσφέρεται δὲ ἀπὸ ἑκατέρων τῶν ἐμπορίων εἵς τε Βαρύγαζαν καὶ εἰς Ἀραβίαν πινικὸν πολὺ μὲν χεῖρον δὲ τοῦ

of the goods imported into Egypt suggests that their availability in Barygaza was more limited and their prices higher than in the trading centres of the regions of production.

In addition to items for the Egyptian markets, the Western merchants trading in Barygaza could buy commodities to be exchanged while calling at the northeastern African *emporia* on the return journey: grain, rice, ghee, sesame oil, and sugar to be bartered in the trading centres along the Somali coast;[41] Indian iron, steel, and lac dye to be traded in Adulis.[42] Finally, copper, teakwood, beams, yards, and logs of sissoo and ebony (materials for the shipbuilding industry?) were also imported from Barygaza to the *emporia* of the Arab–Persian Gulf.[43]

The *Periplus* list of Western commodities sent to Barygaza includes wine (from Italy, Laodicea in Syria, and Arabia), metals (copper, tin, and lead), coral, chrysolite (peridot?), clothing, multicoloured girdles one cubit wide, styrax, yellow sweet clover, raw glass, realgar, sulphide of antimony, gold and silver *denarii* (which commanded a profitable exchange with local currency), and unguent, although inexpensive and in limited quantity.[44] A separate list itemizes the commodities that were then loaded (as gifts?) for the king: expensive silverware, musicians, beautiful girls for concubinage, excellent wine, valuable simple clothing, and superior unguent.[45]

Ἰνδικοῦ καὶ πορφύρα καὶ ἱματισμὸς ἐντόπιος καὶ οἶνος καὶ φοῖνιξ πολὺς καὶ χρυσὸς καὶ σώματα. "Both ports of trade [sc. Apologos and Omana] export to Barygaza and Arabia pearls in quantity but inferior to the Indian; purple cloth; native clothing; wine; dates in quantity; gold; slaves" (transl. By L. Casson). Trade with Suppara, Kalliena and Semylla is implied by their classification as 'local trading centres' (Peripl. M. Rubr. 52–53), but the goods exchanged are not specified. Nor are the commodities exchanged between Ariake and Muziris (Peripl. M. Rubr. 54).

41 Peripl. M. Rubr. 14: ἐξαρτίζεται δὲ συνήθως καὶ ἀπὸ τῶν ἔσω τόπων τῆς Ἀριακῆς καὶ Βαρυγάζων εἰς τὰ αὐτὰ τὰ τοῦ πέρα<ν> ἐμπόρια γένη προχωροῦντα ἀπὸ τῶν τόπων, σῖτος καὶ ὄρυζα καὶ βούτυρον καὶ ἔλαιον σησάμινον καὶ ὀθόνιον, ἥ τε μοναχὴ[ν] καὶ ἡ σαγματογήνη, καὶ περιζώματα καὶ μέλι τὸ καλάμινον τὸ λεγόμενον σάκχαρι. At Peripl. M. Rubr. 41, India is said to be a great producer of grain, rice, sesame oil, ghee, and cotton.

42 Peripl. M. Rubr. 6: ὁμοίως δὲ καὶ ἀπὸ τῶν ἔσω τόπων τῆς Ἀριακῆς σίδηρος Ἰνδικὸς καὶ στόμωμα καὶ ὀθόνιον Ἰνδικὸν τὸ πλατύτερον ἡ λεγομένη μοναχὴ καὶ σαγματογῆναι καὶ περιζώματα καὶ γαυνάκαι καὶ μολόχινα καὶ σινδόναι ὀλίγαι καὶ λάκκος χρωμάτινος. The entry "clothing of all kinds" at Peripl. M. Rubr. 49 was probably comprehensive of μοναχὴ, σαγματογῆναι, περιζώματα, γαυνάκαι, μολόχινα, and σινδόναι, which therefore were exported to Egypt as well.

43 Peripl. M. Rubr. 36: ἐξαρτίζεται δὲ εἰς αὐτὴν συνήθως, ἀπὸ μὲν Βαρυγάζων εἰς ἀμφότερα ταῦτα τῆς Περσίδος ἐμπόρια πλοῖα μεγάλα χαλκοῦ καὶ ξύλων σαγαλίνων καὶ δοκῶν καὶ κεράτων καὶ φαλάγγων σησαμίνων καὶ ἐβενίνων.

44 Peripl. M. Rubr. 49: προχωρεῖ δὲ εἰς τὸ ἐμπόριον οἶνος προηγουμένως Ἰταλικὸς καὶ Λαοδικηνὸς καὶ Ἀραβικὸς καὶ χαλκὸς καὶ κασσίτερος καὶ μόλυβος, κοράλλιον καὶ χρυσόλιθον, ἱματισμὸς ἁπλοῦς καὶ νόθος παντοῖος, πολύμιται ζῶναι πηχυαῖαι, στύραξ, μελίλωτον, ὕελος ἀργή, σανδαράκη, στῖμι, δηνάριον χρυσοῦν καὶ ἀργυροῦν, ἔχον ἀλλαγὴν καὶ ἐπικέρδειάν τινα πρὸς τὸ ἐντόπιον νόμισμα, μύρον οὐ βαρύτιμον οὐδὲ πολύ.

45 Ibid.: τῷ δὲ βασιλεῖ κατ᾽ ἐκείνους τοὺς καιροὺς εἰσφερόμενα βαρύτιμα ἀργυρώματα καὶ μουσικὰ καὶ παρθένοι εὐειδεῖς πρὸς παλλακείαν καὶ διάφορος οἶνος καὶ ἱματισμὸς ἁπλοῦς πολυτελὴς καὶ

Most items exported from Egypt to Barygaza are also found among the goods exported from Egypt to Barbarikon, Limyrike, or both. Among the commodities exported to all three trading centres is money. However, in the lists of Barbarikon and Limyrike, the author uses the generic term *χρῆμα/χρήματα (money)*; in the list of Barygaza, he refers explicitly to *aurei and denarii*, which can be exchanged at some profit for local currency (δηνάριον χρυσοῦν καὶ ἀργυροῦν, ἔχον ἀλλαγὴν καὶ ἐπικέρδειάν τινα πρὸς τὸ ἐντόπιον νόμισμα).[46]

Coins

At the time of the *Periplus*, the export of Roman coins was a part of Roman commerce with almost every trading centre on the *Erythrà Thálassa*.[47] Moreover, the hoards found in India show that the practice was not limited to the first century CE. The phenomenon has been seen either as a routine course of action to acquire foreign goods[48] or else as a temporary and exceptional consequence of adjustments in the Roman monetary system. According to the latter view, while in other periods trade would have been conducted without coins, after Nero's (or Vespasian's or Trajan's) reform, older and heavier *denarii* and *aurei* would have been exported to offset the loss caused by the devaluation of the new issues.[49]

This approach, especially advocated by D. MacDowall, postulates a rigid chronology for the export of certain types. In particular, the pre-64 CE Julio-Claudian–*denarii* and *aurei* (which, in terms of value, represent about sixty-six percent of all the Roman coins from Augustus to Caracalla found in India) would all have been exported after Nero's reform, whereas Republican *denarii* would have been exported later, only after Trajan's reform (100 CE).

In arguing for his theory, MacDowall makes some good points. For example, he is certainly correct in pointing out that the absence of a large number of shared die links invalidates Bolin's theory that Roman merchants were supplied with coins

μύρον ἔξοχον. Similar appendixes of commodities to be exported "for the king (and the *tyrannos*)" are at Peripl. M. Rubr. 6 (Adulis); 24 (Muza); 28 (Cane).

46 Peripl. M. Rubr. 49, quote above n. 44. It is worth noting the contrast between the importation of aurei from Egypt and the importation of raw gold from the Persian Gulf (Peripl. M. Rubr. 36, quoted above, n. 40). Of all the goods listed, only coral is mentioned in the *Arthaśāstra* as a precious western (*alakandaka,* "Alexandrian") commodity (*Arthaśāstra* 2.11.42).

47 Apart from Barbarikon, Barygaza, and Limyrike, export of money is recorded (or hinted at) in the *emporia* of Adulis, Malao, Mundu, Mosyllon, the Emporion of the Aromata, Opone, Muza, Cane, and Coromandel Coast (Peripl. M. Rubr. 6; 8–10; 12–13; 24; 28).

48 E.g., Cobb 2018, 269–271.

49 MacDowall 1991, 1996, and 2002; Howgego 1995, 104.

directly from the mint.[50] MacDowall is also correct in asserting that Roman coins were carefully selected before export, and in concluding that the marked preference for certain coin types (the Augustan CL CAESARES and the Tiberian PONTIF MAXIM), as well as the absence of post-64 CE *denarii*, shows that the metallic content was a decisive factor in determining which coins were to be exported. Most importantly, it can be positively demonstrated that some coins issued long before Nero were exported only after his reform. A Vespasian countermark on an Augustan *denarius* from the Budinathan hoard (nearly 1,400 *denarii* of Augustus and Tiberius) shows that this coin—minted between 2 BCE and 14 CE—was indeed exported to India only after 69 CE.[51] It is also possible, but not certain, that the nine Republican *denarii* from the Eyyal hoard, buried together with twelve *aurei* Tiberius to Trajan and fifty-one Julio-Claudian *denarii*, were exported after Trajan's reform, as MacDowall suggests.

Still, none of these finds and conjectures proves that it was the monetary reforms of Nero and Trajan that triggered the export of Roman coins to India. The Augustan *denarius* from the Budinathan hoard was definitely exported *after* Nero's monetary reform, but not only *because* of it. MacDowall's assumption that Roman coins were exported only after major monetary reforms (with the implication that no coin was exported before 64 CE) is at odds with famous passages in Pliny and Tacitus, which we have no reason to take as anachronistic projections, showing that the export of Roman coins preceded Nero's reform.[52] And even if the *Periplus* was indeed written between 64 and 70 CE (which is far from certain), it is difficult to imagine the flow of coins it describes replacing a supposedly decades-long coinless trade.

To understand the selection process of the Roman coins sent to India, we have to consider how Indian Ocean commodities were marketed within the Roman Empire. The loan agreement of the Muziris papyrus makes it clear that Indian cargoes were mostly sold in Alexandria. From there, they were redistributed all around the Mediterranean, but especially to Puteoli, the drop-off point for goods destined for the western part of the Roman Empire. It is, therefore, clear that *aurei* and *denarii* destined for India were selected from the *aurei* and *denarii* circulating in Alexandria, which, in turn, was fed primarily by the *aurei* and *denarii* circulating in central Italy. Since the price of Indian commodities rose exponentially as they moved from India to Alexandria and from Alexandria to Puteoli, the money sent to India each year represented only a fraction of the annual profits of the Alexandrian merchants and an even smaller fraction of the annual profits of the Puteoli merchants. Therefore, the CL CAESARES and PONTIF MAXIM *denarii* and *aurei* were preferred for

50 Bolin 1958, 73.
51 Berghaus 1988, 126.
52 Plin. *NH* 6.85; Tac. *Ann.* 3.53.

export, at first because they were the newest and heaviest *denarii* available, then eventually because, in addition to being the heaviest, they had become familiar to Indian traders. As a result, these coins were stockpiled by the elites who financed the India trade well before 64 CE (they are very rare in the small hoards found in the Vesuvian area) and continued to be exported for as long as they were available. The monetary gains made by Alexandrian merchants exceeded the sums they sent to India to purchase Indian commodities, so it is not surprising that a *denarius* minted between 2 BCE and 14 CE could wait several decades before being exported from Alexandria to Muziris.

Roman coins meant different things in different Indian Ocean trading centres, not so much because the flow was quantitatively uneven[53] but because each trading centre presented a distinctive economic context. In Adulis, for example, the coins were used to pay foreign middlemen who lived there, while the local population used pieces of brass as currency (ἀντὶ νομίσματος).[54] As for India, Pausanias claims that, according to merchants who sailed there, the Indians exchanged goods for Greek wares and knew nothing of money (νόμισμα δὲ οὐκ ἐπίστασθαι).[55] These two assertions by Pausanias should be handled cautiously. While the statement that the Indians gave goods in exchange for Greek wares may be correct, the claim that they knew nothing of money is certainly inaccurate when extended to the whole of India.

Literary and archaeological evidence abundantly proves that money was known in several first-century-CE Indian trading centres, and Roman coins were certainly used also (not only, but also) as money. For the southern part of the subcontinent, for example, the *Periplus* remarks that the money exported from Egypt circulated in the Coromandel Coast; since the Coromandel Coast was not usually visited by western ships, it follows that the Roman coins were brought there by Indian traders.[56]

The familiarity with money is particularly evident in Barygaza, where Roman coins merged into a complex monetary circulation system. The *Arthaśāstra* passage quoted above includes silver coinage (*rūpya*) and (raw?) gold (*suvarṇa*) among the goods coming via the Himālayan Road, and (raw?) gold (*suvarṇa*) among the goods coming from the Southward Road. This asymmetry accounts for the abundant circulation of

53 The δηνάριον ὀλίγον exported to Adulis and the δηνάριον οὐ πολύ, καὶ χρυσοῦν δὲ καὶ ἀργυροῦν exported to Malao (Peripl. M. Rubr. 6; 8) were probably only insignificant fractions of the χρήματα πλεῖστα exported to South India.

54 Peripl. M. Rubr. 6: ὠρόχαλκος, ᾧ χρῶνται πρὸς κόσμον καὶ εἰς συγκοπὴν ἀντὶ νομίσματος.

55 Paus. 3.12.4: οἱ δὲ ἐς τὴν Ἰνδικὴν ἐσπλέοντες φορτίων φασὶν Ἑλληνικῶν τοὺς Ἰνδοὺς ἀγώγιμα ἄλλα ἀνταλλάσσεσθαι, νόμισμα δὲ οὐκ ἐπίστασθαι, καὶ ταῦτα χρυσοῦ τε ἀφθόνου καὶ χαλκοῦ παρόντος σφίσι.

56 Peripl. M. Rubr. 60: προχωρεῖ δὲ εἰς τοὺς τόπους τούτους πάντα τὰ εἰς τὴν Λιμυρικὴν ἐργαζόμενα, καὶ σχεδὸν εἰς αὐτοὺς καταντᾷ τό τε χρῆμα τὸ ἀπ᾽ Αἰγύπτου φερόμενον τῷ παντὶ χρόνῳ κα<ὶ> τὰ πλεῖστα γένη πάντων τῶν ἀπὸ Λιμυρικῆς φερομένων <καὶ> διὰ ταύτης τῆς παραλίας ἐπιχορηγουμένων.

Indo-Greek silver drachmas in the regions of north India (confirmed by the *Periplus*, which attests to the circulation of the old drachmas of Apollodotus and Menander in Barygaza[57]) and the absence, or at least the rarity, of the same silver coinage along the Southward Road.

The drachmas of Nahapāna closely followed the Indo-Greek models. They were of the same weight standard and, like them, bore the king's portrait and a legend in Greek script on the obverse. In all likelihood, they had the same nominal value.[58] One difference does deserve to be noted. While the reverse legends of the bilingual Indo-Greek coins use only the Kharoṣṭhī script (most often) or the Brāhmī script (very rarely), the reverse legends of the drachmas of Nahapāna always repeat the same words in both Kharoṣṭhī and Brāhmī. In turn, the use of the double alphabet in the Western Kṣatrapa silver coin reverse legends contrasts the bilingual legends (Prakrit on the obverse and Tamil on the reverse, both in Brāhmī script) found on silver Sātavāhana coins.[59] The two scripts on the reverse of the Western Kṣatrapa coins reflect the bidirectional nature of the Western Kṣatrapa trade network—towards both the Himālayan and the Southward Roads; the use of two languages on Sātavāhana issues shows that their circulation encompassed the entire Dakṣiṇāpatha, from the south bank of the Narmadā to the Bay of Bengal.

As mentioned above, ships from Egypt brought raw copper, tin, and lead—all metals that were used by Nahapāna for low-value coinage.[60] They also carried Roman *aurei* and *denarii*, which were primarily intended to pay for local wares, but at Barygaza they could also be exchanged for local currency (ἐντόπιον νόμισμα) at some profit: δηνάριον χρυσοῦν καὶ ἀργυροῦν, ἔχον ἀλλαγὴν καὶ ἐπικέρδειάν τινα πρὸς τὸ ἐντόπιον νόμισμα. The hypothesis that the local currency exchanged for *aurei* and *denarii* was the small change of Nahapāna is inconsistent with the import from Egypt of copper, tin, and lead; but the alternative hypothesis that it was the silver drachma—either Indo-Greek or of Nahapāna—makes no sense either. Why would Indian traders give away at a loss a currency that was the backbone of the Western Kṣatrapa monetary system?

The curious formulation of the Periplus may be clarified by an inscription engraved in a magnificent *vihāra* in the Pandav Leni near Nasik. Situated near an important centre in the Godāvarī valley, some 200 km up the river from Paithana, the capital

57 Peripl. M. Rubr. 47.

58 The weight standard of the Indo-Greek *drachma* is estimated at 2.45 grams (Hoover 2013, lxxx). The extant drachmas of Nahapāna weigh from 1.9 to 2.3 grams (Fishman 2013, 7).

59 Mahadevan 2003, 199-205; Ollett 2017, 43.

60 Peripl. M. Rubr. 49. The coins of Nahapāna are in silver, copper, copper-lead alloy, potin, and lead (Jha and Rajgor 1994, 86–109).

of the Sātavāhana kingdom, the Buddhist monastery was dedicated by Nahapāna's son-in-law Uṣavadāta in Nahapāna's year 42.[61]

Although the absolute chronology of Nahapāna's reign cannot be more precisely determined than that of the *Periplus*, its relative chronology makes it clear that the gap between the Nasik inscription and the writing of the *Periplus* cannot be more than eighteen years. In fact, as S. Bhandare has pointed out, Nahapāna's overstrikes on the coins of Satavastres and Gautamīputra Śiva Sātakarṇi show that the beginning of the latter's reign preceded the end of the former's reign, whereas the overstrikes on Nahapāna's coins show that different parts of his reign preceded the end of the reigns of Gautamīputra Śiva Sātakarṇi and Gautamīputra Śrī Sātakarṇi. In other words, (a part of) the reign of Nahapāna overlapped with (parts of) the reigns of both Gautamīputra Śiva Sātakarṇi and his successor Gautamīputra Śrī Sātakarṇi.[62]

Furthermore, S. Bandhare has convincingly argued that the Saraganos the Elder mentioned in the *Periplus* should be identified as Gautamīputra Śiva Sātakarṇi, probably a uterine elder brother of Gautamīputra Śrī Sātakarṇi.[63] We can therefore infer that when the *Periplus* was written, sometime between 39/40 and 69/70 CE, Nahapāna was still king, but Saraganos the Elder (Gautamīputra Śiva Sātakarṇi) had been succeeded by Gautamīputra Śrī Sātakarṇi. Since the monastery was dedicated in Nahapāna's year 42, but before Gautamīputra Śrī Sātakarṇi defeated Uṣavadāta and conquered Nasik in Sātakarṇi's year 18,[64] we can conclude that both the *Periplus* and the monastery date from the period between 39/40 and 69/70 CE and that they are separated by less than eighteen years.

One of the inscriptions on the veranda of the *vihāra* recalls, in its first part, the endowments made by Uṣavadāta for the benefits of the hosts of the newly dedicated monastery in Nahapāna's year 42. In what must be an addition in Nahapāna's year 45, the text recalls a remarkable donation to Hindu gods and Brāhmaṇa: "Again, the gift given by him [sc. by Uṣavadāta] formerly in the year 41 [sc. by king Nahapāna], on the fifteenth day of Kārttika, was actually delivered to the holy gods and Brāhmaṇa on the fifteenth day (?) of the year 45: a capital of 2,000 *suvarṇa,* which makes out, as one *suvarṇa* is worth thirty-five (*kārṣāpaṇa*), seventy thousand (70,000) *kārṣāpaṇa*."[65]

61 Nagaraju 1981, 266-268; Nasik is Νασίκα in Ptol., *Geog.* 7.1.63.

62 Bhandare 2006.

63 Bhandare 2006. The elder Saraganos is mentioned in Peripl. M. Rubr. 52.

64 Lüders 1912, 1125 = Mirashi 1981, n. 11 = Tsukamoto 1996, Nasik 2.

65 Lüders 1912, no. 1133 = Mirashi 1981, no. 38 = Tsukamoto 1996, Nasik 12, ll. 4–6: *bhūyo nena dataṃ vase 41 kātikaśudhe panarasa puvāka vase 45 panarasa niyutaṃ bhagavatāṃ devānaṃ brāhmaṇāṃca karṣāpaṇasahasrāṇi satari 70,000 paṃcatriśaka suvarṇa kṛtā dina suvarṇasahasraṇaṃ mūlyaṃ phalakavāre caritratoti*. Senart's translation (1905/1906, 83) suggests that 70,000 *kārṣāpaṇa* was actually given, not 2,000 *suvarṇa*. This is recommended neither by the syntax, as *dataṃ* and *niyutaṃ* refer to *dina suvarṇasahasraṇaṃ mūlyaṃ,* nor by Uṣavadāta's epithet *suvarṇadāna,* in Lüders 1912, no. 1131 = Mirashi 1981, no. 43 = Tsukamoto 1996, Nasik 10, l. 1. Interestingly, the

The added detail that each of the 2,000 (*suvarṇa*) donated to the Hindu gods and Brāhmaṇa is worth thirty-five *kārṣāpaṇa* dwarfs the earlier 3,000 *kārṣāpaṇa* donated to the Buddhist monks of Nasik. The statement confirmed the religious priorities of the ruling family for readers who were familiar with the silver currency *kārṣāpaṇa,* but not with the gold one named *suvarṇa*. Moreover, it must be noted that since the dedicant of the inscription is the son-in-law of Nahapāna, the equivalence 1 *suvarṇa* = 35 *kārṣāpaṇa* must have been the official exchange rate set by the central power. Certainly, a *suvarṇa* is a gold coin and a *kārṣāpaṇa* is a silver coin, but which ones exactly, and which gold-to-silver ratio do they imply? Opinions vary.

E. J. Rapson identified the *suvarṇa* as the Kuṣāṇa gold coin and the *kārṣāpaṇa* as a silver coin of the same weight standard as the drachmas of Apollodotus and Menander, inferring a 1:10 gold-to-silver ratio.[66] For D. R. Bhandarkar, the *suvarṇa* and the *kārṣāpaṇa* were indigenous coins of eighty and thirty-two *rattis*, respectively, positing a gold-to-silver ratio of 1:14.[67] A. S. Altekar interpreted the *suvarṇa* and the *kārṣāpaṇa* as the Kuṣāṇa gold coin and the Nahapāna drachma, respectively, and deduced a gold-to-silver ratio of 1:10.[68] D. W. MacDowall took the *suvarṇa* to be the Roman *aureus* and the *kārṣāpaṇa* the Nahapāna drachma, also concluding that the gold-to-silver ratio was 1:10.[69]

In my view, any interpretation which derives from the Nasik inscription an unequivocal gold-to-silver ratio of 1:10 must also acknowledge the inconsistency with the report in the *Periplus* that Roman *aurei* were exchanged at some profit for local currency at Barygaza. With such a ratio, Roman merchants would never have been able to exchange their gold coins for local silver coins at a profit. They would have been better off just staying home and exchanging *aurei* for pre-64 CE *denarii*. It is no coincidence that the scholars who inferred a 1:10 gold-to-silver ratio and then tried to establish a link between the Nasik inscription and the *Periplus* ended up twisting the meaning of the *Periplus* passage. Altekar, who was the first to realise that the Nasik equivalence had to be reconciled with the information provided by the Greek author, surmised that Roman silver coins could be profitably exchanged for Indian

connection between Barygaza's trade and Nahapāna's religious devotion is emphasised by the Āvaśyaka tradition, which preserves the memory of a conflict between a king Sātavāhana, who resided in Pratiṣṭhāna and was powerful because of his army, and Nahapāna, who resided in Bhṛgukaccha and was powerful because of his treasury. Nahapāna was eventually defeated because he squandered his financial resources on building temples, stupas, ponds, and tanks (Balbir 1993, 60; Ollett 2017, 53 n. 32).

66 Rapson 1908, clxxxiv–clxxxv.

67 Bhandarkar 1921, 191–192.

68 Altekar 1940, 4–5.

69 MacDowall 1996, 92; 2003, 43–44.

gold, even though the text clearly says ἐντόπιον νόμισμα (local currency).[70] MacDowall postulated that only silver *denarii* were exchanged. Roman merchants would have made their profit by exchanging pre-64 CE silver *denarii* struck at the 1:12 gold-to-silver ratio for Nahapāna drachmas issued at the 1:10 ratio.[71] It is difficult to see how a different gold-to-silver ratio would have affected the exchange of silver for silver. In any case, the text says δηνάριον χρυσοῦν καὶ ἀργυροῦν—so both *aurei* and *denarii* were exchanged for local currency. Finally, M. Dutta's gold-to-silver ratio of 1:13 is based on an *aureus* of post-64 CE weight standard (hardly exported to India during Nahapāna's reign) and a drachma of Nahapāna "theoretically" weighing forty-two grains (2.72 grams).[72]

Since the *suvarṇa* can hardly be anything other than the Roman *aureus* of pre-64 standard—the only contemporary gold coin that Uṣavadāta could donate by the thousands[73]—the crucial question is how to interpret the unit of account, *kārṣāpaṇa*. The identification with the drachma of Nahapāna is certainly supported by the large hoard found at Jogalthembi (just twenty kilometres or so from the Pandav Leni of Nasik),[74] but it cannot refer to it *alone*. The theory that a Roman *aureus* was exchanged for thirty-five Nahapāna drachmas is inconsistent with the information in the *Periplus* that *both aurei* and *denarii* were exported and exchanged for local currency at a profit in Barygaza. Exchanging an *aureus* for thirty-five drachmas of Nahapāna would not be profitable for Western merchants, if they could exchange it within the Roman Empire for twenty-five pre-64 CE *denarii*.

On the other hand, the same unit of account, appears in Nāganikā's Nāṇeghāṭ inscription, which records Sātakarṇi's sacrificial fees of 24,400 (plus 6,001 for the attendant), 14,000, and 10,000 *kārṣāpaṇa*. Moreover, it appears again in a Kanheri inscription from the sixteenth year of Gautamīputra Śrīyajña Sātakarṇi (late second century CE), which commemorates a donation of 200 *kārṣāpaṇa* by the merchant Apareṇu.[75]

The correspondence between the unit of account mentioned in the inscriptions and the silver drachmas has been understood in different ways. Rapson postulated that the *kārṣāpaṇas* in the inscriptions always referred to the hemi-drachmas of the

70 Altekar 1940, 4. Schoff's translation (Schoff 1912, 42), to which Altekar refers, runs as "gold and silver coin, on which there is a profit when exchanged for the money of the country."

71 MacDowall 1996, 92; 2003, 43–44; followed by Nappo 2017, 573.

72 Dutta 1990, 222.

73 De Romanis 2006, 70. As we now know, the gold coins of the first known Kuṣāṇa ruler, Vima Kadphises, were minted several decades after the end of Nahapāna's reign. Bopearachchi 2006; 2008, 3–56; Falk 2014.

74 It included ca.13,270 drachmas of Nahapāna, ca. 9,270 of which with Gautamīputra Śrī Sātakarṇi's overstrikes: Scott 1908; Shastri 1995.

75 Gokhale 1991, n. 25, 75–76. A donation of 800 *kāhāpaṇa* is recorded also in an undated inscription of Kanaganahalli; see Nakanishi and von Hinüber 2014, 85.

Greco-Indian princes Apollodotus and Menander.[76] I. K. Sarma has suggested that the Sātavāhana drachma was actually an *ardha-kārṣāpaṇa*—(half-*kārṣāpaṇa*), so that the 200 *kārṣāpaṇa* donated by Apareṇu would correspond to 400 Sātavāhana silver drachmas.[77] Neither view is consistent with the equation set in the Nasik inscription. If the *kārṣāpaṇa* in the Nasik inscription were only Nahapāna drachmas, it is difficult to see how the Roman merchants could profitably exchange one *aureus* for thirty-five *kārṣāpaṇa*. If, on the other hand, a Nahapāna drachma was an *ardha-kārṣāpaṇa,* then the gold-to-silver ratio of 1:20 would make the Nahapāna drachma a severely undervalued currency. Even if the unit of account referred to a theoretical punch-marked coin weighing about 3.4 grams, a 2.2/2.3-gram drachma should have been worth at least two thirds of a *kārṣāpaṇa*.

The persistence of the term *kārṣāpaṇa* as a unit of account over time is all the more remarkable when one considers that the drachmas of Indo-Greek standard (2.3 grams) first joined and then gradually replaced the original *kārṣāpaṇa* (silver punch-marked coins of 3.4 grams). In the Aï-Khanoum treasury, the deposit of different types of silver currency— each seemingly with its own value—was recorded in the mid-second century BCE, with entries distinguishing not only between drachmas and *kasapana* but also between *kasapana* from different geographical areas, such as *kasapana taxaena* and *kasapana nandena*.[78] In contrast, in the northwestern Deccan of the first century CE, the replacement of punch-marked coins by drachmas was not accompanied by a replacement of the old unit of account (*kārṣāpaṇa*) by a new one (*dramma*). The most likely explanation for this stability is that the drachmas of the Indian standard (Indo-Greek, Indo-Scythian, and of Nahapāna) were considered *kārṣāpaṇa* with an inflated face value.[79]

The *kārṣāpaṇa* paid as fees for the Vedic sacrifices recorded in the Nāṇeghaṭ inscription must have been silver punch-marked coins.[80] It is uncertain how many years separate these sacrifices from the beginning of Nahapāna's reign,[81] but it is very likely that the punch-marked coins were still in circulation in the Deccan in the

76 Rapson 1908: clxxxiv–clxxxv.

77 Sarma 1980: 60.

78 Rapin and Grenet 1983, nos. 4a.; 4b; 4c; 5; 7; 8d; Lerner 2011: 111–112 argues unconvincingly that drachmas, *taxaena* and *kasapana taxaena* were equivalent in value: see, rightly, Holt 2012, 168–169. Furthermore, it seems unlikely that both *taxaena* and *kasapana taxaena* were Indo-Greek drachmas. Apollodotus' and Menander's coins are identified as δραχμαί in Peripl. M. Rubr. 47.

79 Hoover 2013, lxxx.

80 Bhandare 1999, 54; *contra* Dutta 1990, 219.

81 The Sātakarṇi eulogized in the Nāṇeghaṭ inscription is probably the one who reigned for fifty years according to the *Purāṇas;* see Pargiter 1913, 39. His reign is dated 12 BCE – 44 CE by Mitra Shastri 1999, 35; 88–42 BCE by Ollett 2017, 189.

mid-first century CE.[82] The simultaneous circulation of worn punch-marked coins and newer but lighter Indian drachmas—both with the official nominal value of one *kārṣāpaṇa*—solves the riddle of the Nasik inscription. The par value of punch-marked coins and Nahapāna drachmas explains why the *aureus* was officially valued at thirty-five *kārṣāpaṇa*, why Western merchants could profitably exchange their *aurei* and *denarii* for local currency, and why Indian merchants agreed to a disadvantageous exchange. Nahapāna set an exchange rate that favoured his drachmas against both punch-marked coins and Roman currency; Western merchants profitably exchanged their *denarii* and *aurei* against undervalued punch-marked coins; and Indian traders agreed to that because exchanging a punch-marked coin with a Nahapāna drachma of 2.3 grams would have been even more damaging.[83]

It is worth repeating: the *kārṣāpaṇa* in the Nāganikā inscription (first century BCE?) referred to punch-marked coins, and the *kārṣāpaṇa* of the Apareṇu inscription (late second century CE) referred to Sātavāhana drachmas. The *kārṣāpaṇa* in the Uṣavadāta inscription referred to *both* old punch-marked coins (since only by exchanging one *aureus* for thirty-five punch-marked coins could the Western merchants have made some profit) and drachmas (since the nominal value of the Nahapāna drachmas, which circulated abundantly in Nasik, must have been one *kārṣāpaṇa*).

What the combined data of the *Periplus*, the Nasik inscription, and the Jogalthembi hoard suggest is that Nahapāna gave his drachmas the same nominal value as the old, worn, but still heavier *kārṣāpaṇa*. In turn, this explains why the Indian traders were ready to exchange their ἐντόπιον νόμισμα "local currency" (and by these words only punch-marked coins were denoted) at a loss, not only for gold *aurei* but also for silver *denarii*.

If the punch-marked coins and the drachmas of Nahapāna had the same nominal value—that is, if the Nahapāna drachmas were overvalued relative to the punch-marked coins—then the dynamics of Gresham's Law ("bad money drives out good") would have provided a very compelling incentive for Indian merchants to use their

82 Bhandare 1999, 55: "The silver punch-marked coins […] continued to be in circulation as seen from the often-encountered groups of extremely worn punch-marked coins. But as their condition worsened, they must have been subjected to a discount, thereby gradually discouraging their use and pushing them out of the circulation."

83 The maximum weight of the circulating punch-marked coins may be inferred from the hoards that were deposited in the region, probably earlier than the reign of Nahapāna. The roughly eighty-seven percent of 2,029 silver punch-marked coins from the Barwani hoard (reportedly, of 3,450 specimens) weighed between 3.5 and 3.2 grams; only ca. 2.5 percent weighed 3.6 grams; ca. 10.5 percent less than 3.1 (Gupta 1992, 14). Of the thirty-five punch-marked coins found at Kasrawad, thirty weighed between 3.5 and 3.1 grams (Diskalkar 1949, 146–153; Errington 2003, 108). In the Iyyal hoard (*terminus post quem* 98 CE), the heaviest of the thirty-four punch-marked coins weighs 2.73 grams, four specimens weigh between 2.5 and 2.2 grams, and the other twenty-nine less than 2.2 grams (Unnithan 1963, 22–28; Gupta 1965).

punch-marked coins in the least harmful way. Exchanging them for Roman coins was less detrimental than exchanging them for Nahapāna drachmas.

In conclusion, three possible factors may have encouraged Indian traders to exchange their currency for Roman coinage in such a way as to generate some profit for the Roman merchants: a gold-to-silver ratio that was more favourable to gold in India than in the Roman Empire; the equal nominal value given to punch-marked coins and drachmas, which devalued the former; and finally, the good reputation that Roman coinage had in India.[84] In what proportion these three factors contributed to the phenomenon alluded to in the *Periplus* is difficult to say. It is easier to point to three possible consequences of the process:

1) Elsewhere in the Indian subcontinent, punch-marked coins were still being hoarded at relatively late periods. They appear along with Kuṣāna coins in the Mir Zakah and Taxila hoards; with Indo-Greek coins in the Kangra, Thatta, and Bairath hoards; and with Roman coins in the south, in the hoards from Mambalam (Chennai), Pennar, Tondamanathan, Kondapur, Nasthullapur, Weepagandla, and Eyyal.[85] In contrast, the punch-marked coins are absent from the large hoards of the Western Kṣatrapa kingdom: none were found in the hoards of Gogha (possibly ca. 5,000 Indo-Greek and Nahapāna silver coins) or Jogalthembi (ca. 13,270 drachmas of Nahapāna).[86] It seems that, by the time these two hoards were deposited, most punch-marked coins had been driven out of the western Deccan.
2) A Tiberian *denarius* found in the Woodham Mortimer (Essex, UK) hoard has an isotopic signature that suggests an Indian origin for its silver.[87] The *denarius* (a *RIC* I² 95, no. 30 type) cannot be dated more precisely within the reign of Tiberius, but several details on its reverse (legs of an ornamented chair; a single line below; a female figure holding a sceptre) occur in specimens whose obverse often depicts a very old emperor,[88] suggesting that it dates from the last years of his reign. If the silver of the Woodham Mortimer

84 In the years of Claudius, the *denarii* exported by the Roman merchants were admired by the Indians for being "equal in weight, although the various figures on them showed that they had been coined by several people" (Plin. *NH* 6.85). Obviously, the old worn pieces were not among them. Equally admired were the select (ἐκλεκτά) *solidi* exported to Taprobane in the sixth century CE: Cosm. Indic. 11.19. On the ancient Indian art of evaluating coins (*rūpasutta,* "science of coinage"), see De Romanis 1988, 31–37. The popularity of Tiberius' coins is also attested by the imitations, in India and in South East Asia, of the image on the reverse of Tiberius' PONTIF MAXIM type (Borell 2014, 7–43).

85 Gupta and Hardaker 2014, 63; Suresh 2004, 163; 167; 169–170.

86 For the Gogha hoard, see Deyell 1984, 115–127; for the Jogalthembi hoard, see above n. 74.

87 Butcher and Ponting 2014, 176–177; 187; 199.

88 Mattingly 1923, cxxx; Sutherland 1987, 219–220; 224.

denarius did come from India, it may have been imported from Barygaza in the form of local currency and used to pay customs duties in Egypt. If silver punch-marked coins did contribute to the issue of *denarii* in the last years of Tiberius, then the import of Indian currency may not have been insignificant during the time between the last years of Tiberius and the writing of the *Periplus*—an interval that may have ranged from a few years up to several decades. Of course, such an unusual source of silver in a period not too far removed from Curtius Rufus' *ornamenta triumphalia* would seem to support the desperate Roman search for silver to mint.[89]

3) The few Roman coins found within or near the borders of Nahapāna's kingdom are much later than the first century CE.[90] Warmington, Turner, and McDowall have suggested that Roman *denarii* exported at the time of the *Periplus* were melted down to make Nahapāna's silver coins.[91] However, this hypothesis is difficult to reconcile with the *Periplus* account of Roman coins being exchanged for local currency at a profit. An alternative suggestion is that *denarii* and *aurei* were used by Indian traders from Barygaza for their own trade in the subcontinent. For example, the Augustan and Tiberian *denarii* and *aurei* found at Adam, the Julio-Claudian *denarii* found at Akkenpalle (more than 1,500, from Augustus to Nero, but mostly Augustan and Tiberian), and other Roman coins found in Telangana, Andhra Pradesh, Tamil Nadu, and Kerala may have entered India via Barygaza.[92]

89 Tac. *Ann.* 11.20.

90 Two *aurei,* one of Marcus Aurelius from Nagdhara and another of Septimius Severus from Waghoda (Turner 1984, 69; 85).

91 Warmington 1928, 290; Turner 1984 [non vidi]; MacDowall 1991, 151.

92 Trade relationships between Ariake and Dakṣiṇāpatha: Peripl. M. Rubr. 51; between Ariake and Limyrike: Peripl. M. Rubr. 54.

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The Arsacid Center of Trade
Charax Spasinou, Capital of Mesene

Stefan R. Hauser

Connectivity, the flow of goods, and the movement of people and objects have become major topics in ancient studies in recent years. The growing interest in precursors of modern globalization have led to an increased awareness of the strong interconnectivity of ancient trade networks. Nevertheless, regardless of these new theoretical concepts, the general approach to and perception of agents and spheres of interaction between the Mediterranean and Eastern Asia in the first centuries CE still, to a large extent, follows traditional paths and prejudices. Based on a select group of ancient sources, mostly from the Roman Empire,[1] and basic assumptions deeply rooted in conventional views on the gradual importance of ancient states and cultures, highlighting the Roman Empire on the one hand and the Chinese on the other, the downplaying or outright neglect of those huge landmasses and empires in between prevails. In the field of ancient history, East–West trade is still conceptualized and described either as land-based exchange between Rome and China or as maritime trade between Rome and India, mainly via Roman Egypt. In either case, the regions in between have been and are mostly still only superficially considered. This approach is particularly obvious in the case of the Arsacid Empire, which basically covered the entire region from the upper Euphrates in the West to eastern Iran from the mid-second century BCE onwards until the 220s CE. This contribution hopes to offer some incentives to reconsider the traditional views.

1 More recently, Roman sources are increasingly supplemented by references to a limited group of Chinese reports on travels towards the west. These sources present their own problems, particularly concerning the interpretation of Chinese place names for western regions; cf. already Grosso 1966; Raschke 1978, 645.

Hauser, Stefan R.: The Arsacid Center of Trade: Charax Spasinou, Capital of Mesene, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 145–173. DOI: https://doi.org/10.17885/heiup.1582.c22726

Trade and the Arsacid Empire

The land-based connection between Rome and China is usually referred to as the "Silk Road," a term which seems less and less to refer to the partly romantic notions of its inventor Richthofen and instead affirms Chinese political and economic ambitions. But the concept of the "Silk Road" invites scholars to concentrate on imperial China and the Roman Empire as start- and end-points of purposeful down-the-line trade. The approach not only reduces the complexities of trade to a simplistic narrative of intentional connections between a resource-producer community of luxury goods (silk) and the consumers at the other end[2] but also creates a situation wherein the areas in between, not least the Arsacid Empire, are by and large omitted in descriptions of Roman eastern trade contacts and appear as areas to be traversed.[3] This mindset unfavorably combines with a serious dearth of sources. Summarizing trade in the Arsacid Empire and current scholarship's opinion, Hartmann recently stated: "Der Fernhandel von China und Indien in die Mittelmeerregion lief zwar teilweise durch den Machtbereich der Arsakiden, Parther waren aber als Fernhändler offenbar nicht oder nur in geringem Maß an seiner Abwicklung beteiligt."[4] Such a position mirrors the existing written sources as well as prejudices concerning the interested parties, but those generalizations are based on very limited, partial sources. The approach, as such, disregards the possible interests of all those who might have been actively involved in this trade. It reduces the people and states between China and Rome to mute bystanders and their territories to tiresome, time- and energy-consuming natural and human obstacles.[5] In studies on ancient trade, traditional or recent, more general

2 This perspective finds appreciation within Rome-centered ancient history as well as in China; cf. Liu 2010.

3 A telling recent example is Craig 2018, 2, who describes the "Parthian" Empire together with the Kushan Empire as one of two "powerful administrations" in between Han China and Rome in his introduction, just to neglect them thereafter. They only appear again as "groups in the center of the Silk Roads network, including the Parthian and Kushan Empires, various nomadic confederations and other regional intermediaries, that effectively connected the eastern and western Eurasian worlds together during this First Silk Roads Era" (2018, 148). Interesting in this context is the importance correctly assigned to Sogdians, who find much more interest than the "mute" Arsacids, cf. de la Vaissière 2005.

4 Hartmann 2018, 456; cf. his material-rich discussion, 456–463.

5 This is not the place for an extended discussion of the sources usually applied in discussions on trade across Arsacid territory, e.g., by Hartmann 2018; Gregoratti 2019; Taasob 2022. However, it is important to note that the main source referred to in the context of overland trade through the Arsacid Empire is the so-called "Parthian Stations" by Isidor of Charax, which, in fact, reveals a complete misunderstanding of that text's purpose and value. The text consists of two very different parts. Only the first part describes in some detail an actual route between Zeugma and Seleucia, i.e., from the border between the Roman and Arsacid Empires on the Euphrates to the former Seleucid capital on the Tigris. The second part, which concerns regions east of Seleucia,

or more specialized, an Arsacid interest in this trade—except for taxes—is, thus, rarely acknowledged. The current state of knowledge is correctly summarized by Craig as follows: "Almost nothing concrete is known about road tolls or taxes exacted from merchants active within Parthia, nor whether merchants received protection from Parthian authorities in exchange for any taxes paid."[6] A possible active participation of the inhabitants of this empire in the exchange of goods finds no further discussion so far.

If we look at the alternative major trade network, the maritime trade between Rome and India, the problems of sources and prejudices concerning the Arsacid Empire's participation remain largely the same. Roman trade with India has created considerable interest for a long time, ever since the British rule over India and instigated by finds of Roman coins and pottery.[7] The field gained additional momentum with the emergence of Indian Ocean Studies, which, parallel to Hordon's and Purcell's

follows no particular "route" anymore. Instead, it only lists major (politico-)geographical units, thereby roughly following the direction from west to east before turning south, i.e., adhering to the usual Roman-period system of geographical descriptions of "Persia"; cf. Hauser 2022b, 166. It becomes increasingly rare for the text to mention distances (i.e., the defining aspect of route descriptions), let alone directions or topography. For the most part, it mentions the name of a geographical unit, a rough estimate of some length without explaining to what this refers, and the name(s) of one or several major cities within this region plus a very small, rather arbitrary number of nameless villages. It should be obvious that the information that there are two named cities and five unnamed villages within an area of several hundred kilometers in extent (measured between unnamed points and unexplained directions) offers no serious orientation. Whether this second half of the manuscript that we know as "Parthian Stations" represents remnants or excerpts of a larger book by Isidor, the *Periegesis tes Parthias* (Hartmann 2017, 93–95; Hartmann 2018, 446; Hauser 2017, 129–131), is inconsequential in this context. The existing text is neither an itinerary of practical use, whether for merchants (as is often assumed; summarized by Hartmann 2018 with extensive bibliography) or for military purposes (Millar 1998; Kramer 2003), nor does it provide a list of political provinces. The second part of the Σταθμοὶ Παρθικοί has its main value in providing interesting insights into geographical learning in a probably Mesopotamian context (Hartmann 2017, 116; Hauser 2017, 165). For a detailed discussion of author and work, cf. Hartmann 2017 and Hauser 2017. For an attempt to identify all the places and reconstruct the exact route taken between Zeugma and Seleucia, cf. Hauser 2017.

6 Craig 2018, 171. Taasob 2022, 438, assumes that "parallel to earlier examples, the royal administration (either centrally or locally) was likely in charge of the waystations," but without further evidence. The situation was already aptly summarized in the classic study on Rome's Eastern trade by Raschke 1978, 642, who stated that, while custom duties might have been paid as well as tolls at major cities, the commonly held idea (quoting, e.g., Neusner, Wolski, Colledge, and Prakash) that taxes on trade "were of vital importance to the [Arsacid, SRH] royal treasury […] is a fallacy." Generally, in discussions of possible Arsacid taxes, a negative undercurrent image of undeserved income (or even hustle) unnecessarily complicating travel and multiplying prices is dominant. On the meager evidence for taxation, which simply does not allow a judgement on its extent and possible tax policies, cf. Hartmann 2018, 461–464.

7 On the large stimulus provided by Wheeler's excavations, Tomber 2008, 13–14.

description of the Mediterranean, defined the sea as a space of connectivity.[8] Indian Ocean Studies widened the view of the previous narrower study of Indian–Roman trade and considers relations, connections, and networks between the littoral of India (plus possibly Indonesia) and the African coastal areas from between Egypt in the North to Tanzania in the South.[9] For the past twenty years, research on the trade networks connecting India with Roman Egypt has certainly become one of the most energetic and splendid areas of ancient studies; but while various contributions rightfully discuss the importance of the southern coastal areas and islands off the coast of the Arabian Peninsula in trade with great success,[10] Indian Ocean Studies, whether modern or ancient, generally elides the Persian Gulf. To modern scholars, it seemed that "of all the regions involved in Indo-Roman trade, the Gulf was the most separate, both geographically and politically."[11]

For the Roman period, this omission somehow reflects the geographical coverage of the most important literary source, the *Periplus Mare Erythaeis* (PME).[12] In this important first century testimonial of an (Egyptian) Roman merchant, which provides many details about the various ports, waters, and goods traded along the coasts of India, southern Arabia and western Africa, the Persian Gulf receives a rather cursory description. Only two ports "of Persis" are mentioned within the "vast expanse."[13] Omana is described as *emporion* six runs further from the 600-stades-wide mouth of the Persian Gulf between the Asabo Mountains and Mt. Semiramis on the eastern side. And "at its very head is a legally limited port of trade called Apologos, lying near Charax Spasinu and the Euphrates River."[14] The PME further reports that the merchants of Barygaza send out "big vessels to both of Persis's ports of trade [sc. Apologos and Omana], with supplies of copper, teakwood, and beams, saplings, and logs of sissoo and ebony […] Both ports of trade export to Barygaza and Arabia pearls in quantity but inferior to the Indian; purple cloth; native clothing; wine; dates in quantity; gold; slaves."[15]

8 Hordon and Purcell 2000. For the Indian Ocean, cf. Alpers 2014; Beaujard 2012; Chew 2015; Pearson 2003; Sheriff 2010.

9 Cf. Cobb 2019; de Romanis 1997; de Saxcé 2015; Evers 2017; McLaughlin 2014; Mathew 2015; Sidebotham 2011; Tomber 2008.

10 Avancinci 2015; Nappo 2015; Speidel 2015; Strauch 2012.

11 Tomber 2008, 109.

12 Casson 1989; Seland 2010.

13 PME 35–36. It is commonly agreed that "Persian" in this context should be understood as "Parthian," i.e., Arsacid. "Parthian" and "Persian" are employed interchangeably in many Roman sources, based on the idea that the Arsacids (Parthians) ruled over the Persian territories (Hauser 2022b, 166).

14 PME 35; translation after Casson 1989, 71–73.

15 PME 36; translation after Casson 1989, 73.

The text has been frequently discussed in particular for the location of Omana.[16] What interests us here is the city of Charax Spasinou and the ἐμπόριον νόμινον Apologos, which, according to the *Periplus Mare Erythaeis,* seems to have acted as port for Charax, i.e., the capital of Mesene (cf. below). Although the *Periplus Mare Erythraeis* thus provides records for the existence of officially designated ports in the area of the mouth of the Persian Gulf, and despite the fact that ships starting from northwest India will have followed the southern coast of its Iranian territories for between 600 and 900 km, the Arsacid Empire plays no particular role in modern descriptions of trade, as it is circumvented by the direct connection between Egypt and India.[17] While limited importance in comparison to the Egyptian India-trade and possible restrictions of access to these waters might explain the silence of Roman sources, it does not suffice to explain the limited interest in ancient studies.[18]

Trade in the Persian Gulf in Perspective

The diminution of possible Arsacid interests in trade and the reduction of its territories and people to a passive role in the exchange with India in the literature of ancient history is even more astonishing because Ancient Near Eastern studies, whether Assyriology or archaeology, have collected and published ample evidence for longstanding traditions of intense trade between the lands of Sumer and Akkad with Maggan (i.e., Oman) and Meluhha (i.e., Pakistan/Northern India), with its first acme in the third and early second millennia BCE.[19] Archaeological finds of semiprecious stones from

16 On the identification of Omana with ed-Dur, cf. Potts 1988, 155 (positive); Potts 1990b, 306–310 (positive); Haerinck 1998 (undecided); Salles 2012, 309–310 (agreeing with Potts). Gregoratti 2019, 56 locates Om(m)ana at what he calls the "site-complex of ed-Dur-Mleiha-Dibba," referring to sites which are more than 50 km apart.

17 Craig 2018, 214 adds that maritime trade served the purpose of "eliminating many of the fees and tariffs being charged along the land-based routes by middlemen such as the Parthians." Cf. also the political aspect mentioned by Salles 2012, 323 (cf. note 11).

18 Sidebotham 2011, 237 correctly remarks: "There seems to have been very little direct commercial contact between the Persian Gulf and the northern Red Sea ports throughout the Roman era." Following Salles 2012, 323, this was probably due to restrictions in access to the Persian Gulf waters: "À l'époque de Périple, ces derniers étaient les Characéniens, acteurs d'un puissant royaume qui collaborait avec une puissante cité, Palmyre: leur double tutelle semble s'être étendue sur la totalité du Golfe avec le concours des autres populations riveraines. Le segment maritime était donc «fermé» à des navigations étrangères et/ou à des marchands autres que ceux qui y naviguaient, et l'intérêt que pouvaient avoir les Romains pour ce segment ne pouvait guère se développer qu'à Barygaza ou en Inde."

19 For summaries, cf. During Caspers 1979; Potts 1990a; Franke-Vogt 1995; Possehl 1996; Possehl 2002.

Indian sources clearly demonstrate the continued exchanges with Babylonia and Assyria throughout successive periods. In addition, Potts convincingly demonstrated that the Persian Gulf coast on the Arabian side, certainly as far as Dilmun (Bahrain), was more or less continuously controlled by southern Babylonian dynasties from at least the sixteenth century BCE.[20] The integration intensified during the Achaemenid Empire, when both sides of the lower Gulf region probably even belonged to the same satrapy.[21] The imperial control and intense trade between India and the urban centers in central Babylonia via the Eyrthraean Sea continued through the Seleucid period.[22]

Therefore, it is no surprise to see a dedication of a certain Kephisodoros, "strategos of Tylos [the Greek name for Bahrain] and the Islands" for Hyspaosines, first king of Mesene, and his wife Thallassa. The inscription, which must date to the early to mid-120s BCE, establishes that the traditional political influence of southern Mesopotamia in the Gulf was maintained in the early years of the newly founded kingdom of Mesene.[23] One should assume that the same applies to the well-established trade, though it is rarely documented in written sources. On the other hand, the continued exchange is indeed evident in the archaeological excavations in ed-Dur, Mleiha, Thaj, and Failaka.[24] Proof is only rare in southern Iraq so far, due to the missing localization of the literary attested harbors of Teredon and Apologos and the only recently started exploration of Forat and Mesene's capital, Charax Spasinou.[25]

The Trade of Mesene

The existence of Persian Gulf trade in the Arsacid period is, therefore, indisputable. Problematic and controversial is its character. Central in this maritime trade are the harbors and port cities at the head of the Persian Gulf, i.e., Teredon, Apologos, Forat, and, most specifically, Charax Spasinou—center and capital of the wider region, the kingdom of Mesene/Maishan (Fig. 1).[26] If the ports of Mesene feature in modern

20 Potts 2009; cf. also the summary by Kosmin 2013.

21 On trade in the Gulf in the Achaemenid period, cf. Salles 1990; Salles 1996; Potts 2021, 525. On the satrapy Maka, most probably ancient Maggan, situated around the Oman peninsula, cf. Potts 2009, 38; Potts 2021, 521.

22 Salles 1987; Monerie 2018, 426–435.

23 An excellent discussion is Kosmin 2013.

24 For a splendid summary of the excavation results from ed-Dur and Mleiha, see Tomber 2008, 109–113; for the new excavations at Thaj, Rhomer 2019; on Failaka, Potts 1990b, 154–196.

25 Rescue excavations at Forat (Maqluba) were carried out by the Department of Antiquities of Iraq in 2019 and 2020. On Charax Spasinou, cf. below.

26 For a long time, historical and, specifically, numismatic literature preferred to use the name Characene (Charakene) for the region and described its rulers as Characenian. However, a closer

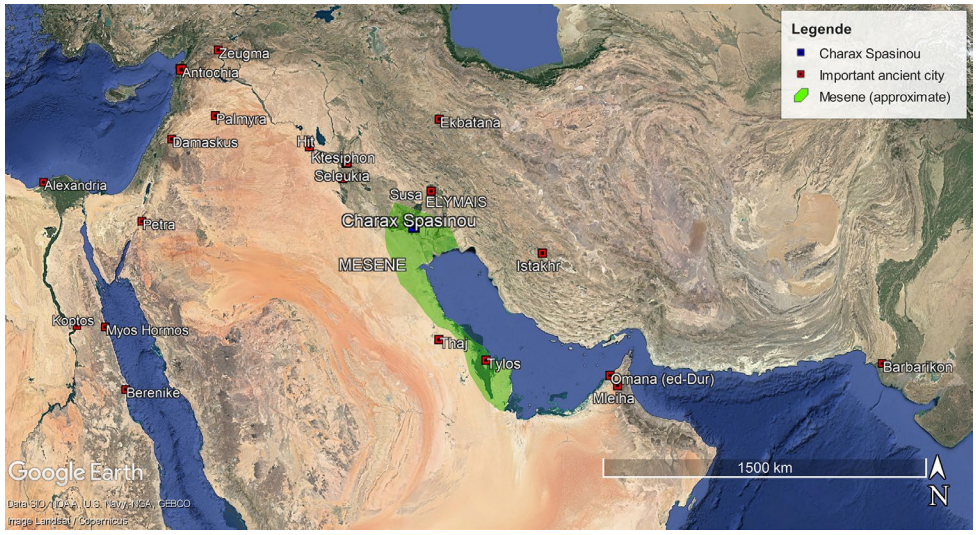

Fig. 1 General map of sites mentioned in the text centering on Mesene.

research, it is usually in connection with their role in the famous long-distance trade of Palmyra.[27]

Among the Palmyrene honorary inscriptions, thirty-nine of them originally accompanying honorary statues refer, in one way or another, to aspects of the city's trade.[28] Eighteen inscriptions testify to the presence of Palmyrene merchants in Mesene

analysis of the various sources indicates that "Characene" is used in geographical contexts only, where it refers to the hinterland (possibly the *chora*) of the city of Charax. The name Characene appears in geographical descriptions by Ptolemaios (6.3.3) and Pliny (NH. 6.136) to describe a geographical subdivision of Elymais (cf. Humbach and Ziegler 1998, 58–59; Schuol 2000, 105–106, 127). In contrast, the name Mesene or Maishan is used to refer to the wider geographical region and, more importantly, is consistently used to denote the kingdom of Hyspaosines and his successors. This applies to sources in Parthian, Middle Persian, Coptic, Hebrew, Syriac, and Arabic as well as to textual references by Roman authors in Greek and Latin. The sources are conveniently collected by Schuol 2000, 41–197. The two terms, therefore, are not interchangeable but distinct, with solely Mesene carrying political meaning.

27 For summaries of this trade, cf. Teixidor 1984; Gawlikowski 1994; Young 2001, 136–186; McLaughlin 2010, 95–102; and, most recently, Seland 2016.

28 On the meaning and use of honorary inscriptions in general, cf. Quaß 1993; Ma 2013; on honorary statues in Palmyra, Hauser 2007, 241–245 with further literature. Thirty-four trade-related inscriptions are listed in Schuol 2000. A slightly divergent list of, again, thirty-four inscriptions is provided by Gawlikowski 1994. When I refer to certain inscriptions in the following, they are only referenced to their respective CIS and PAT numbers and their number in Schuol 2000 where one can find further references.

for the period between 18/19 CE and 211 CE.[29] Two more texts mention the participation in maritime trade with Scythia, i.e., northwestern India, with ships that certainly started in Mesene.[30]

It is widely assumed that Palmyrene merchants traveled southwards generally on the Euphrates and upwards from Mesene mainly along the Euphrates, using water crafts or pack animals according to the actual conditions, mostly transferring their commodities from the barges or rafts to camels at or near the city of Hit to continue their voyage to Palmyra as caravans.[31] Alternatively, they might have used the Tigris river and the connecting Nahr Malka with barges to reach the Euphrates before they arrived at Hit.[32] The Palmyrene honorary inscriptions will have mostly concerned incidents on the final part of the route, but, as they are usually unspecific about the exact help offered by the honoree, several might also be related to administrative matters, e.g., tax, on the way from the harbor to the oasis of Tadmor. It is commonly agreed upon that once the caravans reached Palmyra, the goods were further transported to their destined markets in the Mediterranean. [33]

29 The earliest evidence comes from a text reporting a mission of the Palmyrene Alexandros on behalf of Germanicus to the king of Maishan (PAT 1584; Schuol 2000, 47–48, no. III.1.b.1). Since he is known as a merchant from another inscription, it is assumed that trade relations with Charax Spasinou already existed; cf. Schuol 2000, 48. Charax Spasinou is mentioned in fourteen inscriptions between 50/1 (or 70/1) CE—the date of this inscription (PAT 1584; Schuol 2000, 51, no. III.1.b.4) is unfortunately not certain—and 193 CE (PAT 294; Schuol 2000, 86–87, no. III.1.b.31). Two inscriptions (Schuol 2000, 64–66, no. III.1.b.14 and 15) with dates of 140 and 142 CE refer to Forat. In the latest inscription, PAT 294 = Schuol 2000, 86–87, no. III.1.b.31, dated to 211 CE, two cities are mentioned, but only Vologesias can be read. Since the other site was most certainly further south, it will have been Charax or Forat.

30 Both inscriptions honor Marcus Ulpius Yarḥai, son of Ḥairan, who was honored by at least seven statues between 155 and 159 CE. One of those referring to Scythia dates to 157 CE (PAT 1403; Schuol 2000, 73–74, no. III.1.b.21). The year number of an eighth statue for Yarḥai is not preserved. A date in the 150s can be expected (Schuol 2000, 75–76, no. III.1.b.22).

31 Teixidor 1984, 23–25; Gawlikowski 1994; Schuol 2000, 383; Young 2001, 148–149; and McLaughlin 2010, 97 favor a route along the Euphrates. Earlier reconstructions noticing the important Palmyrene community in Dura Europos sometimes surmised that transshipping might have taken place there. The argument for the direct route between Hit and Palmyra is best explained in Seland 2016, 45–51. The archaeological proof for this route and the dating of the various fortresses and watchtowers in the steppe visible in our detailed analysis of satellite imagery was one aim in a project by the author on nomad–sedentary interrelations, financed by the DFG. Unfortunately, after fieldwork had become untenable in Iraq, it was also stopped in 2006 for security reasons by Syrian authorities, but cf. Hauser 2012.

32 Hartmann 2018, 451.

33 Sommer 2005, 91, based on the assumption of a decline of the trade via Egypt in the first century CE, even believes that the route via Charax and Palmyra became the primary connection between India and the Mediterranean. This seems an overinterpretation of the scale of trade on both routes; cf. Young 2001, 74–89; McLaughlin 2019, 122–123. In addition, evidence for trade (and for Roman military presence) in the Red Sea in the second and third centuries CE has been

In the reconstructions of Palmyrene trade, the harbors of Mesene appear as just one alternative, slightly less important route between India and Rome, serving the same purpose as the main shipping axis via the Egyptian harbors of Berenike and Myos Hormos.[34] Consequently, in modern scholarly literature, the only major ports of the Arsacid Empire known from ancient sources were described as serving mainly the transit of goods towards the Mediterranean, a trade considered as largely bypassing the Arsacid Empire. Again, as in the usual descriptions of the overland trade, the Arsacid Empire appears as a *quantité négligeable,* a space to be crossed with little active interest in goods, no noteworthy market, and, thus, little to no importance for the topic of ancient trade networks aside from its assumed auxiliary ports used by Roman (Palmyrene) merchants out of topographical necessity.

The Kingdom of Mesene and its Relation to the Arsacid King of Kings

The generally accepted perception of a strangely limited interest in trade on the Arsacid side is certainly the result of the common traditional prejudices about the empire.[35] This converges with the highly restricted amount of sources on Arsacid economy. In the case of the Indian Ocean trade via Charax, the absence of written sources from other places, especially from within Mesene, certainly gives the Palmyrene inscriptions disproportionately more weight than they should have.[36] Communities of merchants in foreign cities were very common in antiquity throughout the world. Wherever the source situation allows, we can see that larger ports housed numerous communities.[37]

mounting in recent years; cf. Nappo 2015; Sidebotham 2015; Sidebotham this volume; Speidel 2015. Gawlikowski 2016, on the contrary, argues that the commodities of Palmyrene trade largely remained in the Syrian market and that this route was not significant for the wider Mediterranean in comparison to the trade via Egypt.

34 For summaries, cf. Young 2001, 27–89; Tomber 2008, 57–87; McLaughlin 2010, 23–60; Sidebotham 2011.

35 Summarized in Hauser 2016, 433–436 with further literature; on western biases, i.e., Orientalism, in ancient studies in general, cf. Hauser 2001/2006.

36 Craig's claim that Isidor's "Parthian Stations describes not only the overland routes through the Parthian Empire, but also the flourishing ports of the Persian Gulf, which connected Mesopotamia with the Indian Ocean networks" (Craig 2018, 171) is baseless and outright wrong, as are many other passages in this book, since Isidor makes no reference to areas south of Seleucia.

37 On trade communities, see, e.g., Steuernagel 2004; Hauser 2007, 235–240; Terpstra 2013. Yon 2016, 348, correctly observes with respect to Muziris, but pointing to the applicability of Palmyrenes in Mesene, that "colonies of traders were permanently established in several ports of India

The contingency of particularly good preservation of Palmyrene inscriptions and the divergence in the intensity of research on Palmyra and contemporary cities in modern Iraq induce a contorted image. For good reason, we can follow the characterization provided by the princely narrator of the so-called *Hymn of the Pearl* (or *Song of the Soul*), a Syriac apocryphal text of the third century CE that became part of the Acts of the Apostle Thomas. In his description of his travels from the East via Mesene to Egypt, he reports: "I passed through the borders of Maishan, the meeting place of the merchants of the East" (18) and on his return he came back "to the great Maishan, to the haven of merchants which sits on the shore of the sea" (70–71).[38]

Nevertheless, instead of questioning the validity of the one-sided reconstruction, which basically eliminated the idea of Mesenean and Arsacid interests and agency, the assumed passiveness vis-à-vis Palmyrene and Roman interests was even promoted as result of political compliance. But to understand the argument, we have to return to Mesenean history and our sources.

As previously mentioned, the kingdom of Mesene accrued in the context of inner-Seleucid dynastic conflicts in the mid-second century BCE. Hyspaosines, satrap of the Erythraen Sea, was one of the various regional administrators who had to take sides or to become independent from the Seleucids who lost control over their eastern possessions in the 140s BCE. Hyspasosines is attested fighting in Babylonia as early as 138 BCE; in 127 BCE at the latest, he used the title "king."[39] According to a Babylonian astronomical text, he died on June 11, 124 BCE, at an advanced age.[40] Either before or after his death, his realm became incorporated into the empire of the Arsacid Mithridates I.

The subsequent history of the Mesenean kingdom is not well covered in written sources. Its list of rulers, which currently comprises twenty-four names, is, therefore, mostly based on coins, but at times interrupted and sometimes complicated by uncertain assignations. Minting in Charax started in the last years of Hyspaosines and seems to have continued for the next 350 years until the Sasanian conquest in the 220s CE. The currently known coins, starting with Hyspaosines and ending with coins assigned to a certain Maga, whose reign is tentatively dated to 195–210 CE, are

is made clear by the references to Westerners serving as middlemen between their countrymen who arrived with cargoes and local merchants."

38 Cf. Beyer 1990, 242–243, Z. 18 and 246–247 Z. 70–71 for the Syriac edition. Yon 2016, 349 n. 15 quoting the Greek version. Yon correctly remarks that "Reference here is made to the kingdom, not directly to its ports, even if Spasinou Charax itself, without being a port, may have been an *emporion*." Yon 2016, 349 also reminds us of the presence of Jewish merchants in Mesene attested by Flavius Josephus, A.J. 20.34–35.

39 These data are provided by astronomical diaries from Babylon. For a discussion of Hyspaosines' career, cf. Schuol 2000, 291–300.

40 Sachs and Hunger 1996, 282–283, no. -123A Vs. 18'. The high age is reported by Lukianos, Makrobioi 16, who assigns eighty-five years to Hyspaosines.

allotted to twenty-one different kings, but several attributions (and, thus, proof for the existence of those persons) still need confirmation.[41] Only seven of the twenty-three successors of Hyspaosines, who himself is present in a variety of Babylonian cuneiform and Roman sources, are mentioned in written sources; but these provide little more information about them than evidence for their sheer existence.[42] Given this meager set of information, most summaries of Mesenean history are highly speculative.[43]

The exact status of the kingdom of Mesene and its relation to the Arsacid empire of the King of Kings in Ktesiphon is, nevertheless, highly contested in modern scholarship. This is not only a question of limited sources and their interpretation. The various opinions largely depend on different perceptions of strength or weakness of the central government. The discussion, thus, is at the heart of general perceptions of the Arsacid Empire and has strong repercussions on the idea of Persian Gulf trade as augmented above. This can be illustrated by Gregoratti's summary statement: "Parthian influence in the Gulf area could only be realized with the cooperation of the Characenians, or by establishing an autonomous authority on the throne of Mesene. For most of the Parthian period the autonomy of the region was therefore not under discussion. It could not be otherwise. Autonomy was indispensable for Characene

41 Most kings of Mesene are solely known from their coinage. Although lists of rulers based on coins have been compiled since the early nineteenth century, a full numismatic catalogue is still missing but is in preparation by Patrick Pasmans.

42 The information outside coins can be summarized as follows: For Hyspaosines' son Apodakos, we learn from an astronomical diary that he was still a minor when his father died at eighty-five (Schuol 2000, 40, no. III.1.a.7 and 298). For Artabazos I, whose coins only cover the year 49/8 BCE, we learn from Lukian, Macrobioi XVI.16 that he became king on account of the Arsacids when he was eighty-six years old (Schuol 2000, 124, no. III.1.c.20). Abinergaos I (only attested by coins in 10/11 and 22/23 CE) is mentioned by Josephus ant. Iud. XX.22–23 as friendly host and later generous father-in-law to Izates, prince of Adiabene. In between his two coin issues, a certain Orabzes appears in a Palmyrene inscription (Schuol 2000, 48, no. III.1.b.1) who might be a king of Mesene, although this is controversial. Attambelos VII (?!), according to Cassius Dio (68.28), greeted Trajan on his so-far-successful campaign in 116 CE and paid tribute (cf. below). Meredates (c. 130–151) was removed from his throne by the King of Kings Vologases III, as detailed in a bilingual inscription (cf. below). A certain BND or Binega ("Abinergaos II?" according to modern research) is mentioned by Tabari as king of Mesene at the time of Ardashir's I conquest of the region; cf. Schuol 2000, 368. Given this small portfolio of sources, Schuol's attempt to write a history of Mesene along the various rulers is a difficult task. Consequently, in her book the various kings of Mesene only make short appearances at the beginning of each subchapter in which their coins are briefly described before she moves on to descriptions of general Arsacid policy affairs and more or less well-informed speculations about the consequences for Mesene's policies and status as independent, "semi-independent" or autonomous polity (Schuol 2000, 300–378).

43 In particular, this applies to Nodelman 1960.

to develop its trade network in the Gulf and to interact with other political entities which were active on trade routes."[44]

The status of Mesene as (semi-)autonomous has been often assumed based on the long-held negative view of the Arsacid empire as structurally inapt and weak.[45] Background to such reasoning is provided by later Arabic sources (esp. Tabari), who describe the period after Alexander as the period of minor regional kings (Arabic: *molūk al–ṭawā'ef;* Pahlavi: *kadag–xwadāy*). But the common resulting description of secessionist provincial kings and influential landowners of the "Parthian" gentry neglects the fact that Tabari specifically emphasizes that all of these regional kings paid homage to the "Ashkaniyyan in al-Mada'in," that is, the Arsacids in their capital Ctesiphon.[46] Another argument for Mesenean independence is usually seen in the production of coins by various kings,[47] but the argument falls short if we compare minting practices in the Achaemenid Empire and the minting privileges in European Middle Ages, when issuing coins could even be a duty under the terms of fiefdom.[48]

In this situation, every new source on the history of Mesene gains great weight, as was the case with the bronze statue of Herakles-Verethragna, the patron deity of Mesenean rulers, found by soldiers in Seleucia-on-the-Tigris in 1984.[49] On its legs, a bilingual inscription in Aramaic and Greek reports on the successful war waged in 462 Seleucid Era, i.e., 150/151 CE, by the Arsacid King of Kings Vologases (i.e., Vologases III) against the King of Mesene, Meredates/Mithridates.[50] This inscription

44 Gregoratti 2011, 225. It is difficult to follow the argument in its strictness. While autonomy of minor states may help to develop specific networks, the opposite effect of intensified trade exchange and increased revenue as part of a larger producing and consuming economy is certainly also a valid possibility. The other question is, of course, whether Mesene had the means to decide on its status vis-à-vis the Arsacid Empire. Gregoratti's idea rests certainly on his assumption that "since its very beginning, the Parthian kingdom was characterised by a strongly decentralised nature" (Gregoratti 2011, 210). For a different opinion, cf. the extended discussion in Hauser 2016.

45 A comparable tendency also pervades the work of Schuol, who discriminates between long phases of semi-autonomy and phases of direct Arsacid rule, which she calls "parthische Interregna"; cf. Schuol 2000, 453–461.

46 Cf. Hauser 2022b for further discussion.

47 Undecided on this question is Schuol 2000, 333, on the distribution of coins by Attambelos IV from Dura Europos to the Gulf: "ob die bis weit in das Golfgebiet reichenden Handelskontakte der Charakener Ausdruck einer eigenständigen Politik des Königreiches waren oder ob dabei in parthischem Auftrag agiert wurde, ist mittels der numismatischen Zeugnisse nicht zu entscheiden." But Schuol 2000, 368: "Von Abinergaos III. sind keine Münzen bekannt, so daß für die Charakene in dieser Zeit weder eine völlige Unabhängigkeit vom Partherreich noch – als Charakteristikum einer Teilautonomie – ein Münzprägerecht nachweisbar ist."

48 Hauser 2016, 474–475.

49 The statue is called Herakles in the Greek text and Verethragna in the Parthian version; for literature, cf. Schuol 2000, 41–42; Hauser 2022a.

50 The text has often been reproduced, e.g., with translation, cf. Schuol 2000, 41–45; Hauser 2022a, 334 n. 11.

became a central source for Mesenean and Arsacid history. According to David Potter, this text demonstrates "that the accepted reconstruction of Mesenian history (based on coins) which suggested that Mithridates was a Parthian client can no longer be accepted."[51] On the contrary, he concluded that Mesene, previous to the war, must have been independent and supported his argument with the common idea that issuing coins was the prerogative of independent rulers. Glen Bowersock combined these arguments with Cassius Dio's (68.28.4) report that Trajan on his campaign to the Persian Gulf in 116 was greeted by King Attambelos (VII) of Mesene, who remained loyal despite being forced to pay tribute.[52] He concluded that the attack on Mesene might have occurred because Mesene still had friendly relationships with Rome. He saw the missing link in the continued trade relations between Palmyra and Charax in general, and especially in the role played by Palmyrenes in the administration of Mesene. This is demonstrated by one inscription from Palmyra, dating to 131 CE, which honors a certain Yarhai,[53] son of Nebuzabad, a Palmyrene who had lived in Charax for some time and was appointed by king Meredates of Mesene to the position of satrap of Thilouana (Tylos, modern Bahrain). For Bowersock and subsequent literature, the appointment of a Palmyrene was evidence for Roman influence. Bowersock's conclusion that Mesene "was in fact a Roman client kingdom for some time in the second century AD" became generally accepted.[54]

However, the argument is far less straightforward than usually assumed. Neither the presumed Roman position of power towards the Arsacids nor the identification of Palmyrenes as advocates of Roman interests can be confirmed. Soon after his visit to Mesene, Trajan was forced by a massive uprising throughout the conquered territories to leave Mesopotamia for Roman territory in Syria. There he left Hadrian with

51 Potter 1991, 280. Followed by, e.g., Potts 1997, 97; Schuol 2000, 459.

52 Bowersock 1989, 164; Bernard 1990, 37; Potter 1991, 283.

53 The text reads: "Yarhai (son of) Nebuzabad (son of) Shalamallat (son of) Aqqadanos from Hadriana Palmyra, Satrap of the Thilouanians of Meeredates, king of Spasinou Charax. The merchants in Spasinou Charax in his honor, year 442, month Xandikos." Cf. Schuol 2000, 56–57, no. III.1.b.9. A second Palmyrene, whose name is not preserved, made career as archon of Charax according to the partly destroyed inscription (Schuol 2000, 63–64, no. III.1.b.13) which dates between 88 and 188 CE. He belonged to the family 'A'by. Another (or the same) member of this family, Yarḥibol, was honored in 138 CE for his constant support of merchants in Charax Spasinou and his mission as envoy to king Osroes/Worod of Elymais, cf. Schuol 2000, 61–63, no. III.1.b.12; PAT 1414. These are prime examples for the integration of (some) Palmyrene immigrants into Charax.

54 Quote from Young 2001, 146. The opinion is shared by Bowersock 1989, 164–167; Potter 1991, 277; Yon 2002, 104; Edwell 2008, 37; Smith 2013, 165; Gawlikowski 2016, 26. Potter 1991, 281 and Speidel 2016, 112–114, following the lead, take it a step further and suggest a general profound power difference between the Roman and Arsacid Empires, not the least to the advantage of Roman, i.e., Palmyrene, trade. But cf. Hauser 2022a, 345–346.

the army and little chance of continued leverage on Arsacid matters.[55] Moreover, the idea that Yarhai's appointment is indicative of Roman influence presupposes that the Palmyrene acted in the Romans' interest; but Yarhai belonged to the well-established Palmyrene expatriate community, which was part of the international network of merchants in Charax in which Palmyrenes were one of the various groups. As such, he was obviously well integrated into the Mesenean society. Still, examples in history abound where immigrants like Yarhai are entrusted positions in court administrations for their excellence, but often enough also because they have no particular backing outside the king's and are, therefore, reliable arbitrators. In addition, while Yarhai was a Palmyrene and Mesenean administrator, he was certainly no Roman citizen. He received his honorary statue at home, probably less retrospectively and more to positively influence his affections towards his home town and, thereby, possibly also predispose the king of Mesene's interests towards Palmyra.[56] But facilitating Palmyrene trade only indirectly converged with Roman interests and is no argument for Roman bearings in the politics of Mesene.

In fact, the inscription on the Herakles-Verethragna statue sheds a rare light on power struggle within the Arsacid family. Vologases III, who describes himself as "King of Kings" and son of Mithridates, "king" (i.e., the king of Media), waged war on Meredates, king of Mesene, son of the former King of Kings Pakoros. In other words, Vologases III attacked his close relative, most probably in a fight about the succession within the family, but not about secession or independence of one of the Arsacid provinces.[57]

Furthermore, even if the province of Mesene had the right to issue coins, this right and duty might well have been part of the status agreements from early on. As mentioned above, we know of enough examples, e.g., from medieval Europe, where the issuing of coins is delegated as part of fiefdoms; and we also know that in Achaemenid

55 The whole case is argued in detail in Hauser 2022a, 337–342. Aside from the questions of Palmyra's integration into and Palmyrenes' incentive to represent the Roman Empire outside its borders, which certainly needs discussion, we should be aware that Charax is close to 1,000 km from the Roman border in linear distance. No Roman army after Trajan came ever closer than 600 km again. How should one conceive of credible (military) threats and durable incentives for Mesene to prefer Roman *amicitia* vis-à-vis the Arsacids?

56 An exact transfer into a modern parallel might help to elucidate the weakness of the usually accepted argument. Provided only with the evidence of the renaming of the local sports stadium in Arnold Schwarzenegger's Austrian hometown, Graz, in his honor and the information that he served as governor in California at that time, a parallel argumentation to the one concerning Yarhai would conclude that California was, for several decades, independent from the US and instead a client to the European Union.

57 Discussed in detail in Hauser 2022a, 346–349.

and Seleucid times, several satraps had regular coin emissions, without anyone in the literature trying to argue that they must have been independent for that reason.[58]

The coins of Meredates, on the other hand, are of particular interest, as the legend on his tetradrachms of 142 CE describe him as "Meredates, son of Phokoros, King of Kings, king of Omani," which once more indicates a) the family connection of provincial and central rulers and b) the political interests of the king of Mesene in the Persian Gulf.[59] Thus, following the intervention of Vologases III, Mesene remained an integral part of the Arsacid (and later the Sasanian) Empire with its capital at Charax, which eventually was called Karkh Maishan.

The Capital of Mesene: Spasinou Charax

While the *Periplus Mare Erythaeis* mentions Apologos as port at the head of the Persian Gulf, it places the center of the region at Charax Spasinou. This city is renowned from Roman and Palmyrene sources. According to Pliny (NH 6.138), the city was originally founded as Alexandria by Alexander the Great in between the rivers Tigris and Eulaios near their confluence.[60] Pliny (NH 6.138–139) further relates that Alexander's foundation was twice destroyed by floods. It was first rebuilt by Antiochos, "the fifth king," and renamed after himself.[61] Only a few decades later, the former Seleucid governor

58 In the context of coinage as a sign of independence, we should also note that Orabzes, the successor of Meredates, who was most certainly enthroned by Vologases III, immediately started to issue his own coins.

59 This is important with respect to the political situation encountered by merchants; cf. Salles 2012, 323, on possible restrictions. Potts (2021, 519) succinctly states: "During the first millennium CE the Persian Gulf functioned as an easily navigable trade route, but the evidence of either Parthian or Sasanian political and military hegemony is sporadic at best, and evidence from the early Islamic era is meager to say the least."

60 The Eulaios has usually been equated with the modern River Karkhe. But based on the geomorphological interpretation of satellite data, the so-called K2 palaeochannel, which approaches Alexandria/Charax from the northeast, at the time probably represented both Karkhe and Karun; cf. Walstra et al. 2011; Heyvaert et al. 2013.

61 Ever since this specific Antiochos was identified as Antiochos IV by Nodelman 1960, 85, it has been assumed that the rebuilding took place in 166/165 BCE; cf. Hansman 1967, 22; Hansman 1991; Schuol 2000, 107; Campbell et al. 2018, 215. But Pliny's description is problematic, as he states: "postea restituit Antiochus quintus regum et suo nomine apellavit" (NH 6.139). The problem is, of course, that the fifth king of the Seleucid dynasty was the short-lived Seleucos III, who, according to dates provided by Babylonian chronicles, probably only ruled from December 225 to April/June 223 BCE; cf. https://www.livius.org/articles/person/seleucus-iii-keraunos/. Who, then,

of the "Satrapy of the Erythrean Sea," Hyspaosines, declared himself independent in the wake of civil war and the impending dissolution of the eastern part of the Seleucid Empire.[62] Because of the transformation of the former satrapal seat, Alexandria/Antiochia, into his capital, connected with major building efforts to prevent future flooding, the city changed its name again and became called Charax Spasinou, "the palisade" (Greek Charax = Aramaic *krk*) of Hyspaosines. As such (usually inverted as Spasinou Charax), the city appears in twelve of the Greek versions of bilingual Palmyrene inscriptions between 81 and 193 CE.[63] The inscriptions in Palmyrene Aramaic, on the other hand, refer to the site simply as *krk* or interchangeably as either krk 'spsn' [Karak Aspasina] or most often as *krk (dy) myšn* [Karak (of) Maishan].[64] The latter name is also used in later Arabic sources.[65] The name clearly points out the specific role of Charax as center and capital of the region and kingdom of Mesene/Maishan.

is Antiochos, the fifth king? Nodelman (1960, n. 20) stated "that the 'Antiochus quintus regum' who refounded the city was Antiochus IV is hardly open to doubt" but presents no argument aside from arguing that it was Antiochos IV who established Hyspaosines—a fact completely unrelated, and rather counterintuitive—and that Antiochos IV was the fifth Antiochos in the family according to Tarn, one of them never having been king. But Pliny particularly mentions that the person in question was the fifth king(!), not the fifth Antiochos, which should preclude Nodelman's proposal. Antiochos IV, on the other hand, certainly spent some time in the region in 164 BCE before he died in Elymais/Susiana. Alternatively, we could propose Antiochos III (223–187 BCE), who succeeded his brother Seleucos III and, during his rule, showed much presence in the eastern parts of his grand-grandfather's empire. According to Polybius (Histories 5.54.9–12), Antiochos III went to Seleucia after his defeat of the rebel Molon in 220 BCE and re-established Seleucid rule, not the least by appointing new *strategoi* for the provinces of Media, Susiana, and the Erythraean Sea. Some years later, in 205 BCE, Antiochos III even visited Gerrha and Tylos (Bahrain) before he sailed home to Seleucia; cf. Polybius 13.9.5. On the way, he must have passed Alexandria. With his presence in the region and his involvement in the province's organization, Antiochos III would be an apt candidate for the restoration of Alexandria/Antiochia, but this would allow the argument that Pliny either meant "the fifth king after Seleucos I" or that he excluded the briefly reigning Seleucos III from his count. Although neither suggestion is fully satisfying, an attribution of the rebuilding of the city to Antiochos III seems preferable and certainly no less probable than Nodelman's proposal of Antiochos IV.

62 Cf. Schuol 2000, 291–296.

63 For the earliest and latest examples, cf. the bilingual inscriptions Schuol 2000, no. III.1.b.5 and no. III.1.b.28 with previous literature.

64 The name of the site is preserved in eleven Palmyrene Aramaic inscriptions. It is called krk 'spsn' in Schuol 2000, no. III.1.b. 18 and no. III.1.b.24, dating to 155 and 159 CE. *krk (dy) myšn* appears in five inscriptions from the second half of the first century, in 135, 140, 155, and 159 CE; cf. Schuol 2000, no. III.1.b.5; no. III.1.b.6; no. III.1.b.11; no. III.1.b.14; and no. III.1.b.25. *krk* without any further additions appears in four inscriptions dating between 156 and 193; cf. Schuol 2000, no. III.1.b.19; no. III.1.b.20; no. III.1.b.26; and no. III.1.b.28. Obviously the names could be used interchangeably. The badly preserved Palmyrene inscription Schuol 2000, no. III.1.b.4, dated between 50/1 and 70/1 CE, refers to 'sp<s>nqrṭ.

65 Cf. Tabari I 818 and I 820, where Ardashir is credited to have built or founded Karkh Mais(h)an with the new name Astābādh Ardashīr (Bosworth 1999, 13; 16).

Although the city's importance was always conceded, it took until 1965 for John Hansman to even become interested in locating it, as part of his UCL dissertation on the ancient landscape of the wider area (1970). Studying aerial photographs, he identified long straight walls or a rampart at a place called Jebel Khayaber that matched Pliny's description of Charax rather well.[66] The remote location and lack of interest in the Arsacid period during the 1970s, the integration of the ruin in the extensive Iraqi defense lines during the Iraq–Iran War in the 1980s, and the political instability and international politics in the 1990s and 2000s prevented further explorations. Systematic archaeological work at Charax Spasinou only began in March 2016, when Jane Moon, Robert Killick, and Stuart Campbell (University of Manchester), at the invitation of the head of the State Board of Antiquities and Heritage (SBAH) in Basra, Qahtan al-Abeed, carried out a preliminary season to establish whether a more substantial research project at the long-neglected site would be advisable. This was confirmed by important results in mapping the city and geophysical prospection, which revealed the outline of a major street, nearly 30 m wide, and huge rectangular blocks of urban buildings (Figs. 2 and 3). [67]

Three field campaigns (2017–2019) greatly enlarged our knowledge of the ancient city and demonstrated its unique potential. Survey transects of 550 km in Charax and its vicinity, with more than 18,000 data points collected, allowed us to identify sixteen additional sites and define the southern and eastern limits of Charax. Intense study of drone imagery and, finally, geological coring helped us to reconstruct ancient riverbeds. In addition, over 100 ha of Charax Spasinou has been surveyed by geophysics in specific parts of the city. At selected places, evaluation trenches were excavated to check the results of the magnetic survey and to determine the depth and date of archaeological deposits in preparation of future campaigns.

As a result, we can now describe Charax as a city of nearly 7 km² adjacent to a former Tigris canal in the west. Four different phases of city planning appear in the geophysical exploration. Almost 50 ha of gridded city plan can be seen in the southern half of the site (Fig. 2 and in Fig. 3). It shows a partly residential area of blocks measuring ca. 160 × 85–90 m, which might suggest a system based on 550 × 300 Attic

66 In October 1965, he visited the place for one afternoon and, learning that the site was locally called Naishan, was positively convinced he had identified Charax (Hansman 1970).

67 Moon et al. 2016; Campbell et al. 2018. Once more I would like to express my sincere gratitude to my dear colleagues who were so kind to invite me to become their co-director in 2017. Explorations in Charax and its vicinity were subsequently supported by a three-year grant from the British Cultural Protection Fund for the long-term protection of heritage assets in the Basra province, focused on identifying and mapping archaeological sites in collaboration with SBAH. A geomorphological survey and interpretation of the geophysical survey and drone mapping were supported by a grant from the DFG. Our work was greatly facilitated by Qahtan al-Abeed, to whom we owe our gratitude. The geophysical exploration in 2016 was carried out by Jörg Fassbinder (Munich), to whom I extend my sincere thanks.

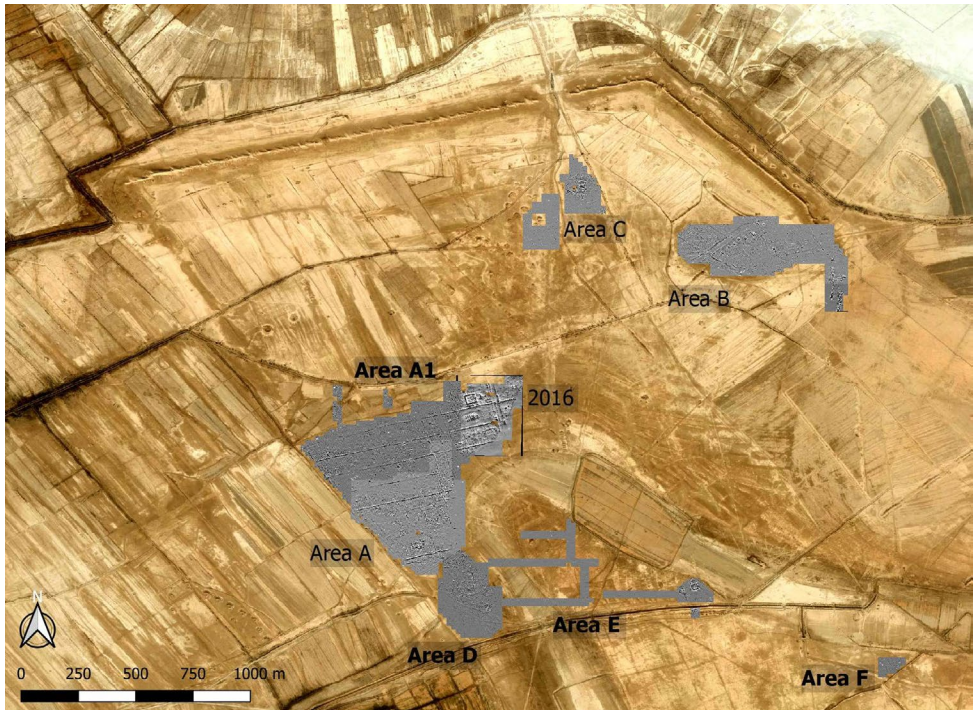

Fig. 2 Satellite image of Charax Spasinou (Jebel Khayabir) with indication of areas of geophysical research until 2019.

Ionic feet. This makes the grid one of the largest known in the ancient world.[68] Several larger buildings, some of them with impressive *peripteroi*, can be identified.

Further north, an industrial area indicated by numerous kilns with slag extends along an inner-city canal (Area B in Fig. 2). Closer to the still impressive rampart, which rises up to 7 m above the flat landscape, we located a palatial area of approximately 110 × 100 m (Area C in Fig. 2). Numerous rooms are clearly visible in drone imagery (Fig. 4). The building exhibits, e.g., a peristyle court featuring massive fluted columns made from backed brick and plaster with the channeling carried out in finest plaster work of high quality.[69] Numerous coins were found, most of them heavily corroded.

68 Cf. Campbell et al. 2018; Killick et al. 2019. At the former Seleucid capital of Seleucia-on-the-Tigris, for example, the blocks are 146.5 × 73.25 m (= 500 × 250 Attic Ionic feet) and at Antioch-on-the-Orontes in Syria 117.2 × 58.6 m (= 400 × 200 Attic Ionic feet).

69 The best comparison is the so-called "Parthian palace" at Nippur, which, in its official/ceremonial part, features the same constellation of a peristyle court and a 15 × 12 m audience hall south of it, located behind an anteroom with two columns in antis and reached by steps. This is basically the same concept as in Charax, only on a much smaller scale. On Arsacid palaces, cf. Hauser 2019.

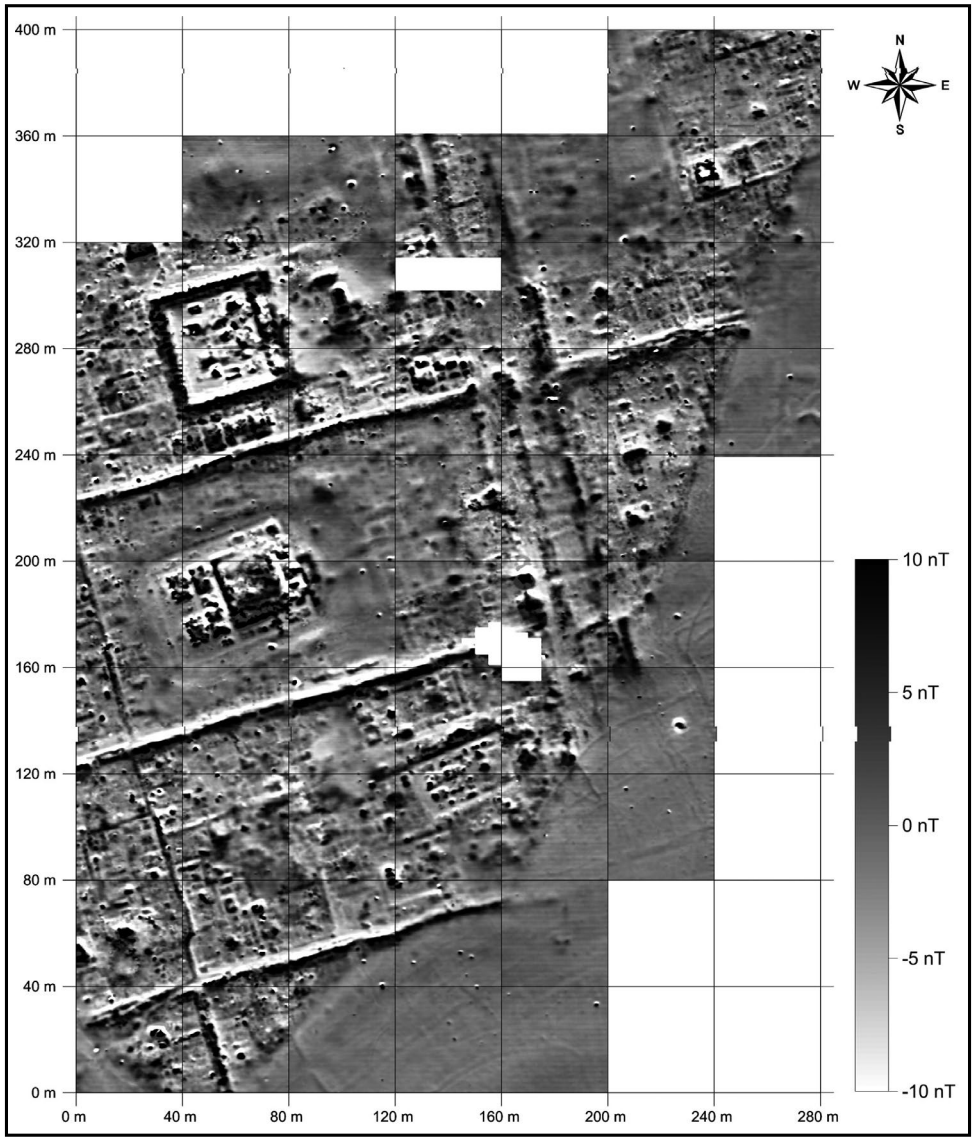

Fig. 3 Area A showing main geo-physical features in the 2016 campaign.

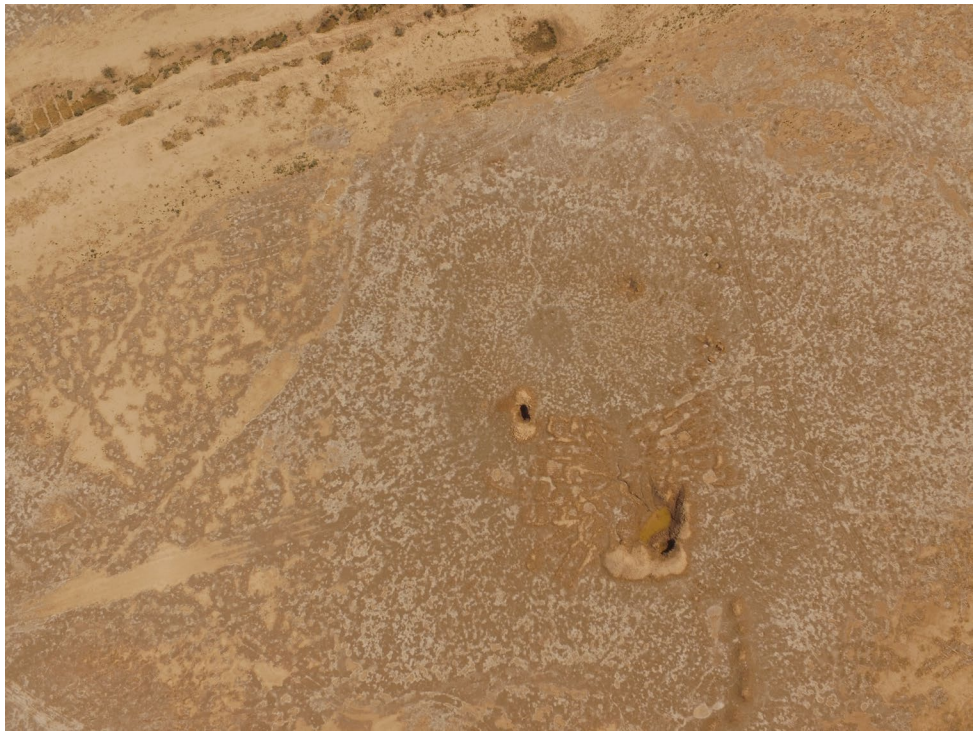

Fig. 4 Area C drone photograph.

One from the upper level of the building gives the date of 461 Seleucid Era, i.e., 149/150 CE, which provides a *terminus post quem* for the building's destruction and nicely coincides with the war between Vologases III and Mesene's king Meredates.

No clear evidence is available for the end of the city. None of the coins found on the surface is later than early Sasanian. We nevertheless learn from the acts of the various synods of the Christian "Church of the East" that bishops from Karka dĕ Maišān participated in these important gatherings until 605 CE.[70] On the other hand, the metropolite of Maishan already resided in neighboring Forat in 410, which probably indicates that Karkh Maishan had lost its position as capital of Mesene.[71] When the

70 Cf. the lists of participants for the synods of 410, 424, 484, 497, 544, 585/6, and 605 CE (Braun 1900/1975, 30; 46; 73; 86; 125; 236; 305).

71 The bishop of Prat Maishan (i.e., Forat) appears as one of six metropolites in the list of participants in the first ecclesiastical synod of the Sasanian Empire in 410, where, on invitation of the Sasanian King of Kings Yazdgerd I, the bishops of his empire formally agreed on the constitution of a united autonomous "Church of the East."

settlement ceased to exist altogether, we do not yet know.[72] Charax became forgotten and repeatedly flooded for far more than a millennium.[73]

Charax and its Role in Trade

Provided that Pliny's report on the foundation by Alexander is correct, Alexandria on the Tigris, i.e., later Charax Spasinou or Karak Meyshan, was the only other major center founded by him west of eastern Iran aside from Alexandria in Egypt. Even a preliminary comparison between these two show that their settings and roles are closely parallel. Just as Alexandria on the Nile links the Mediterranean with the Nile and the cities further upstream, Alexandria on the Tigris connects the Persian Gulf with the city centers in Babylonia and Elymais, either by the Rivers Tigris and Eulaios or via land-based routes (Fig. 1). As the common ground definition for harbors in general is their function as points of connection between water and land that allow for the embarking or debarking of people and objects (commodities), they must be approachable by various ways: from the sea, by land, and usually also by navigable rivers. The location of harbors and port cities thus depends on possible lines of distribution. Especially in flat, sandy coastal areas, the impact of tides prevents ports on the open sea and requires topographically safer areas further inland that can be reached by roads that are not permanently in danger of being flooded. At the same time, the port must be a safe place, protected as much as possible against natural disasters such as high floods, as well as against human threats such as incursions. For all these reasons, port cities are very often not on the sea itself but some distance inland, in places where it is safe to moor or anchor and that can be reached via safe, permanent overland routes. Alternatively, the harbor can be separated from the city governing its trade, as might be indicated by the PME's description of the relation between Apologos and Charax Spasinou, formerly Alexandria.[74]

Pliny (NH 6.139–140) reports that the city was originally founded only 10 *stades* from the littoral but that, because of the outstandingly quick aggradation, Iuba already located it 50 Roman miles from the shore, while contemporary Arab *legats* and "our merchants who have been there" confirm a distance of 120 Roman miles to the open

72 Hansman 1970, 81 refers to a passage in Tabari where the inhabitants of Karka greet the rebellion of Zand in 868 CE. We have found no evidence for such a late settlement so far.

73 Hansman 1970, 82, reports that locals told him the area was flooded annually until the Wadi Tharthar barrage was put in place in 1956.

74 Salles 2012, 304 correctly remarks that the *Periplus* "semble ne pas attribuer de fonction d'échanges maritimes à Spasinou Charax, et les données historiques des siècles postérieurs font plus état de caravanes arrivant à Spasinou Charax que de navires ancrés au quais de la ville (?)"

sea.[75] The latter distance concurs remarkably well with the current situation. Pliny's account in connection with the PME would thus allow for a slight change in Charax' role, from harbor to superior port and principal trading center.[76]

As such, it was the primary purpose of Charax to continue and guarantee the provision of the urban centers in central Babylonia. We should expect an enormous market for goods from India, China, or the Persian Gulf, judging by the expected surplus from the enormous growth of irrigated fields in their vicinity and the impressive population numbers provided by ancient sources.[77] According to Pliny (NH 6.122), Seleucia boasted 600,000 inhabitants; Orosius (Hist. 7.15.3) confirms a population of 400,000. In addition, we have to account for the continually growing capital Ktesiphon, which, following Strabo (16.1.16 [743]), during his time had already developed from a winter residence of the Arsacid Kings of Kings into a hugely populated city in itself, being in other parts adorned by the kings with all they needed, with merchandise, and with all necessary arts.[78] These two cities formed the equivalent to Rome not only in political but also in economic terms.[79] Large-scale irrigation systems and the growth of cities show a general economic and population trend toward the Tigris in this period, but also along the Euphrates, several large urban centers still provided major markets. Especially the former capital, Babylon, would still have had a huge population.[80]

In addition, under the prevailing circumstances of the time and the fluvial system, Charax was also the natural point of supply, with imports for the entire province of Elymais and its capital Susa. These two cities are just 160 km linear distance from each other. A route between them will have been some kilometers longer, mostly depending on bridges or detours for crossing irrigation canals, possibly stopping at

75 Pliny, NH 6.140: "nunc abesse a litore CXX legati Arabum nostrique negotiatores, qui inde venere, adfirmant." On the Tabula Peutingeriana, the site appears on three sides surrounded by water as the endpoint of a route starting in Seleucia.

76 This idea is supported by Potts 1990b, 352–353, who remarks: "It is interesting to note a characteristic of long standing in Mesopotamian commercial relations with the Gulf region. This is the existence of a principal port in southern Babylonia through which most of the contact with the Gulf region was maintained." As indirect successor to Uruk and Ur, he ascribes this function to Alexandria-on-the-Tigris. Cf. also Sidebotham 2011, 212: "At Charax the Palmyrenes had a substantial commercial presence and owned or operated merchant ships sailing in the Gulf and beyond. It was Charax that goods traveled to and from other locations in the Persian Gulf and India."

77 On the transformation of the land behind Ktesiphon, cf. Adams 1965, 61–82.

78 Strabo 16.1.16: "δυνάμει οὖν Παρθικῆ πόλις ἀντὶ κώμης ἐστὶ καὶ τὸ μέγεθος, τοσοῦτόν γε πλῆθος δεχομένη καὶ τὴν κατασκευὴν ὑπ᾽ ἐκείνων αὐτῶν κατεσκευασμένη καὶ τὰ ὤνια καὶ τὰς τέχνας προσφόρους ἐκείνοις πεπορισμένη."

79 For a summary of the cities' histories, see Hauser 2021.

80 The archaeological evidence for the Arsacid period is compiled in Hauser 1999. A population of up to 100,000 inhabitants seems possible.

other markets and to bypass the hilly area west of Susa, making it easier to approach the former Achaemenid capital from the south. In addition, the importance of this mercantile connection is also evident from the high amount of Mesenean coins with countermarks from Elymaean authorities.[81]

The agglomeration Seleucia-Ktesiphon, Babylon, and the Elymaean capital Susa must have provided tremendous opportunities as markets for products from India and beyond—a fact that has been nearly completely neglected in previous studies.[82] We should be aware that these places were the main destinations for the goods imported via Charax. This being the case, greater control of Mesene was in the interest of the Kings of Kings in Ktesiphon; and, likewise, he and the king of Mesene would have agreed on the terms of issuing money—actually of low metal value—to facilitate mercantile activity.[83]

The above discussion, therefore, suggests an understanding of Alexandria-on-the-Tigris, the later Charax Spasinou, together with Seleucia-on-the-Tigris as the newly established Seleucid and Arsacid period axis for trade in Babylonia. The foundation of Alexander fulfilled precisely the same purpose on the Tigris as Alexandria on the Nile: it served as the very place where the routes across the sea and the river connected. But while Alexandria–Charax never received the same paramount importance as its Egyptian counterpart, the ruins recently explored by a British–German team demonstrate its enormous size. In both cases, the city was planned and built on a grand scale by Alexander's successors and became a buzzing center of Hellenistic culture. In the Arsacid period, the city, now called Charax Spasinou or Karak/Karkh Maishan, might have lost some of its function as harbor but continued to be the central place for distributive trade. As a huge city in itself, it provided an attractive market, and, due to its lines of connectivity on or along the rivers, it offered splendid commercial opportunities for the various merchant communities based in the city. One of these communities came from Palmyra and used this hub for commerce between Babylonia and India to purchase objects from the Persian Gulf and those traded in the Indian Ocean, or to sell goods from the Syrian Mediterranean or even as thoroughfare for their direct involvement in trade with India. In Mesene, they met their colleagues and competitors. Some Palmyrenes even assumed positions within the administration of the kingdom, raising hopes in their fellow Palmyrenes that this might prove beneficial for their mercantile activities. The majority of the "merchants of the East" who gathered in Mesene would, nevertheless, have been active in the trade network between India and Babylonia, the epicenter of Arsacid political and economic activities.

81 Hauser 2023.

82 The exception to the rule was McLaughlin 2010, 95, who praised the role of Seleucia and Ktesiphon as important trading and consumer cities.

83 Hauser 2023, 319–320.

Summary and Perspectives

For a long time, the interests and agency of producers, consumers, and merchants in the Arsacid Empire found little consideration in ancient history. The previous discussion should have demonstrated that Mesene, and in particular its capital Charax, served as a harbor and entrance for goods into the Arsacid Empire. As such, it connected the rich urban centers of Babylonia and Elymais with the Persian Gulf and its global connections. While previous scholarship on long-distance exchange neglected the role of Arsacid dominions for general prejudices and the dearth of written sources, we should expect Mesene as a major force in international trade—it has simply been little explored. The new explorations in Alexandria-on-the-Tigris, later called Charax Spasinou or Karkh Maishan, might help to overcome this deplorable situation. Research at Charax forces us to think about prejudices in the currently-so-popular debates on proto-globalization in antiquity, which still suffer from a distinct Western, Romano-centric perspective, and reconfigure our perceptions on trade routes and markets.

The importance of Charax lies in its role as a kind of missing link in our reconstruction of ancient trade, the flow of goods, and the interconnectedness of distant regions. The opportunity to explore this center for exchange between India and the populous cities of Babylonia and Elymais will hopefully help to rebalance our perception and offer some incentive for a novel way to think about Afro-Eurasian interconnectedness.

Figure Credits

Fig. 1 Stefan R. Hauser, based on Google Earth
Fig. 2 Charax Spasinou Project, S. Campbell 2017
Fig. 3 Charax Spasinou Project, J. Fassbinder 2016
Fig. 4 Charax Spasinou Project, S. Campbell 2017

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Landscapes of Interaction(s)
The Archaeology of Borderland and Economy in Roman Mesopotamia

Rocco Palermo

Introduction

The impact of Rome at the edges of its empire varies abundantly across time and space, and this particularity generates complex scenarios, that in turn impacted on social, economic and political phenomena. Studies carried out on the German and Northern *limes* have highlighted how the imperial strategy of Rome was adapted and—in some cases—converted and modified to fit into the particular socioeconomic and cultural texture of these liminal zones.[1] Regional variability and different urbanization patterns impacted greatly on the economic landscapes of Roman borderland areas, and datasets for the Rhine *limes* or northern England have enabled historians and archaeologists to draw extremely interesting conclusions about population growth, economic impact, and settlement dynamics.[2]

As a negative counterbalance to this (relative) abundance of records, evidence from the eastern frontier of the empire is very limited and with a low degree of comparability. Survey data collected between the 1980s and the early 2000s in North Mesopotamia focused only marginally on the Roman period—there was (is?) a totally understandable major interest in the Bronze and Iron Ages—with little or no systematic data processing attached. This has inevitably resulted in a disproportionately small number of available records between the pre-classical and the classical world for a very important region for Roman political, military, and economic activities, particularly in connection with global and trans-imperial connections.[3]

1 Elton 1996; Young 2001; Whittaker 2004; Parker 2010.
2 Verhagen 2019; Franconi and Green 2019.
3 Discussion in Palermo, Ur, and de Jong 2022.

Palermo, Rocco: Landscapes of Interaction(s): The Archaeology of Borderland and Economy in Roman Mesopotamia, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 175–203. DOI: https://doi.org/10.17885/heiup.1582.c22727

In Syria, where most efforts were directed toward the construction of military architecture and infrastructure, as well as into the establishment of an urban administrative and taxation system through *coloniae,* the structures of the empire—administration, economic, and military control—were in place, and where soldiers were documented, records of *Roman* official presence (public buildings, baths, Latin inscriptions, etc.) is also documented. This is not the case for Roman Mesopotamia, where the archaeological visibility of the Roman Empire and its impact—both militarily and economically—is more nuanced and not easily discernible. For this reason, in the following pages I aim to reconsider the economic and political role of North Mesopotamia in the period between the second and the fourth centuries CE. I will explore the impact of major centers on the economic landscape of the imperial borderland, the peculiar social milieu of the communities living and exploiting the territory, and the role of the route network as a mean to increase mobility and economy, also implementing the relationship between cities and villages (including nomadic communities).

Setting the Stage: Borderlands and the Geography of Roman Mesopotamia

Borderland areas present a perfect framework for the exploration of phenomena of interaction and engagement between different groups and communities, and their relative agencies. Often, in such zones, there are establishing examples of bilateral interplays and mutual approaches. Modern scholars have discussed borderlands as areas where no major power imposes a solid political and economic dominion over the other (or others).[4] Equal processes are recognizable in several peripheral areas of the ancient world, where the elusiveness of the imperial central power gave birth to the non-mediation of the authority, which outsourced the control of such areas to local elites. Borderlands are, indeed, particular spaces of communication, cooperation, and negotiation that can take the form of military confrontation, economic and state dependence/collaboration, and religious conflicts/hybridization. In the complex panorama of the Roman Empire and its related expansion in the Near East, these specific borderland phenomena assumed a particular role, and one that needs a fuller attention. The idea itself of a *limes* in North Mesopotamia and trans-Euphratene region is challenging, and its interpretation—if any—relates to what Isaac pointedly highlighted

4 See Parker 2006, 77–104 for a detailed discussion of the topic, particularly in regard to borderlands in the greater Near East.

some decades ago.[5] He claimed that the term *limes* never indicated structures like walls, forts, and camps (e.g., Hadrian's Wall is never referred to as a *limes*), but rather, and especially from the first to the third centuries CE, it is simply employed to define a border area with no reference to military organization or physical boundaries (i.e., rivers, mountains, etc.). With the worsening of the frontier politics in the later Roman Empire and the increase of building activities to secure these borderland areas, the physical aspects of the *limes* regained a prominent role; and yet the absence of a real physical barrier and the lack of a systematic defensive system are the main features of Roman Mesopotamia. Until and after the Augustan period, the Euphrates was seen as the natural border between the Roman and the Parthian Empires. With the military advancement towards the eastern steppe under Trajan and—more substantially—in the Severan Age (late second–early third centuries CE), the physical aspect of the barrier (again, if any) became more evanescent, fluctuating in a wider buffer zone between the upper Khabur river in Syria and the western bank of the Tigris in Northern Iraq. Here, cities with long pre-Roman tradition, Aramaic-speaking communities, and non-sedentary groups shared and negotiated space among themselves. In such a complex panorama, geography and space, and especially the management of the fragile landscape of north Mesopotamia itself, thus represented key aspects for the co-existence in this area, where social and cultural overlaps occurred on a daily basis both at urban and regional level.

Before proceeding to the analysis of the economic and social landscape of the easternmost territory of the Roman Empire, it is therefore necessary to briefly set the spatial stage properly. By "Northern Mesopotamia" I mean the region currently comprising northeastern Syria, northwestern Iraq, and part of southeastern Turkey. Defining its limits is not straightforward, but it can be understood in general terms as the land located between the area east of the upper courses of the Euphrates and the Tigris rivers below the Anatolian plateau, together with the northern margins of the Syrian Desert between Syria and Iraq (Fig. 1). At certain points in the Roman period, this large area encompassed part of the province of Syria Coele, a part of the territory under the control of the kingdoms of Osrhoene and Armenia (to the west and north, respectively) and part of the kingdom of Adiabene to the East.[6] This political fragmentation probably was the result of a later *accommodation* of pre-Roman polities dominating their own territory, whose co-option—by the hands of Rome—for the control of the steppe lands beyond the Euphrates was taken care of, throughout the whole period of Roman presence, with alternate fortunes and outcomes (Fig. 1).[7] The area that will become a province under Septimius Severus is, therefore, roughly

5 Isaac 1988.
6 Marciak 2017.
7 See Millar 1993, 437–488; Edwell 2008.

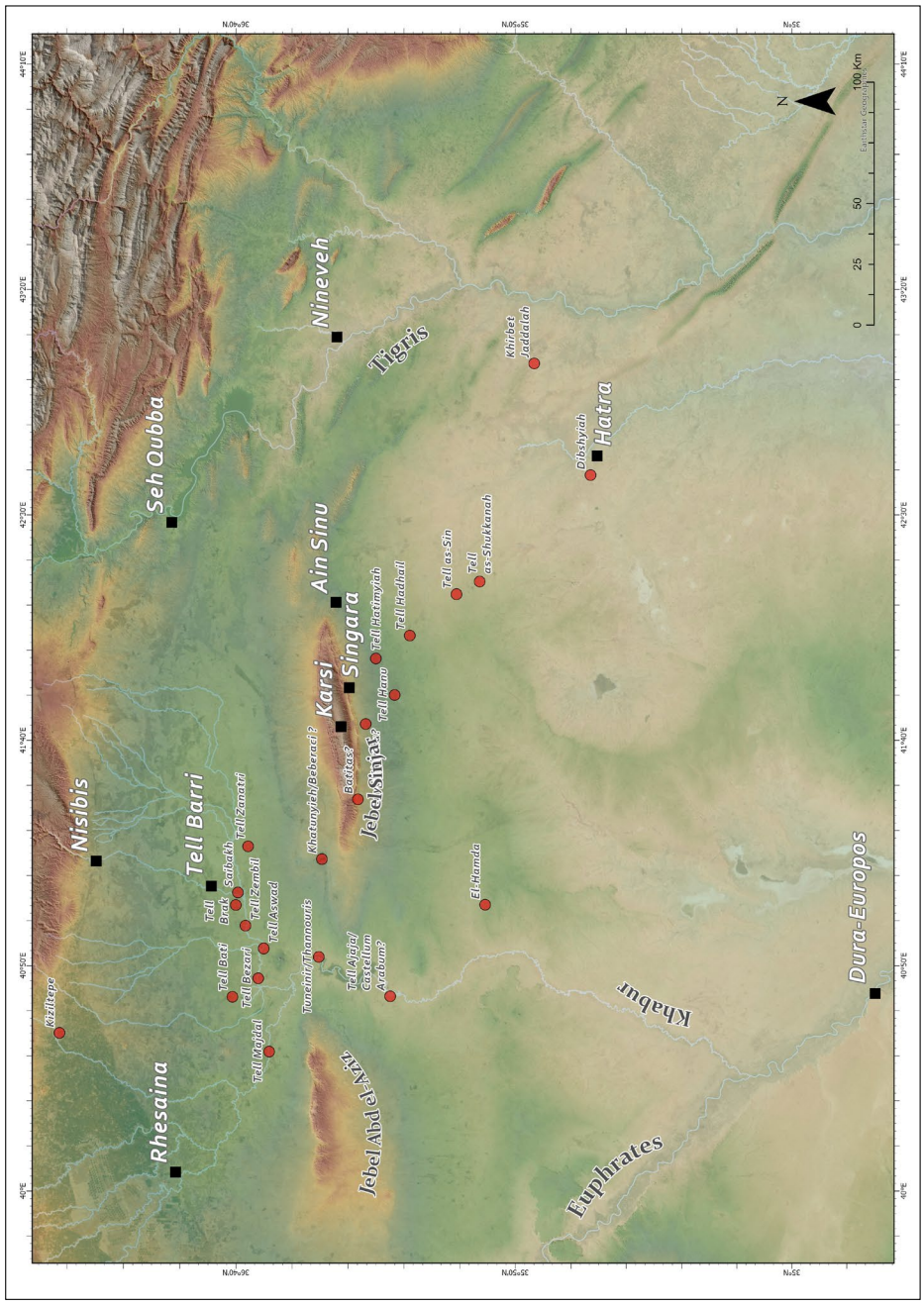

Fig. 1 Map of Northern Iraq.

defined by the limits of this geographic shelf, which also correspond to the 200-mm rainfall line, below which agriculture is possible only with artificial irrigation and labor investments. All major settlements (Rhesaina, Nisibis, Singara) lie above this line and within the northern, extended basin of the Khabur river, the major tributary of the Euphrates in the region (the other, shorter and with a more seasonal character, is the Balikh at the west).[8] This is a crucial aspect to take into account, as the whole of North Mesopotamia is a climatic zone where the interannual rainfall variability oscillates greatly, thereby considerably affecting harvest practices, with great consequences for both political and social mechanics.[9]

Urban Economy: Cities on the Fringe

Major studies on the Roman presence in the steppe-lands of North Mesopotamia have mostly concentrated on the historical and literary evidence, with the archaeological record only minimally included into the discussion.[10] This is partly due to the fact that an effective set of archaeologically reliable data is indeed missing, but also to the scholarly tradition that has somewhat relegated the study of the easternmost frontier of Rome to being within the larger discussions on the Roman Near East, with Mesopotamia being de facto a small and very much peripheral area of the vast Roman Eastern Mediterranean. The evolution of settlement patterns in the Roman period and late antiquity has rarely been explored for the broad region, and, with the sole exception of exploration carried out by David Oates in the 1950s at Ain Sinu and Singara, detailed urban landscape studies have been only recently approached for the Roman (and Parthian) period.[11]

On such premises, the definition of the Roman imperial space and landscape in North Mesopotamia seems to be difficult to tackle. Survey projects carried out in northeastern Syria and northwestern Iraq since the 1980s have somewhat failed to delineate the transformation of the landscape of settlements in the Hellenistic, Roman, and later periods. If, on the one hand, this was due to the limited interest of many projects in the so-called *post-Assyrian* periods (roughly from the sixth century

8 With the exception of Rhesaina, which is situated at the spring of the Khabur (modern Arabic name is Ras el-Ain, "the head of the spring"), all other major centers are located far from major waterways but in close proximity to *wadis* (seasonal rivers) or natural springs.

9 Eklund, Thompson 2017. Weiss et al. 1993.

10 Millar 1993; Ball 2000; Butcher 2004; Edwell 2008.

11 Oates 1968 on the excavations at Singara and Ain Sinu. Palermo 2014 on Nisibis and its archaeological remains, Regional-scale studies: Brancato 2017; Palermo 2019. See also Foietta 2018 on Hatra and its landscape.

BCE to the rise of Islam), on the other hand, the scanty available records to be used in a comparative perspective with surface-collected evidence must have discouraged those interested in the reconstruction of the Seleucid and Roman involvement in the urbanization/ruralization processes in the region. This difficulty in examining and analyzing data has also generated confusion with regard to the terminology employed for the period that covers the early centuries of the first millennium CE. Terms such as "Parthian–Roman," "Hellenistic–Roman," or even "first millennium AD" [sic!] were largely used in publications and field reports, creating undiscernible groupings of archaeological material that, if they ever could be, cannot be differentiated anymore.[12] This lack of interest in the Classical Age in Mesopotamia has evidently significantly impacted the full comprehension of both historical and archaeological dynamics, resulting too often in a confused patchwork of information that requires time and too much of a speculative approach in the absence of reliable datasets. This scientific impasse has so far almost completely dominated; however, new projects operating in the greater area of North Mesopotamia are revolutionizing our perception of the extended eastern borderland of the Roman Empire and its role as a zone of interaction between multiple imperial agents.[13]

It is a truism, however, that the definition itself of *Roman* settlement in the region is challenging. On the base of such premises, I will now discuss the available evidence for the rural and urban scenario of Roman Mesopotamia, with a particular focus on the economic phenomena as retrieved in textual and archaeological data.

The starting point is the definition of *main* and *minor,* as well as *urban* and *rural,* as these can be applied to the contested landscape of Roman Mesopotamia. A main center, usually an urban site, can be defined as a relatively large city that must have played a significant role in military, economic, and social processes, represented by the concentration of trading activities, different craftsmen, and its predominant role in the regional and trans-regional route network. According to these categories, the major centers are three: Nisibis, Rhesaina, and Singara.

Besides these urban centers, small villages, hamlets, isolated farms, and other rural communities also populated the Mesopotamian landscape, along with seasonal camps of non-sedentary groups. All these categories must have interacted—on a rather mutual level—with large cities, and yet the social and economic dependencies of these sites need further explanation. Did these rural communities occasionally interact among themselves by somehow bypassing the major center(s)? The answer is probably in the affirmative, as many rural communities in antiquity acted along a double channel, sustaining at the very same time both the major center(s) and themselves. On the other hand, supplies coming and going from a rural area did not all reach the urban

12 De Jong and Palermo 2018, 244–245.
13 Palermo 2016; Palermo, Ur, and de Jong 2022.

centers, and in the same way, not all goods available in the community arrived from designated cities. Thus, the exploitation of the rural landscape functioned relatively equally as a major benefit for the smaller communities within the political and economic orbit of the largest and most important cities.

In terms of social stratification, major cities tended to be populated by "globally" oriented societies that defined themselves through broader value systems, created market economies, and managed the majority of the economic processes of both the local and regional spheres. On the other hand, the countryside's response to the market-oriented major centers generated a series of economic specializations that fostered the importance of the rural zones in relation to the major urban areas.

Unfortunately, in North Mesopotamia, there is not sufficient evidence to precisely suggest what kind of social milieu was dominant in the major centers, but some suggestions can be made nevertheless. Was Nisibis, for example, once it had become a *colonia,* a "Rome-oriented" center? To what extent was the administration of Nisibis influenced, again, by political interests along the *limes?* At what level was the impact of Rome recognized by local communities and traceable in the available evidence from the major centers?

Urban areas, although limited in number if compared to other eastern regions, constituted the core of the *consensus* within the limits of the eastern borderland. This is displayed in the adoption—alongside the persistence of local traditions—of certain values of external origin in terms of religion, architecture, economy, and administration that mingled well with the local substrate in order to create the sociocultural panorama of Roman Mesopotamia. The negotiation of these values shaped the social and physical features of each city; taking place at different levels, this particular mediation is visible through major categories of evidence such as environmental factors, politics, strategic relevance, and the economy.

All three major centers, Nisibis, Rhesaina, and Singara, lie in a steppe-land area that covers a substantial part of North Mesopotamia, and therefore, they share a common geographical setting that includes the presence of waterway(s), springs, and arable land in their immediate proximity. The common ecological features are reflected in their rather similar importance in terms of political control. Rome's influence in the Mesopotamian borderland was particularly visible in this roughly triangular area whose vertices were the major urban centers. These acted as key points for the maintenance of imperial control, and their role as trading points and commercial hubs also affected the economic landscape on a regional scale.

After the peace treaty of 292 CE between Narsai and Diocletian, for example, only Nisibis was granted the permission to establish trade exchange with Persia (and beyond), a fact that reflects both the relevance of the city itself and the particular

Fig. 2 Detail of the Arch of Septimius Severus, Rome.

role that the urban hubs had in the developing economy of Roman Mesopotamia.[14] Prior to this phase, Nisibis and Rhesaina, not too distant from each other, interacted in terms of economic interests, territorial control, and strategy within the political context of Rome's influence in the area.

In terms of the impact of empire—expressed, for example, through the presence of substantial architectural features—major cities of the region acted differently from other cities of the Roman Near East. We can assume that, perhaps because of the particular political scenario of the region, they must have looked like (even more) fortified cities. Indeed, among the large cities of the region, only at Nisibis is there no clear trace of its massive defensive walls, but one can certainly infer their existence—as depicted, for example, on the Arch of Septimius Severus in Rome (Fig. 2). The over-imposition on the supposed ancient site of the modern centers of Al-Qamishli (Syria) and Nusaybin (Turkey) has certainly contributed to the obliteration of the majority of the archaeological remains.[15] Fortified citadels, reinforced gates, and military quarters also characterized the Mesopotamian cities of this period, as did hydraulic engineering works that must have contributed to the water supply for their population (see the case of the late Roman/Byzantine cisterns at Dara, not far from Nisibis itself).[16] However, unlike cities in western Syria, which were also adorned with temples, palaces, public squares, and rich private dwellings, a proper architectural program is not very well visible in Roman Mesopotamia. At Nisibis, the provincial capital from Severus' time until the mid-fourth century CE, there are few archaeological remains dated to the Roman period. Corinthian columns are still visible in the no man's land between Syria and Turkey, and they have been interpreted (also in association with a very fragmented Latin inscription) alternately as part of a possible circus located south of the city center[17] or, less likely, as part of the forum.[18] The city started to host—especially from the fourth century CE onwards—a vibrant Christian community, and the remains of the baptistery of Mar Yaqub in the modern city center of Nusaybin (on the Turkish side of the border) bear witness to this phase. Thanks to a very detailed inscription, it is possible to date the monument to 359 CE, a mere four years before the peace treaty of 363 that marked the end of the Roman presence in the region.[19]

14 Palermo 2019, 52. The *Expositio totius mundi* (22, ed. Rougé = p. 156) mentions that, because of this particular status, cities like Nisibis (and Edessa) were populated by wealthy communities.

15 Early twentieth c. travelers failed to recognize imposing architecture in the area, a sign that speaks to an even earlier obliteration and is possibly connected to the re-use of stone-cut materials in early modern and modern building activities. Gertrude Bell, in 1911, mentioned the remains of what she interpreted as a "Roman bridge" over the *wadi* Jaghjagh.

16 Ousterhout 2019, 165–166. On the water management in the Near East during the Roman period see also Kamash 2013.

17 Lightfoot 1988, 110. See also de Jong and Palermo 2018, 254.

18 Lightfoot 1988.

19 Palermo 2019, 74.

Fig. 3 Cuirassed statue, likely late second century CE from Ras el-Ain (Syria).

West of Nisibis, the favorable position of Rhesaina, on the road that connects the Euphrates region to the Khabur valley and, hence, to the Tigris (via Nisibis), was extremely important to the strategic purposes of the Roman Empire in Mesopotamia. Its location in a fertile land, rich in water and springs, contributed to the development of the civilian settlement and served to support the military fortress. The elevation of the city to the status of *colonia* reflects its relevance in terms of territorial control, but it also mirrors the politics of the Severan period, which aimed to "officialize" the Roman presence in the region in consequence of the new territorial acquisition. Rhesaina, like Nisibis, Singara, and Edessa, thus became a civic mint in the area, thereby directly increasing its own economic impact on the region. Military personnel stationed in the city may have forced the reconfiguration of the urban space. Part of the Roman-period city walls has been unearthed at in the modern city of Ras el-Ain (Syria),[20] and the incredible finding of a cuirassed statue—dated probably to the end of the second century CE—confirm the enormous political relevance of the city (Fig. 3).[21]

Singara, corresponding to the modern Iraqi city of Sinjar (or Beled Sinjar; Kurdish: Shingal) has preserved large part of its late-Roman-period city walls with U-shaped towers and monumental gates. Unlike Nisibis and Rhesaina, excavations carried out by D. Oates in the late 1950s have permitted a much clearer sense of the ancient urban space and the extent of the fortified town and its supposed citadel.[22]

Considering this evidence, and taking into account that a significant military presence was attested in these centers in various occasions, one can postulate that, despite the absence of significant documentation, both textual and archaeological, it would not be

20 McEwan 1958. Some evidence about the Roman and Byzantine levels at Tell Fecheriye is also present at http://www.fecheriye.de/de/ausgrabung-2007/ (accessed December 2021).

21 Palermo 2019, 93–94. See also Cadario 2020.

22 Oates 1968, 97–106.fO.

too hazardous to suggest that the dynamics of military/civilian interactions, extensively known from Dura Europos, were probably similar in Rhesaina, Nisibis, and Singara.

Demography and the Agricultural Economy in Roman Mesopotamia

An interesting element to determine the economic impact of a *colonia* at the very end of the Roman Empire is to potentially reconstruct the demographic pressure that the city applied to itself and the surrounding territory. As many of the ancient economic processes were prevalently dictated by agricultural revenues, the ratio between demography and a city's potential catchment area is a useful way to assess the spatial (and socioeconomic) impact over the landscape.

Several studies have focused on the calculation of demographics and urban demographics particularly, with a substantial number of them dedicated to the Roman world.[23] Research conducted within the framework of the Oxford Roman Economy Project shows that an estimated population for nucleated settlements (villages) ranged between 150 and 250 persons per hectare.[24] It has also been observed that in Bronze Age Mesopotamia, for example, this range could have varied between 100 and 200 persons per hectare.[25] This is largely based on comparative observations of modern rural communities, where building techniques (adobe, mostly) and household components (enlarged families) have not changed too much from ancient times.[26] Eventually, by combining a Mediterranean model with the Near Eastern one, one can assume that a range of 100–200 persons/ha can be also applied to later periods of Mesopotamian history. And yet, the space within a city was not entirely occupied by private dwellings (public buildings, roads, market squares, and open areas were all part of the urban layout), and for this reason, a lower figure would be much more realistic in determining demographic quantities.[27]

23 See the extensive biography on the topic, which is available at https://oxrep.classics.ox.ac.uk/bibliographies/ancient_city_populations_bibliography/ (accessed December 2021).

24 Witcher 2011, 43.

25 Wilkinson 2003, 39–51. This theory was borrowed from Carol Kramer's ethnoarchaeological study of rural communities in Iran (Kramer 1982). There is, however, no certainty in reconstructing scenarios using these numbers, and on more than one occasion, an attempt to assess population figures by employing excavation data has yielded much higher figures for Mesopotamia (see, e.g., Postgate 1994).

26 Kramer 1982.

27 On the reconstruction of ancient demography in the Near East, see Kramer 1980 and Wilkinson 1994.

As said, Nisibis, Rhesaina, and Singara were primarily civilian settlements that were adapted to host military quarters, and the case of Dura Europos provides a useful archaeological comparison.[28] In this sense, a precise estimation of the settled area is affected by the fact that part of the internal space of the cities was occupied by military structures that might have increased the average person/space ratio. The military quarter at Dura Europos, for example, occupied approximately one third of the walled space in the northern part of the city, covering an area of approximately twenty hectares. Population figures for the military quarter have been estimated by Simon James at 3,000–6,000 units.[29] If compared to the general numbers hypothesized for the civilian part of the city (10,000–15,000),[30] this evidence suggests a considerable presence of Roman soldiers (and associated families) at Dura. It is not a surprise, then, that the involvement of Roman officials in economic transactions and social (mutual) cooperation with local and regional communities was particularly intense.

Turning to Roman Mesopotamia proper, I will briefly use a similar methodology to assess population figures and catchment areas. I will employ Singara as the test case here, as its archaeological remains can be used to suggestively determine the size of the ancient city in a better and more complete way than Nisibis or Rhesaina. The walled area of Singara covers an approximate area of seventeen hectares, which means that, considering the low range test parameters, it could have hosted approximately 1,700 inhabitants, a number that seems relatively low for a "city," whereas if one assumes the highest parameter, the population of Singara might raise to circa 3,400, which fits particularly well—proportionally—with the calculation already proposed for Dura Europos. Starting from the very end of the second century CE, Singara became the headquarter of the *I Parthica,* one of the two legions deployed in Mesopotamia by Septimius Severus.[31] This evidence suggests that the population could have increased by *at least* 4,000 units—but higher numbers are more likely. Considering that there is no evidence of an external fort/camp at Singara, one must think that Roman soldiers were hosted within the city walls, following the model that I have already illustrated for Dura Europos. At this point, Singara would have been populated by a potential of ca. 6,000 people (lower figure) or, in the case of the higher estimation, 7,500. These

28 The recent volume by S. James (2019) provides a substantial historical and archaeological overview of the military camp at Dura.

29 James 2019, 300.

30 Baird (as *pers. comm.*) in James 2019, 300. Previously, Baird 2014, 121 suggested lower figures: 5,000–6,000.

31 *I Parthica* and *III Parthica* were effectively deployed in the region. The *II Parthica,* although created for the eastern campaigns, was headquartered at Albanum (Palermo 2019, 81–82). Singara would host the *I Parthica* and the *I Flavia Constatina* during the Sasanian siege of the 344–348 AD (Palermo 2019, 83).

figures are very well within the scale of a mid-to-large settlement in pre-industrial societies, as rightly pointed out by A. Bowman and A. Wilson.[32]

Eventually, this increase in population was necessarily tied to a stronger pressure on the potential agricultural catchment area, whose effective exploitability must have represented a great impact on the general economic life of the city.

Indeed, demography—and particularly demography in the ancient world—is considered a key element for the understanding of multiple and complex economic processes.[33] Usually, significant intensifications in economic activities during the classical/late antique period in Mesopotamia can be directly correlated with an increase in the size of settlements.[34] And indeed, archaeological surveys carried out in the large area from the Upper Khabur basin to the Tigris have demonstrated that the "Age of the Territorial Empires" (the Assyrians, Seleucids, Romans, Parthians, and Sasanians) went hand in hand with a steady intensification of urban and non-urban settlements, despite the natural curves and the inevitable periods of political instability.[35]

Naturally, each major center of the ancient world was not isolated or detached from its own regional landscape, and assuming that the parameters used to estimate the supposed population of the large centers of Roman Mesopotamia are valid, the next step is to define their possible catchment areas. These zones represent the expendable agricultural potential of each city. A model to calculate the extension of a city's agricultural sustaining area in the fragile landscape of North Mesopotamia has been formulated by the late T. Wilkinson.[36] This is based on the assumption that a single person eats approximately one hectare's worth of grain or cereals per year (on the basis of a fallowing regime, which can be adapted to the particular ecological context of North Mesopotamia).[37] According to these figures, the catchment area of Singara, for example, could have extended at least as far as seventeen square kilometers if one considers a low estimate for its population, or thirty-four square kilometers if using the highest parameters (Fig. 4). The adjoined military population raises these numbers considerably. Unfortunately, no systematic survey has been carried out in the close proximity of Singara, and one cannot fully establish to what extent a potential overlapping of catchment areas between the city and the surrounding villages in the

32 Bowman and Wilson 2011, 13.

33 Jongman 2009, 116.

34 Lawrence et al. 2016.

35 On the surveys carried out in the region, see, in particular, Wilkinson and Tucker 1995; Wright et al. 2002; Morandi Bonacossi and Iamoni 2015; Palermo 2016; Ur et al. 2020; Palermo, Ur, and de Jong 2022.

36 Wilkinson 1994, 483–520.

37 This model has been based on ethno-archaeological evidence from modern Iraq (Adams 1965). Adams calculated that, excluding the area of Baghdad, the sustaining area for half a million people in the Diyala basin averaged 1.4 hectares per year (Adams 1965, 23 ff.). See also Kramer 1982, 188–189 for other regional figures.

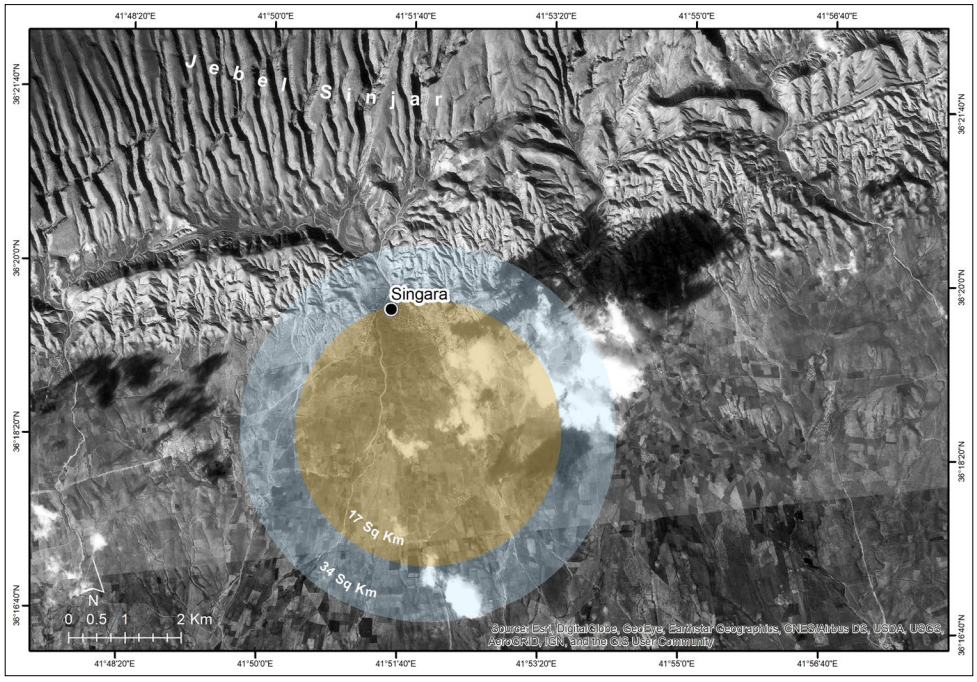

Fig. 4 Possible catchment areas of Singara, 17 sq. km (yellow); 34 sq. km (blue).

countryside might have affected the agricultural and economic scenario. I do believe, however, that—as in the case of early imperial Italy[38]—the landscape of settlements around major cities of Roman Mesopotamia acted within an integrated market economy, rather than being independent and economically isolated.[39] Small and rural sites, indeed, participated actively in the continuous transaction between agricultural surplus and manufactured goods which defined the urban–rural relationship. There is no apparent reason to believe that this process was not in place also at the very end of the Roman territory, and particularly when the region was firmly in Roman hands, between the end of the second and the mid-fourth centuries CE.

If a demographic analysis can be tentatively suggested for the urban centers, the rural population does not fall into the discussion so easily. Survey data for the Roman, Parthian, and early Sasanian periods are too scant and occasionally imprecise (see above). Projects carried out in the 1990s and early 2000s in northeastern Syria have somewhat

38 Horden and Purcell 2000, 270–277.

39 The strict correlation between major cities and their sustaining countryside in the Near East during the Classical Age has been also postulated for the Seleucia hinterland (van der Spek 2008).

failed to draw conclusive data on this period, and the lack of reliable stratigraphic evidence with which to compare surface collections hinders further consideration. However, a partial discussion can be based on data such as site numbers and distribution, as they were identified by small- or large-scale surveys across northeastern Syria and northwestern Iraq. I have discussed the data elsewhere,[40] and here I want to propose some summarized and preliminary observations with regard to the landscape of villages and secondary centers in Roman-period Mesopotamia. It is almost certain that a slow, but consistent, growth is observed from the Hellenistic period onwards, which somewhat contrasts with the troubled political scenario of the region. Some areas seem to have been more densely populated than others. A quite visible alignment of sites along a NW–SE axis from Nisibis towards the Jebel Sinjar (and from there to the Tigris) might indicate the existence of a traveled commercial axis between two of the major cities of Roman Mesopotamia (Nisibis and Singara) and the upper Tigris basin (whose western bank was in Roman hands—although with alternating fortunes—until the mid-fourth century CE) and, perhaps, the economically strategic city of Hatra. Sites recovered are usually small and often range between <1 and 3 hectares, undoubtedly indicating the rural character of the region. Surface-collected evidence reflects, perhaps, a local imprinting and the persistence of a regional material culture, with strong roots into the pre-Roman period. Arretine ware, *sigillata,* and other Roman ceramics have been seldom collected, whereas the relative abundance of the so-called "brittle ware" might indeed indicate extraregional connections with western Syria and the Upper Euphrates.[41] The absence of long-traveling objects might, on one hand, be easily connected to the partial evidence deriving from the sole consideration of surface material or, on the other hand, might once more point to the overwhelming economic role of major centers as trade and commercial hubs, as well as of places where the village–city relation, in terms of marked integration and exchange, took place. Contrary to Roman-period Mesopotamia, however, recently analyzed datasets from the Upper Tigris basin in Northern Iraq have demonstrated that the Parthian period (roughly from the late second century BCE to the early third century CE) was a phase for intense population growth in the area, which was only barely impacted by military operations.[42] I have postulated elsewhere that such growth might have derived from the close proximity of the area to the core of the Adiabene region, whose rulers perhaps put in place a policy of regional economic support.[43]

40 Palermo 2019, 190–209.

41 On the so-called "brittle ware" as a particular index fossil in Northern Syria, see Amodio 2008; Vokaer 2010; 2011.

42 Ur et al. 2013; Palermo 2016; de Jong and Palermo 2018.

43 Palermo, Ur, and de Jong 2022.

Rural Economies: Villages and Mobility

Considering the data discussed so far, it might seem quite evident that a proper Roman economic and social impact in this area is not easy to fully tackle and that—unlike cities of western Syria, the Levant, and Palmyra—our understanding of the economic dynamics of Roman Mesopotamia is, as seen, partly limited. The panorama described so far does, indeed, reflect a common model for the northern Mesopotamian landscape of settlements in the Classical Age: on the one hand, the very small number of sizable cities, generally defined by their prominent role in both regional and wider contexts, mirrors the troubled situation of the region, in which walled centers offered security and sociopolitical relevance; on the other hand, there is a clear persistence of a long-standing tradition of a rural-oriented region dotted with small communities orbiting around those very same large cities. In such a critically balanced relation, the social component of this interaction (urban vs. rural communities) came to play a decisive role.

Major cities hosted a mixed population of soldiers and local people, whose level of integration and mutual cooperation must have been a common trait throughout the entire area. Small settlements and isolated villages most likely retained their local traditions, with large groups of Aramaic-speaking communities exploiting the surrounded land while economically—at least partly—tied to major centers. Members of external elites (i.e., Roman officials) occasionally resided and dealt with trading and economic activities in the villages. This special (and spatial) relationship between cities and villages is, therefore, a key factor for the understanding of these very same activities and social connections in such a borderland area. In particular, these phenomena are very well witnessed in the textual evidence (graffiti and papyri) from Dura Europos as well as in the corpus of the so-called *papyri* of the Euphrates.

These documents bear witness to multiple transactions, agricultural activities, and the involvement of Roman officials in the economic scenario of the eastern borderland. The deployment of Roman soldiers in the region contributed to bringing another type of agency to the economic life of Dura and the Middle Euphrates, but there is also reason to believe that, most likely, the economic structures that were in place prior to the arrival of Rome did not undergo such a radical transformation. Graffiti evidence from Dura Europos points at the involvement of local "non-Roman" elites in commerce and trading between the urban center and the surrounding medium-sized-to-small settlements located mostly upstream on the Khabur river—perhaps in a territory that was much more controlled and secure for the movement of people and goods.[44] Other documents and, in particular, data from the House of the Archives at Dura Europos (or the Archive of Nebuchelos) are also particularly useful to reconstruct

44 Ruffing 2016.

the economic life of the city.[45] Nebuchelos was most likely a member of the Durene elite who must have gained Roman citizenship after the 212 CE reform. In the transactions preserved in his archive—sales of lands, vineyards, orchards—both the local population and Roman soldiers were actively involved, pointing at a strong level of mutual interest and collaboration. Indeed, Roman soldiers (mostly veterans) stationed in the region became land owners in the proximity of Dura, perhaps in the fertile Euphrates floodplain. For example, in *P.Dura 26,* a certain Iulius Demetrius (from *Cohors III Augusta Thracum*) is recorded as being the purchaser of a "land with trees" from a local man (Otarnaeus) in 227 CE. The land was located in a village approximately twenty-five kilometers upstream along the Khabur. The purchasing act was witnessed by other five individuals, and we know of another Roman soldier, Aurelius Salmanes, who signed on behalf of the local vendor, presumably because he was an illiterate man.[46]

This level of interaction is also visible outside the urban context of Dura, in the so-called documents from the Middle Euphrates. This set of twenty-one texts (papyri and parchments), written mostly in Greek (with the exception of two in Aramaic), was probably part of a household archive from the village of Beth Phurin, tentatively located along the lower Khabur river, not far from the Euphrates confluence, in the district of Appadana (in the region of *Sphoracene*), which might have encompassed the area between the modern city of Al-Hassake and the Euphrates-Khabur confluence in eastern Syria, around Circesium (mod. Al-Busayreh) (Fig. 5). Out of the twenty-one texts, nineteen of them were judged as readable—and, hence, publishable—by the editors.[47] The majority of the documents has been dated to the period between 232 and 252. The last document, thus, pre-dates the Sasanian attacks on Dura Europos and the military campaigns of Shapur I in the area, which most certainly overturned the economic importance of the region.

The analysis of texts highlights a well-integrated economic scenario, which contributed to foster regional mobility (as I will discuss later), as well as good levels of interaction between different social groups and economic agents. An interesting example of such comes from *P. Euphr. 9*, a sale contract from the town of Beth Phurin in which a certain Aurelios Oualeg [-] is mentioned as a centurion of the *I Parthic*a

45 Ruffing 2007, 399–411.

46 James 2019, 308.

47 The papyri were edited in three different articles (Feissel and Gascou 1989; 1995; Feissel, Gascou, and Teixidor 1997). The texts have been thoroughly analyzed from different angles (historical geography, legal implications, prosopography), and the literature has steadily increased in numbers over the years. Among the major works, see Gnoli 1999, 321–358; Mazza 2002; Gnoli 2007, 71–84; Merola 2012; Zerbini 2016. The name Appadana (Old Persian *appadana* and Parthian *"pdn"*) means "palace," and it might be indicative of the political and economic role of the settlement within the regional context.

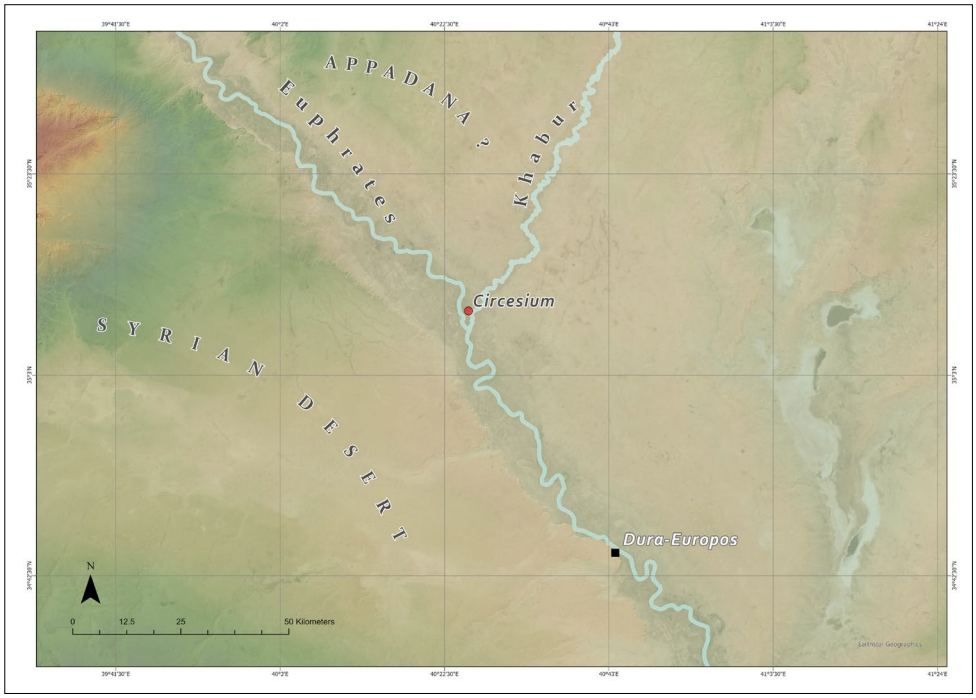

Fig. 5 Site of Circesium (mod. Al- Busayreh) and surrounding region at the Euphrates-Khabur confluence, eastern Syria.

in 252 CE (οίκουσα δέέν Νεσιβειν, συνπαρόωτος αύτη Αυρ(ηλίου) Ουαλεγ(εώνος) α Π(αρθικής) (έκατοντάρχου) πριμοπίλουάνδρος αύτής). Aurelios is listed as the husband of a woman who owned a slave, which the document reports as being sold in Nisibis. A similar transaction is also mentioned in *P. Euph. 8*. In both the texts, individuals from different villages of the *Sphoracene* establish economic activities at Nisibis (here defined as *Septimia* and *Metropolis*). The involvement of a Roman centurion in these economic transactions is an additional sign of the role Roman officials had in the social and administrative panorama of Mesopotamia. I agree with T. Gnoli, who rightly claims that there is no doubt that Aurelios was in charge of some administrative task in the provincial capital and that his wife was also somewhat involved in the urban economy.[48] In addition, the date of the document—252 CE—fits perfectly well with the apex of Roman control at Nisibis and the trans-Euphratene in general, right before the mid-third century CE Sasanian invasion that caused, among other things, the sack of Dura and a long period of instability in the area. Data from Dura Europos and the

48 Gnoli 1999, 341.

Middle Euphrates region highlight how the Roman presence—through the agency of veterans and soldiers—profoundly modified the economic scenario of the region. People from Dura and the Euphrates valley participated in a well-integrated network of long-distance and regional trade, also indicating the relevance—for the Roman Empires—of controlling the Khabur river valley, a crucial region that connected Dura with Nisibis to the North.

Mobility and Trade Routes: Singara as a Crossroad

P. Euphr 8 and *P. Euphr 9*—as in many other cases from either the Middle Euphrates or Dura's corpus—also denote the high degree of mobility of people, traders, and intermediaries that were implicated in commercial activities. People traveled for economic reasons from villages to regional centers and to capitals—both close ones like Nisibis and more distant ones like Antioch.

Indeed, mobility was a key feature of the Classical Eastern Mediterranean, and the movements of people and goods were highly incentivized by local and wider economic opportunities. In addition, a common marker of the economic interaction along and beyond the borders of the Roman Empire is the central role the route network had in its success. Initially built to sustain the movement of large numbers of troops while advancing from place to place, the complex network of Roman roads at the edge of the empire ended up assuming a relevant position in multiple economic processes. In fact, in the Roman Near East, the correlation between economic hubs and routes—many of which pre-dated the Roman presence in the region—is evident and assumes a central role when discussing the economic potential of such a borderland zone. Some of the most famous cases in this regard are the *Via Traiana Nova* and the *Strata Diocletiana*, respectively in Jordan and Syria.[49] Although—and perhaps at an initial stage—differently conceived, these roads connected crucial areas of eastern provinces, assuring the double role of military and economic links. Both the roads, however, exploited pre-Roman caravan routes but became important backbones of the Roman expansion and territorial control in the Near East. Thus, the spatial distribution of these routes, and the related organization of urban and military settlements along them, is a central aspect for the understanding of mobility on the fringes of the Roman Empire.

In such a context, the Peutinger Map (PM) is an incredibly helpful tool, despite the issues that the document poses.[50] The map is a parchment roll (6.94 m × 0.33 m)

49 On the urban development in connection with the Via Traiana Nova, see Segal and Richardson 1988. On the Strata Diocletiana, see Kennedy and Riley 1990, 181–183.

50 Talbert 2010, 73–84.

depicting the whole known world from Britannia to Sri Lanka, covering ca. 70,000 miles of Roman roads. It is known by the name of the humanist Konrad Peutinger, who first possessed the document in the sixteenth century CE. On the basis of palaeographic analysis, the current document is usually dated to the thirteenth century CE and was possibly a copy redacted in Swabia, the southern region of Germany that borders Switzerland, and possibly inspired by a fourth-century-CE document.[51] The chronology is largely based on the figurative prominence (walled and towered representations) of certain cities that assumed a certain relevance in the period between the fourth and fifth centuries CE (i.e., Aquileia and Ravenna in Northern Italy, or Ancyra and Nicomedia in Anatolia).[52] Not many years ago, R. Talbert dedicated an enormously important work to the PM (one that adds up to his previous literature to the topic), also enriched with redrawn digital maps and online repositories.[53]

This brief excursus serves to demonstrate the enormous relevance of the PM for the reconstruction of a historical geography of the late Roman Empire, and one that can contribute to the rediscovery of specific aspects of mobility and urban hierarchy in overlooked regions. As such, the importance of the document for the tentative reconstruction of the route network of Roman Mesopotamia is certainly beyond doubt. The region is represented on Segment X, and although it appears extremely compressed—due to the format of the map itself—it shows all major centers of the area, with a more accurate depiction of the northern piedmont zone, perhaps reflecting Rome's primary region of interest or the area that was better known—directly or indirectly—to the mapmaker (Fig. *6*).

I have discussed the major routes of the PM in Northern Mesopotamia in detail elsewhere,[54] but here I want to assess the economic relevance of these routes in connection with the major cities of the region.

Rhesaina, Nisibis, and Singara are all marked with the two-house symbol, which indicates the importance of a stop point,[55] and Singara in particular seems to have played—in the commercial and military route system of Northern Mesopotamia during the Roman period—a role of fundamental importance. The city acted as a major nodal point for civilians and soldiers' movements, contributing to the creation of a relevant hub used alternately for trade and military operations. On the PM, Singara is marked as a station post between Baba (or Bara) and Zagurae (modern

51 Salway 2002, 123–125.

52 There are other characteristics that Salway has used to determine the date and provenance of the PM. Here, I point to his 2005 article for further reference and details.

53 Talbert 2010. A map viewer is available at http://peutinger.atlantides.org/map-a/#?z=1&xy=161.30556%2C17.06111&l (accessed December 2021).

54 Palermo 2019, 210–230.

55 In the interest of comparison, two-house symbols are used to represent Palmyra, Aleppo (Beroea), and Apamea, to remain in the macro-regional context only.

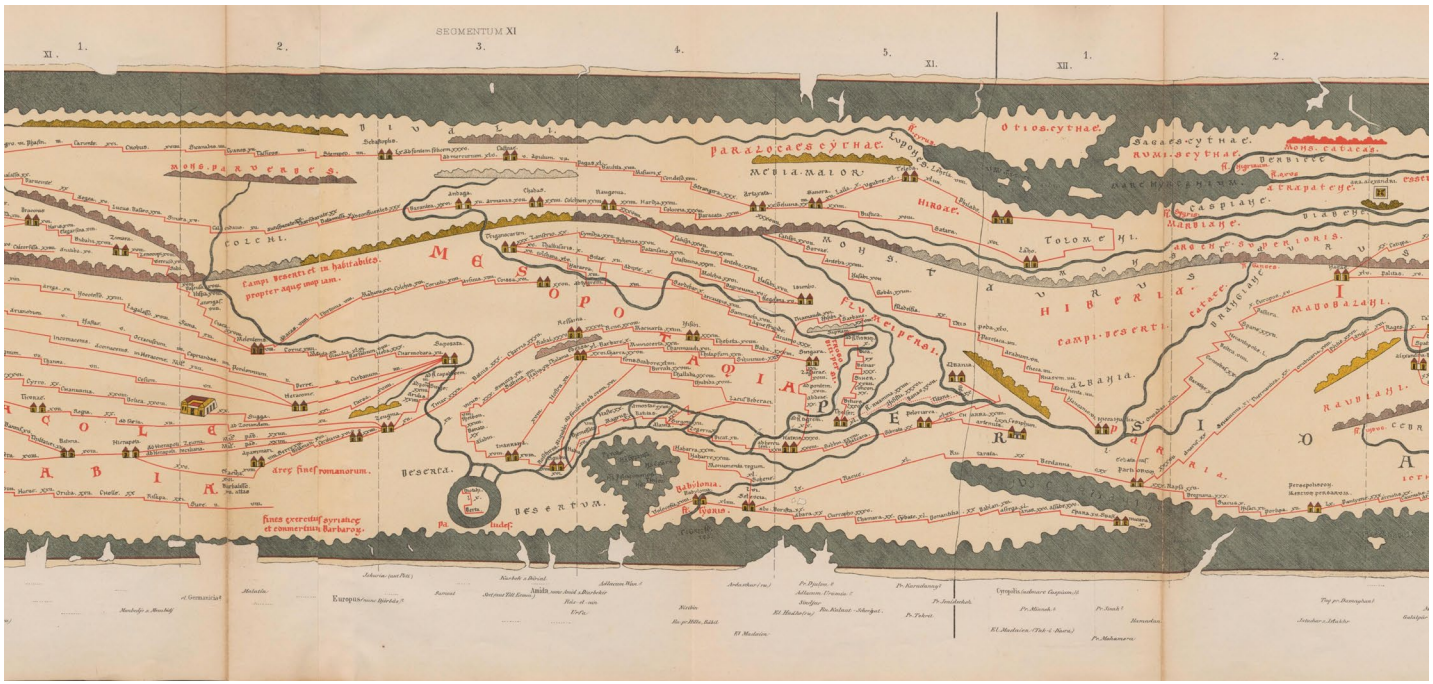

Fig. 6 Peutinger Map, detail showing Northern Mesopotamia. Available at https://isaw.nyu.edu/exhibitions/space/tpeut.html.

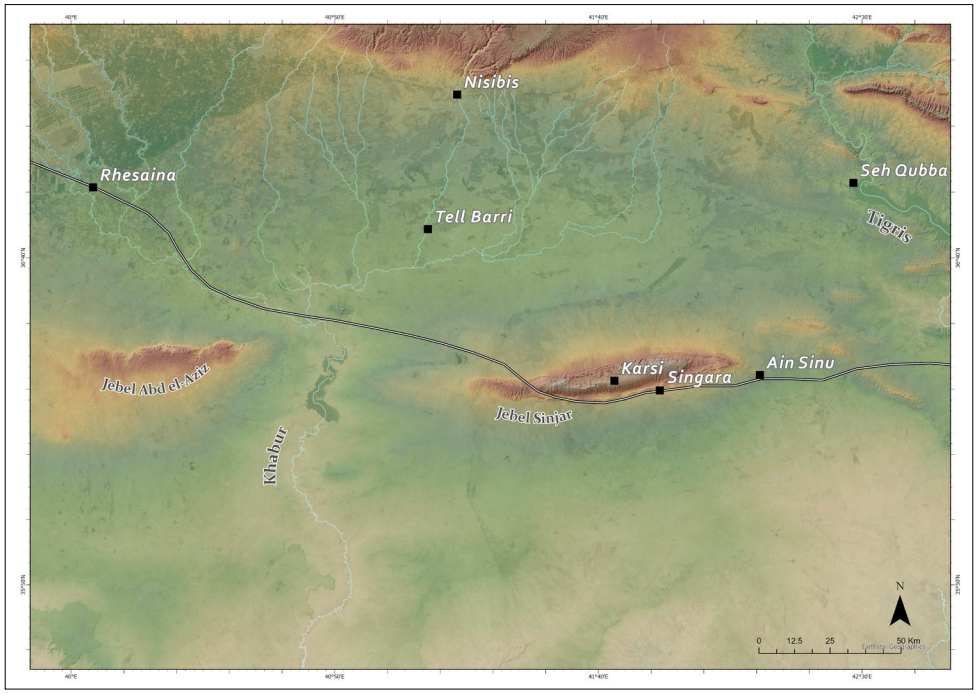

Fig. 7 Map showing relationship of Rhesaina, Nisibis, and Singara.

Ain Sinu), respectively thirty-three Roman miles westwards (ca. fifty kilometers) and twenty-one Roman miles eastwards (ca. thirty-one and a half kilometers). A second road reached Singara from the West, passing through the station of Sihinnus (thirty Roman miles westwards, corresponding to ca. forty-five kilometers) and joining the road from Bara halfway between Bara itself and Singara, somewhere in the proximity of Tell Hayal (Fig. 7).

Here, D. Oates reported the presence of a large squared structure that he believed might have been erected during the Roman period.[56] A third road arrived at Singara, apparently from the north after having passed the station of Arcamo*(?),* thirty Roman miles north of the settlement. A Roman milestone, discovered five kilometers south-west of the modern center of Sinjar, not far from the small village of Faghdani and along modern asphalt that connects Sinjar with the Syrian–Iraqi border, testifies to the existence and the use of a road during the period of Severus Alexander. [57]

56 Oates 1968, 78–79.

57 Oates 1968, 71. The milestone was found in a modern house, as reported by Cagnat 1927, 53, but was unfortunately lost at the moment David Oates visited the city. I (re)discovered the borne in

The document bears the following inscription:

Imp(erator) Caesar / M(arcus) Aurelius /Severus /Alexander / Pius [fel(ix)] Aug(ustus) /Pont(ifex) maxim(us) / Trib(unicia) / pot(estate) XI / Co(n)s(ul) III, [p(atriae), proc(onsul) / A Sing(ara) / M(ilia) p(assum) / III

The mention of the eleventh *tribunicia potestas* provides an accurate chronology for the inscription, which can be dated to 231/232 CE, but we can also assume that the road was repaired at that time. A second milestone, found at Karsi (or Kursi), a small village guarding a narrow gorge in the Jebel Sinjar, north of Singara, provides further interesting information (Fig. 8).

Here I provide the transcription of the text:

Imp(erator) Caes(ar) [di]vi / Nervae f[i]l(ius) Nerva / Traianus Optimus / Aug(ustus) G[er]manicus / Dacicus [Pa]rthicus / pontif(ex) [max(imus) t] rib(unicia) [potes]/[tate ------

This inscription specifically mentions the title *Parthicus,* a reliable indication with regard to the chronology that should be looked for in the last years of the Trajanic campaigns in Mesopotamia, when the emperor obtained the title following his achievements against the Parthians. The presence of such a document in the midst of Jebel Sinjar allows us to speculate about two different hypotheses. Assuming that the milestone was not significantly moved from its original position, one should suppose the existence both of a pass through the mountain west of Bara (the only accessible passage to cross the mountain) and also the presence of a second road linking Singara to the north—and, hence, to Nisibis—which cut through the plain, perhaps also following the Jaghjagh upstream. The road probably linked the area of Nisibis with Singara, and from here it continued towards the region of Hatra. Other possible routes went from the Tigris towards the Jaghjagh/Khabur confluence, and then along the river up to Circesium and the junction with the Euphrates.[58] There is no evidence that this last road was purposely built for the Trajanic campaigns, or rather, and most likely, was a pre-existent track, but its exploitation—and perhaps maintenance—for the strategic movements of troops remains a very strong possibility.

a small room of the Erbil Civilization Museum in Iraqi Kurdistan in 2018, and I have discussed its historical importance elsewhere (Palermo 2018).

58 Millar 1993, 101. On the creation of a road to *Circesium,* see Gschwind 2009, 1600. This route was part of a wider network dated to the Severan period, linking the Lower Khabur with Nisibis and the Euphrates near Sura (see also Konrad 2001).

Fig. 8 Milestone found at Karsi (Kursi), north of Singara.

In this way, the city controlled both the road below Jebel Sinjar, which connected the Upper Khabur valley with the Tigris to the east, and a second road from the north coming from the Jaghjagh basin and the Upper Khabur area. In the general framework of Roman military operations in North Mesopotamia as well as trade and commercial activities, these two axes were most probably the primary routes to follow in order to reach the eastern limits of the empire from western Syria or Central Anatolia. Singara was also the departing point for a southern route towards Hatra and an eastern one that touched the site of Ain Sinu/Zagurae[59] before reaching the Tigris not far from the modern center of Tell Afar, in Northern Iraq. The former route seems to have passed through the villages of Tell Hatimyiah and Tell al-Hadhail, two large *tells* that were probably also settled during the Parthian and Roman period, when they may have been regular stopping points along this route. Indeed, several possible tracks (hollow ways) have been spotted between these sites, and generally all of them in the region

59 On the excavations carried out at the camp of Ain Sinu, see Oates 1968 and Palermo 2019, 131–145.

are aligned along a northwest–southeast axis that roughly coincides with the direction from the Jebel Sinjar towards the region of Hatra.[60]

This complex route network must have benefited many communities and favored the cross-borders connections with multiple economic agents. The permeability of the eastern frontier and the role major cities and market centers played in the regional context is thus accompanied by the involvement in the economic processes of long-distance trade by local elites (small villages) and nomadic tribes (non-dwellers). Both groups functioned as a critical part of the urban–rural economic mechanism, which was evidently encouraged by such a high degree of mobility.

Conclusions

Roman soldiers and their interaction with local elites and communities played a significant role in the region's economic life. On the basis of the data discussed so far, the involvement of Roman officials and the extent of Roman period infrastructures must, indeed, have greatly fostered the economy.

Multiple activities and the need to economically dialogue between different social agents (and those from different backgrounds) were based on the common benefit for the parties involved, and this process is particularly visible in the organized interaction on a mere geographical scale. The role of cities as hubs and market centers, strictly connected to villages and the regional context, speaks for a structured economic scenario, which was—at least until the mid-third century CE—only partly affected by the regional liminality.

Textual data from Dura and the papyri of the Euphrates might thus be interpolated with the proofs of existence of (caravan?) routes in the eastern part of Mesopotamia. The economic mobility of the various social agents in the Middle Euphrates and the Khabur valley was indeed permitted and incentivized by a likely similar route network. Routes from Dura to Nisibis have been seldom explored archaeologically, with a preference for the famous caravan trade route from Palmyra to the Euphrates and, hence, towards Southern Mesopotamia and the Persian Gulf,[61] but they might have asserted a similar function. The economic transactions that are mentioned in the textual records discussed above suggest that the Middle Euphrates region in the early third century CE saw the province of Mesopotamia as an area of opportunities and

60 Edwell 2008, 153. On the route network between the Singara area and Hatra, see Altaweel and Hauser 1993 and Palermo 2019, 103–105.

61 Seland 2016.

that cultural connections and mutual interest were carried out along the Euphrates–Khabur axis all the way up to Nisibis.

This scenario points at the recognition of the Dura and the Khabur–Euphrates confluence area from one side, and northern Mesopotamia proper on the other, as zones of long-distance economic interventions, being connected, respectively, with Palmyra and the lower Euphrates, and Western Syria and the Parthian Empire. Such an interconnected area contrasts with the traditional approach to exchange and interaction at the edges of the Roman Empire, but it fits perfectly within the pre-Roman context of the region, where different communities—each of them controlling specific economic structures—mutually benefited from each other, with little or no geographic or political impediments.

Acknowledgments

I would like to express my gratitude to Sitta von Reden and Lara Fabian—among others—for having invited me to contribute to this volume. A special thank-you goes to Geraint Thomas, who—as on many other occasions—patiently agreed to review my English. Errors and missteps are my very own.

Figure Credits

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Fig. 2, 8	Photos by the author
Fig. 3	Courtesy of Peter Bartl
Fig. 6	© Richard J. A. Talbert, 2010

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Population Movement, Labor, and Wages in the Age of Universal Empires in the Near East

Mark Altaweel and Andrea Squitieri

Introduction

From the late eighth century BCE through to the fall of the Ottoman Empire in 1922, the Near/Middle East and surrounding regions in Eurasia were almost continuously dominated by large states and empires that frequently surpassed more than 500,000 sq. km in size.[1] While periods of political fragmentation occurred, where at times smaller regional states experienced greater autonomy from larger empires, the general trend witnessed was one of larger states and empires enabling some cities to become much larger and accumulate greater flows of trade and wealth.[2] One key factor that facilitated the growth of population, trade, and wealth for some larger cities was the movement, or migration, of individuals and families to regions with large or primate cities, while other regions shifted to less densely occupied areas in the countryside.

This movement had a great impact on how and where populations settled, and it affected the long-term social and political organization of Near Eastern societies for more than 2,000 years. Some evident social changes occurring in this timespan include: increase in common philosophical and religious ideas;[3] increase in common expressions in material culture and arts over a wider area in Eurasia;[4] and the sharing of languages, such as Aramaic and Greek, by multi-ethnic populations over long distances.[5] Common cultural traits, shared by an increasing number of people, began to emerge. We term this phenomenon "universalism," defined as the process whereby an

1 E.g., Morris and Scheidel 2009; Altaweel and Squitieri 2018.
2 Binliff 2013; Woolf 1997.
3 Gross 1998.
4 Boardmann 2015; Canepa 2009.
5 Gzella 2015; Horrocks 1997.

Altaweel, Mark and Squitieri, Andrea: Population Movement, Labor, and Wages in the Age of Universal Empires in the Near East, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 205–231.
DOI: https://doi.org/10.17885/heiup.1582.c22728

increasing sociocultural commonality and sharing emerges across different populations and socioeconomic classes.[6] The emergence of such universal cultural traits reflects not only greater communication and cross-regional connectivity, including trade, but also enhanced population mobility and integration, relative to earlier periods, that brought together people from different cultural backgrounds. This phenomenon was persistent and developed into a long-term pattern for different regions in the wider Near East under large empires, and it became especially evident within large and cosmopolitan cities. We term the period where such universal trends emerged, from around 800 BCE, the "Age of Empire" (AoE).

One economic result often not considered in Western Asia, including the wider Near East, during the AoE, which is partially contemporary to what has been called the "Axial Age,"[7] is how the presence of large political entities would have affected labor migration in ways that were not possible in earlier periods. Not only would the enhanced flow of labor in this wider period (which may have also occurred in the form of forced migration, such as through deportations) have allowed more individuals to take part in local economic activity, but the increased labor pool may also have helped intensify or extensify production. This growth in labor could have also helped fuel trade with increased production of goods. Egypt and Southern Mesopotamia are two regions that produced some evidence, from about the sixth century BCE and into later periods, intensive/extensive agricultural production of wheat, barley, and date palms, although other crops continued to be grown.[8] Increased mobility in the form of economic trade would allow food resources to be more intensely traded, as, for example, within a large region such as Babylonia. This would have diminished the need to grow diverse agricultural products within a smaller region, enabling some regions to specialize in agricultural production that could then be exchanged.[9] Agricultural activities, such as date palm or grain production, are very intensive and/or extensive at large scales. We might expect wages to increase over time as demand for given products increased. However, migration could counteract this trend by making a surplus of labor available, particularly in unskilled areas, thanks to the relative political stability and ease of movement offered by larger states and empires.[10] Based on these observations and considerations, where intensive/extensive agriculture and increased migration are evident, the goal of this work is to determine how unskilled labor wages, critical in agricultural production and exchange, may have been affected by labor mobility in the Near East and Egypt during the AoE.

6 Altaweel and Squitieri 2018, 8.
7 Jasper 2010.
8 Greene 1986; Jursa 2006; van der Spek and Leeuwen 2014.
9 Jursa 2007; 2010.
10 Whittaker 2008.

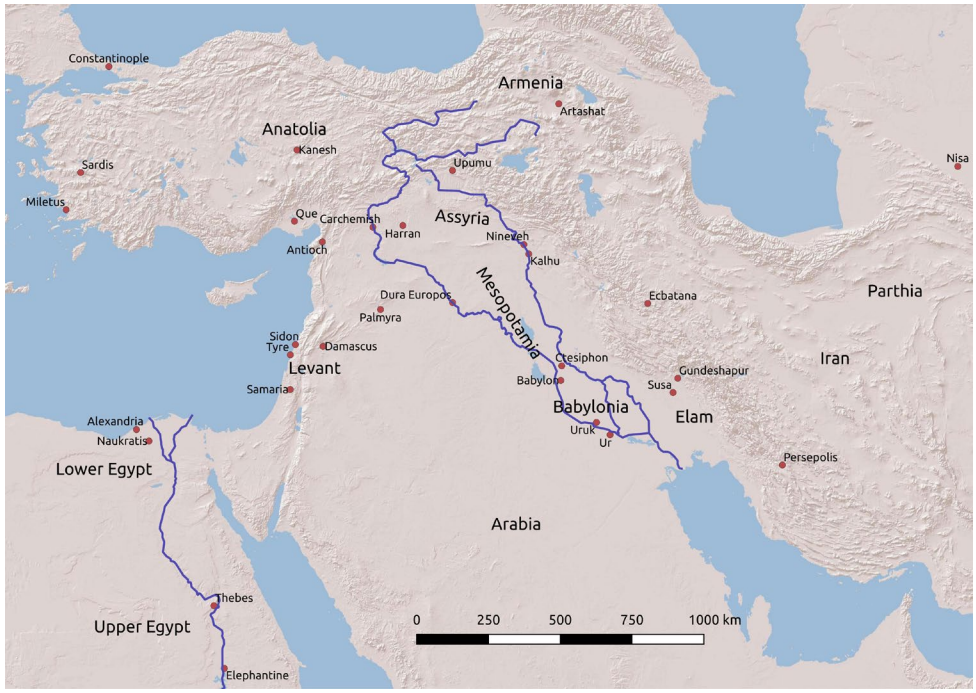

Fig. 1 Region assessed and key sub-regions and cities discussed in this paper.

This work focuses on presenting empirical evidence for wage development in the ancient Near East and surrounding areas during a period of large states and empires. Data from the assessed region offer a unique possibility of combining information on migration and wages, providing insight into this relationship that is not easily achievable elsewhere in the ancient world. The work combines previous model output on mobility with new data that can enable a reassessment of wage development to be made. We present below a new analysis and perspective that integrates existing archaeological data with documentary sources to investigate the effects of labor migration. Documentary data include labor wages; archaeological data include settlement patterns and regional evidence for mobility. The periods analyzed span from the pre-AoE (ca. 3000–800 BCE) to the AoE (ca. 800 BCE – 651 CE). The area and places analyzed are included within Egypt to the west, Iran to the east, the southern Caucasus to the north, and Arabia to the south (Fig. 1). We begin by giving background information on general political trends and mobility in the wider Near East and Egypt. We then discuss the effects of population movement and present methods for analysis and results on population movement, demonstrating migration potential using settlement data. Supporting data and evidence for migration using material culture and historical

data are also given to provide a general historical trend. We then assess wages of unskilled labor, mostly in Mesopotamia and Egypt. The combined data, including those presented and referenced from elsewhere, are discussed in relation to labor migration and its wider economic effects during the AoE.

Historical Background: States and Transport

Before providing evidence on labor mobility and wage changes, some brief historical background describing the major political changes prior to the start of the AoE and after is needed. From the early third millennium BCE to the end of the Late Bronze Age (ca. 1200 BCE), the historical data reveal a prominent trend towards states occasionally growing large (i.e., >500,000 sq. km), but then reverting back to relatively small polities. Empires developed, but they often lasted only a few generations and were generally not replaced by larger states after their collapse, with usually a plethora of small political entities replacing them. Overall, most of the states that did arise prior to the AoE were small, while the opposite was true during the AoE.[11] Fig. 2 shows estimated areas for some well-known states prior to the AoE and during the AoE (Appendix A:1). Although this is not a comprehensive list of all states, the list does show some of the better-known states for these periods, demonstrating the general trend towards larger states during the AoE. Furthermore, larger states tended to succeed one another, while this was not the case during the "pre-AoE." An example of this includes the Ur III state (ca. 2100–200 BCE), which was succeeded by small city-states in southern Mesopotamia.

Contemporary with political changes in the AoE, from the eighth century BCE and later, we see increased movement capability. This is reflected both by physical improvements in equipment and technology—such as the use of camels as pack animals[12] and advances in sailing and navigation,[13] which increased the range of mobility and the areas of accessibility—and the availability of more direct and faster routes, such as royal highways and long-distance roads.[14] From the eighth century BCE, it also became politically feasible to move more rapidly due to the reduced number of state borders. Evidence for the speed of transport is present from historical documents. In the Old Assyrian period (ca. 2000–1600 BCE), trade caravans going from northern Mesopotamia (Assyria), that is, from modern northern Iraq, could reach Central

11 Stiebing 2018; Liverani 2014; Potts 2010.
12 Potts 2004.
13 Heing 2018, 23; McLaughlin 2010.
14 Altaweel and Hauser 2004; Colburn 2013.

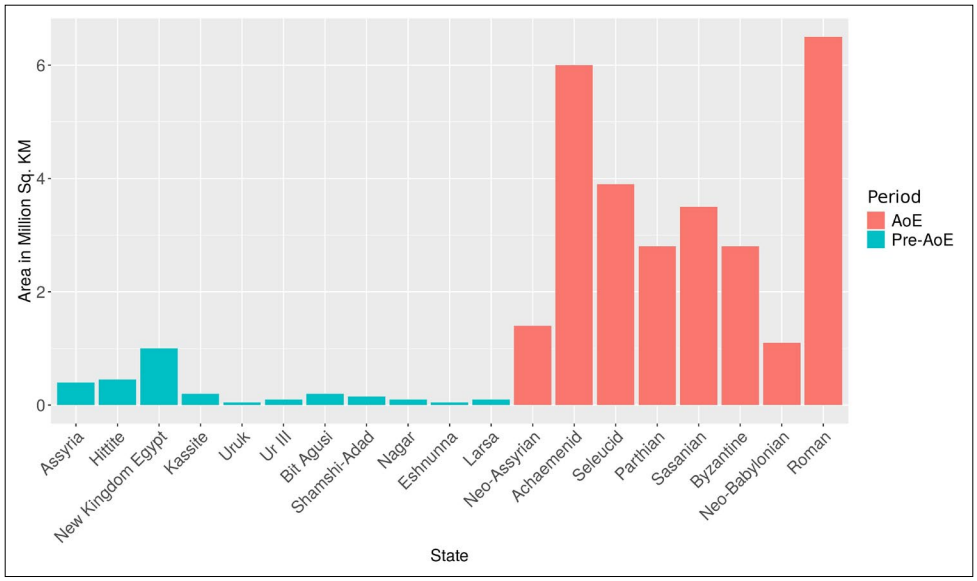

Fig. 2 Pre-AoE and AoE states' areas expressed in millions of kilometers squared.

Anatolia (Kanesh) in about forty-two days, covering approximately 1,100 km in that time, or an average of around 26 km/day.[15] This contrasts with later Neo-Assyrian (ca. 900–612 BCE) and Achaemenid (ca. 550–330 BCE) periods, when speeds of nearly 140 km/day within northern Mesopotamia and 225 km/day across Iran and Anatolia were achieved, respectively—including, in many cases, travel along royal roads.[16] To be fair, travel in the Old Assyrian period took place via donkey, primarily for trade, while documents referring to travel from the Neo-Assyrian and Achaemenid periods were regarding communication using horses, which was intended to be rapid. However, differences in the duration of travel also have to do with political change. In the case of the Old Assyrian period, travel was less direct, often avoiding hostile states or fees that might be incurred in moving trade goods. On the other hand, later travel was more direct, used faster means of travel, and had fewer political barriers to affect movement. In fact, stations were purposely built by the Assyrians and Achaemenids to facilitate faster transport. Roads for rapid transit are evident from satellite data, which indicate direct routes, that is, routes that minimize distance between cities, built during the Neo-Assyrian period as well as later.[17] Furthermore, for general travelers, going

15 Barjamovic 2011, 15.
16 Colburn 2013; Radner 2014.
17 Altaweel 2008; Altaweel and Hauser 2004.

between Susa and Sardis during the Achaemenid period—that is, from Southwest Iran and Western Anatolia—travel speeds were close to 60 km/day, which is still far higher than speeds achieved during the Old Assyrian period. In the second century CE, Chinese sources describing travel between Hecatompylos in Northern Iran to Chaldea in Southern Mesopotamia also report similar travel speeds of ca. 60 km/day.[18] Overall, these data on movement suggest that it became easier for more travelers to move and transport trade goods farther distances at faster speeds. While we can infer trade and communication became more intense in the AoE, data do not indicate the volume or scale of population movement, but one can determine that barriers to long-distance travel were less in the AoE and mobility became easier due to technical and political developments after ca. 800 BCE.

Effect of Movement: Settlement Structure and Empires

Migration and Its Effects

In the wider economic literature, we see that population movement can have an impact on wages and other characteristics of economic life. Migration has been shown to have distinguishable effects on productivity[19] and wages.[20] In urban contexts, migration can affect demand for resources, such as housing,[21] while also potentially introducing skills or resources that might be in greater need in host areas.[22] One historical trend observable in countries such as the mid-twentieth-century United States or nineteenth-century England has been that, as migration increased or became easier due to improvements in transportation, some cities benefited and populations increased rapidly, with wages converging across different neighboring regions. Different and faraway cities developed similar wage levels due to improvements in both communication and workers' ability to move easily across greater distances to pursue opportunities.[23]

18 Hirth 1885, 36–40.
19 E.g., Clemens and Pritchett 2019; Klein and Ventura 2009.
20 E.g., Arpaia et al. 2016.
21 Brueckner and Lall 2015.
22 Boubtane et al. 2016; Boyer 1997.
23 Boustan 2009.

Migration data for the ancient past is difficult to quantify, but a variety of data has been utilized. This includes textual sources,[24] portable material cultural remains,[25] biochemical indicators,[26] and DNA.[27] Although these data are useful, other measures are possible, including the use of settlement structures obtained through archaeological survey data to quantify migration and population movement. Specifically, rapid growth and decline in settlement size can be indicative of immigration and emigration caused by factors such as political change or the availability of new opportunities.[28] Settlement surveys that provide estimates on relative site sizes in survey regions are potentially important for determining likely migration flows across different periods.

Measuring Population Movement

For early preindustrial societies, low rates of natural population growth were likely the result of high mortality rates, suggesting that ancient cities often did not grow rapidly by birth rate alone.[29] In many ancient cases, similar to today, rapid urban growth was often possible through migration, often fostered by trade and economic opportunities, political policies, or other cultural factors incentivizing migration. Additionally, involuntary migration is evident in historical sources as early as the late fourth millennium BCE. This often occurred when captives were taken during conflicts.[30] However, by the first millennium BCE, in particular during the rise of the Neo-Assyrian Empire (ca. 900–600 BCE), deportation became a commonly used tool for political punishment but also to shift populations for economic purposes, which ranged from utilizing skilled to unskilled labor.[31] Deportees were sometimes even provisioned with supplies to work the land. One likely result of this was a greater population concentration, including an increased labor supply, in regions which received an influx of migrants. Overall, regardless of the underlying reason, migration has the effect of (relatively) rapidly increasing populations in some cities, while it may also rapidly diminish populations in different regions.[32]

Huff articulated how economic, geographic, and ecological factors interacted to contribute to urban growth when he investigated the effects of migration on trade and

24 E.g., Beckman 2013.
25 Chapman and Hamerow 1997; Batiuk 2013.
26 Killgrove and Montgomery 2016.
27 Shriner et al. 2016.
28 Kemper 2008; Bonifazi and Heins 2003; Champion 2001.
29 McNeil 2000.
30 McIntosh 2005, 167.
31 Pirngruber 2017, 204; Oded 1979.
32 Persson 2010.

urban growth.[33] One method that can be used for understanding spatial structures of past settlements is spatial interaction entropy modeling (SIEM), in which settlement size or population is studied in urban regions composed of interacting settlements. Settlement structures, which provide information on settlement sizes within a defined region of sites, provide insight into: why populations concentrate in a particular location; the factors shaping settlement sizes based on locations available to migrants within a given landscape; and the social and economic opportunities settlements offer to an incoming population. This method has been used in archaeology to study settlement patterns across different regions,[34] demonstrating how settlement structures evolved during different periods and the potential reasons for these changes, such as their relationship to transformations in mobility and economic opportunities.

In the use of SIEM, relationships between settlement size, using estimated area and defined geographies that account for the spatial layout of settlements in different periods, can be used to determine how mobility and migration could affect a settlement's growth or decline. Results from models include returns on attractiveness for sites (called α) and factors that relate to the cost of moving (called β), which include impediments to moving, such as topographical, political, social, or monetary costs. We can think of α and β as pull and push factors that move people from or to given settlements based on incentives, costs, and ability to move. By running multiple simulations with a variety of α and β inputs, it becomes possible to match the best simulated results to the empirical data. In other words, SIEM explains α's and β's effects on given settlement structures observed from archaeological survey data. In the ancient Near East, settlement structures have been studied by archaeological surveys that record approximate settlement sizes and spatial distribution of sites.[35] Several such surveys in the Near East have recently been investigated by Altaweel and Squitieri,[36] where we use these collected α and β data to better understand how mobility (β) may have shaped observed settlement patterns. The method deployed in creating those results is discussed in detail by Davies et al.[37] In summary, β determined from simulated settlements, which is compared and fitted to survey data, can be used to provide an indication of the migration and mobility that contributed to the observed settlement structures. That is to say, the size and distribution of sites in given areas can match modelled output β values, helping to demonstrate how population movement could have contributed to these settlements.

33 Huff 1963.
34 E.g., Bevan and Wilson 2013; Davies et al. 2014; Altaweel 2015.
35 For example, see Adams 1981; Wilkinson and Tucker 1995.
36 Altaweel and Squitieri 2018.
37 Davies et al. 2014.

Survey Data, Settlement Size, and Mobility

Data collected by Altaweel and Squitieri[38] have been primarily used to assess Bronze Age, or pre-AoE (before 800 BCE) β values, and β values for settlement systems during the AoE. These data represent regions that include northern Mesopotamia, southern Mesopotamia, southwestern Iran (Khuzestan, incorporating the area of ancient Elam), and Central Anatolia (around Kanesh). Other regions, such as around Antioch, have been analyzed, but they did not have data spanning the pre-AoE and AoE periods, and the surveys covered smaller geographical areas. Fig. 3 shows the β values from SIEM simulations, where the overall trend indicates declining β for different survey regions from the pre-AoE to the AoE. Here, declining β indicates settlement structures that are possible because of increased mobility. The results suggest that, in order to create the settlement patterns evident in the survey regions from the available data, β becomes generally low, where lower values indicate increasing and easier levels of mobility in the AoE. Periods prior to 800 BCE had β values greater than 0.5, with 0.651 being the highest value, while lower β values, such as those near 0.0 or lower, are generally found from the AoE (that is, beginning around 800 BCE). This trend is evident both within and between different regions. The figure uses approximate midpoint dates for different settlement surveys, and, therefore, this cannot be seen as temporally exact, but the trend is clear. Some regions, such as northern Mesopotamia, demonstrate a long-term, increasing ruralization with smaller settlements, while other regions, such as southern Mesopotamia, developed large primate cities. Regardless of whether a region grew more rural or became dominated by one very large site, declining β over time and into the AoE suggests that settlements in regions increasingly became easier to travel to.

Using data on settlement size collected in Altaweel and Squitieri 2018 and listed in Appendix A:3, it is also possible to measure disparities in urban size to suggest that populations began to concentrate in certain regions. Analysis of the largest and smallest sites within survey areas, measured in hectares and using Gini coefficients[39] to evaluate disparities in settlement sizes, reveals that Gini values increased as settlements became far larger in specific places in the AoE, including southern Mesopotamia and Khuzestan (Fig. 4). This indicates some sites grew far larger than their neighboring regions and cities, with cities such as Babylon and Antioch dominating more greatly in relative population distribution in the AoE than pre-AoE cities. In other words, there was more disproportionate population concentration in larger cities in the AoE periods. Both patterns, that is, lower β and higher Gini coefficients for settlement

38 Altaweel and Squitieri 2018; Appendix A:2.

39 Dixon et al. 1987. Gini coefficients indicate the degree of inequality or disparity in given distribution data. Often, this has been used to measure differences in wages or wealth.

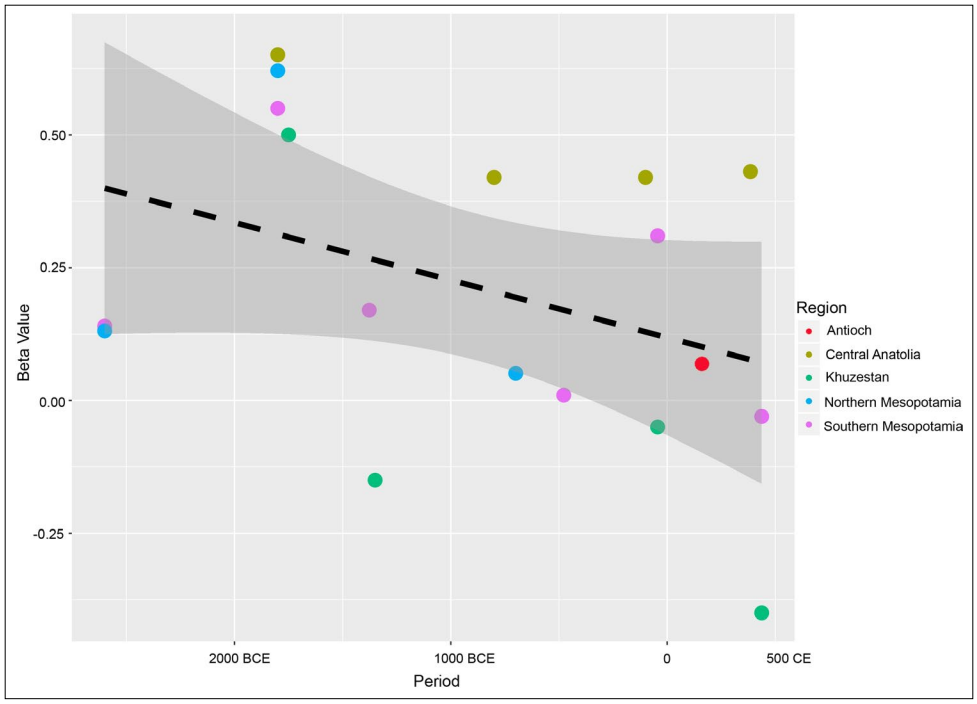

Fig. 3 Determined β values from SIEM models applied to different surveys in the Near East. The β values act as a proxy for mobility of populations that would enable observed settlement structures as determined in surveys. Dates given are approximate midpoint dates for different survey periods.

size, suggest increased mobility across the Near East.[40] For cities with disproportionately large populations, migration would have been the most likely factor enabling their urban growth. For Egypt, we are missing urban and settlement data that reflect mobility; however, we can infer that a pattern similar to that which occurred in the Near East also took place, based on the disproportionate concentration of population in Alexandria, at least by the Ptolemaic Period (305–30 BCE).[41] Overall, it is likely that a large disparity between the largest site (in this case, Alexandria) and other sites suggests that a similar pattern of relatively easier movement resulted in the urban hierarchies that were present in Egypt.

40 Altaweel and Squitieri 2018; Palmisano and Altaweel 2015; Altaweel 2015; Davies et al. 2014.
41 Chauveau 2000.

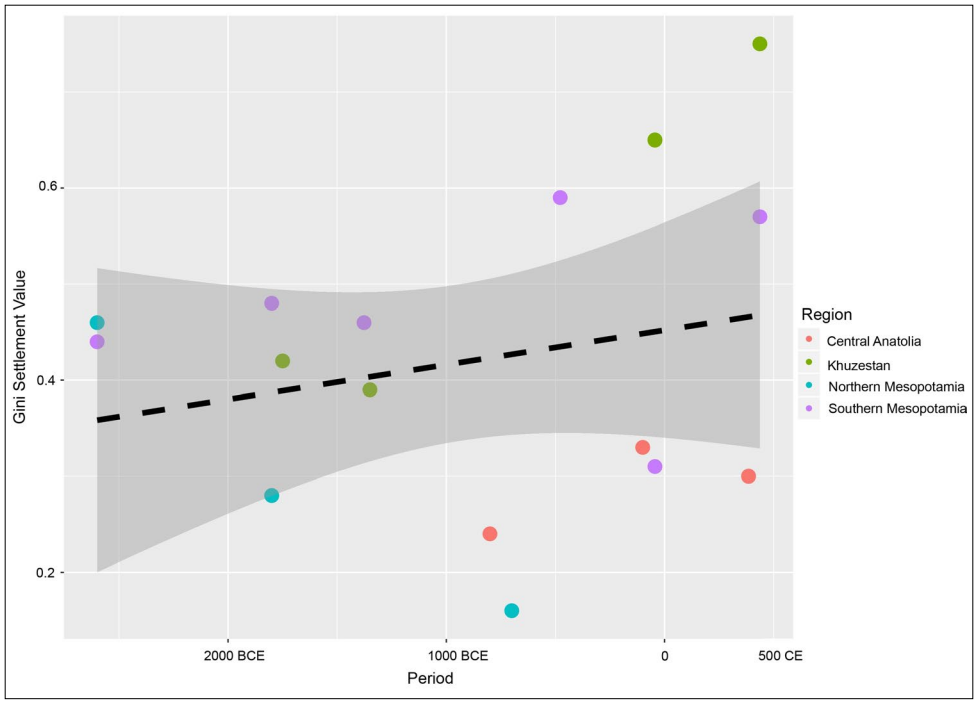

Fig. 4 Gini coefficient values graphed over time for settlement survey regions, which measured disparity between site sizes. Overall, particularly in regions where sites became very large, the trend indicates increased disparity between smaller and larger sites in the AoE. Sites such as Babylon and Ctesiphon became relatively more dominant in size in comparison to their neighboring sites.

Other Supporting Data on Migration

To support the results observed above, we present a brief survey, using archaeological and historical data, that demonstrates that new populations did move to different regions. Our intention is to provide empirical evidence supporting greater population mobility, as suggested above, for the AoE investigated. In Egypt, Hellenistic and Roman Alexandria has been seen as a wide mixture of Greek and non-Greek populations that had migrated to the city, where populations concentrated from around the Mediterranean and beyond.[42] Syncretized Greco-Egyptian art and religion symbolized the multi-ethnic populations of the region and city. Migration increased not only after Hellenistic influences (that is, from 305 BCE) in the wider Mediterranean but also in

42 Haas 1997; Fraser 1972.

earlier periods within the AoE. Naukratis and Elephantine[43] in the Achaemenid period are examples of urban populations with different cultural backgrounds intermixing prior to Alexander's conquest. In Elephantine,[44] Jews and Arameans were likely placed there during the Achaemenid period, potentially accelerating a process of multi-ethnic populations within urban centers.

To the east of Egypt, during the Neo-Babylonian (626–539 BCE) period, Babylon in southern Mesopotamia became a primate city in the region, growing to perhaps as much as 800–1000 hectares. The city had also become ethnically diverse, with Elamite, Arab, West Semitic, Egyptian, Jewish, and other populations present.[45] In the Neo-Assyrian period, Nineveh witnessed an influx of foreign populations; in large part, these were populations that had been physically imported to work on major projects during the expansion of the city.[46] In the Achaemenid period, evidence for an increased level of migration is suggested at Persepolis through the Persepolis Fortification Archive, with workers brought to work on the new capital.[47] Ethnic groups mentioned included Elamite, Capadoccian, Indian, Egyptian, and Semitic populations, with at least six different languages used in the site's historical data. Similar patterns are evident in later periods, with cities such as Dura Europos and Palmyra in Syria providing evidence for at least seven different spoken languages and having places of worship for many different cultures and gods,[48] reflecting populations from regions spanning from Greece in the west to Iran in the east. Overall, we can see that urban regions began to receive an influx of distant, foreign populations, including in both some of the largest cities, for example, Babylon, and smaller towns, such as Dura Europos. This pattern persisted throughout much of the AoE.

A pattern of increasing hybridization of material culture characterizes most periods within the AoE, across an area spreading from the eastern Mediterranean to Central Asia. This pattern can also be used as a proxy for increased population movement and the multi-ethnic characteristics of populations. This phenomenon was the consequence of easier movement of artisans and the dissemination of their design ideas over a greater area than had previously been possible,[49] along with the emergence of a cosmopolitan, culturally-mixed clientele demanding cross-cultural styles they could identify with.[50] Similarly, the emergence of universal languages used cross-culturally

43 Dandamaev 1989, 114.
44 Porten 1996.
45 Moukarzel 2014; Zadok 1979; 1990.
46 Zaccagnini 1983.
47 Dandamaev et al. 2004, 293; Stolper 1984.
48 Kaizer 2009; Sommer 2018, 181.
49 Zaccagnini 1983; Roaf 1983.
50 Colledge 1977; Grajetzki 2011; Invernizzi 2012; Langin-Hooper 2013; Stein 2014.

across distant regions during the AoE[51] and universal religious doctrines relevant to people of various ethnicities[52] can be connected to greater movement and intermixing of people of various cultural backgrounds.

Wages and Other Economic Data

While settlement pattern data suggest that mobility increased during the AoE, wage data can be juxtaposed to these data to indicate how labor mobility may have been affected. Wage data for unskilled or low-skilled workers throughout the pre-AoE and AoE have been previously published;[53] we utilized these data to investigate trends spanning nearly three millennia. The data here utilize converted wages to wheat liters/day, which are standardized to make values comparable across different periods. For Mesopotamia, most data derive from cuneiform tablets recording wages, often in grain or equivalent measures. Mostly papyrus and/or parchment data from Egypt similarly record wages using grain measurements. Median wage estimate values for given years are used in analysis, although ranges of possible liters/day are given. In cases where dates are not exactly clear, we have given estimates based on the approximate timeline provided by the sources. In some cases, the dates given are exact. Fig. 5 shows wage data temporally, and primarily covers the regions of southern Mesopotamia and Egypt, which have by far the most data. Egypt and Mesopotamia dominate in our sources for wages, and because of this, another analysis can be done in which all data outside of these regions are removed, as they are often isolated data. Fig. 6 shows only southern Mesopotamia and Egypt from the third millennium BCE until 600 CE. It is noticeable here that the two regions, Egypt and Mesopotamia, begin to converge on between 2–5 liters of wheat/day between approximately 450 BCE and 250 CE. In Egypt and southern Mesopotamia, σ = 4.14 liters/day for wages prior to 450 BCE (2300 BCE – 505 BCE), with an average of 8.42 liters/day, while σ = 1.35 liters/day for wages between 450 BCE and 250 BCE, with an average of 3.1 liters/day. The data generally show less volatility in wages and less dispersion after the mid-first millennium BCE, reflecting a potentially stabilizing effect of migration on wages. Further evidence for convergence might be suggested by Roman wage data for unskilled workers. Estimated unskilled labor values for the Roman Empire between 20–301 CE

51 Gzella 2015; Horrocks 2010.
52 Ulansey 1991; Berkey 2003; Drake 2005.
53 Harper 2016; Stol 2016; Civil 2011; Jursa 2010; Rathbone 2009; Scheidel 2009; Spalinger 2006; Farber 1978; Hallock 1969; Appendix A:4.

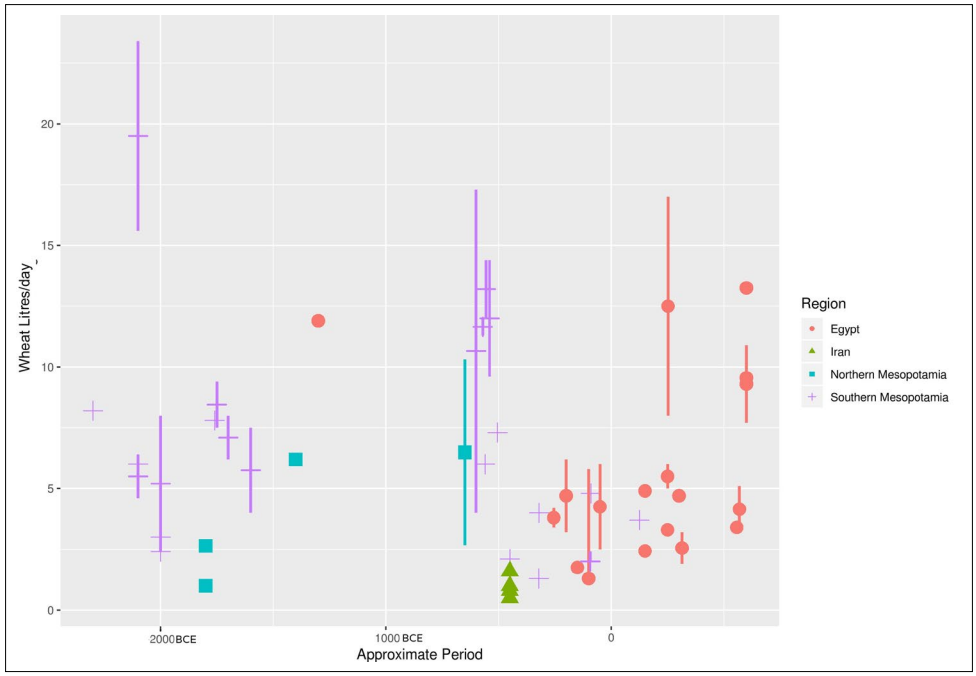

Fig. 5 Wage data and ranges in wheat liters/day for Northern Mesopotamia, Southern Mesopotamia, Iran, and Egypt from the third millennium BCE until 600 CE.

ranged between 1.07–4.35 liters of wheat/day,[54] with the average of these data being 2.23 liters/day; somewhat lower than the Near East and Egypt data, but also showing less variation than data from before 450 BCE.

Between 252–600 CE, greater variation in wages (σ = 4.23 liters/day) is evident, with relatively more limited data available. Wages are generally higher (μ = 7.43 liters/day) in that time. This may reflect instability or upheaval in Egypt, where many of the data come from, during a period of wide conflict between the Roman and later Byzantine empires against the Sasanian Empire. From the third century CE, increased conflict and trade disruption in Egypt and the Near East are evident.[55] However, much of the higher average is explained by data from around 600 CE. Scheidel indicates that during the final half of the sixth century and throughout the seventh century, higher pay is generally evident for workers.[56] The Justinian Plague (541–542 CE) may

54 Rathbone 2009.
55 Drinkwater 2007; Cameron 1993.
56 Scheidel 2009.

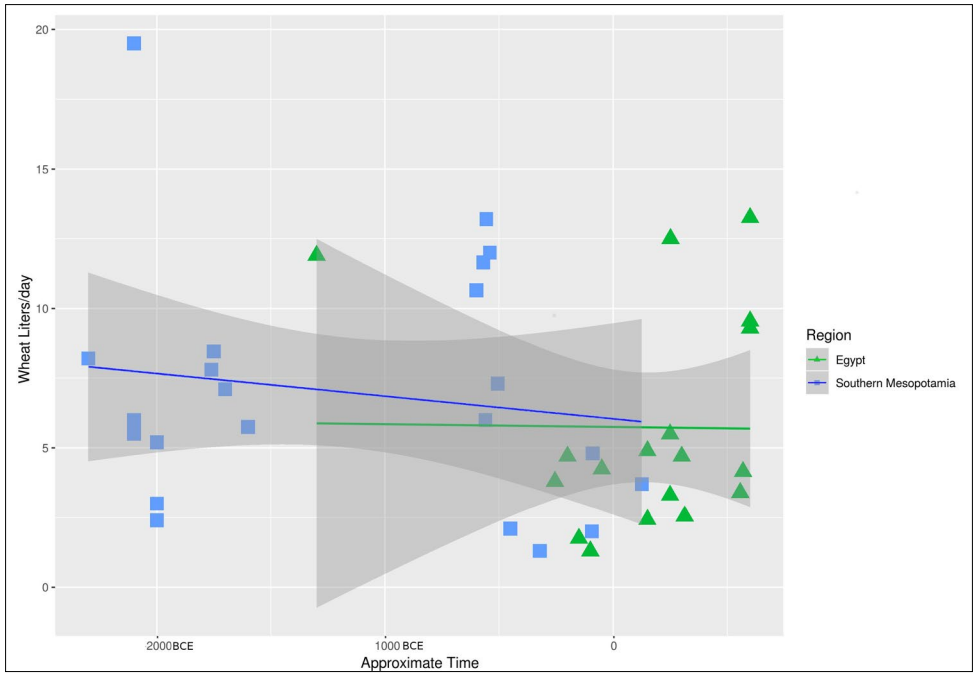

Fig. 6 Median wage data estimates in liters of wheat/day for Southern Mesopotamia and Egypt showing declining wage trends in later periods.

have reduced the pool of available labor across the eastern Mediterranean basin in the mid-sixth century CE,[57] potentially leading to increased wages in its aftermath, at least for a few decades. Nevertheless, outside of the period between the mid-third century CE and 600 CE, particularly between 550–600 CE, the overall and long-term trend was towards a decline in wage rates where rates also became relatively stable during long intervals in the AoE. Overall, the average unskilled wage was about 3.86 liters of wheat/day from about 450 BCE to 550 CE, increasing to around 4.78 liters/day if data from after 550 CE are included. Data variation is also relatively low between 450 BCE–550 CE, with results showing σ = 2.61 liters/day. Overall, these results are still well below pre-450 BCE wages (average of 8.42 liters/day and σ = 4.14 liters/day). Appendix A:4 provides the wage data discussed and relevant references used.

57 Harper 2016.

Agricultural Output and Productivity

To supplement data on wages, evidence for increased agricultural activity, namely, intensification and/or extensification of agriculture, could demonstrate the need for more unskilled laborers and, therefore, more labor migration, at least for some regions. Once again, the evidence mainly comes from southern Mesopotamia, although Egypt also provides some important data. In both cases, intensive and/or extensive agriculture is evident. In southern Mesopotamia, increased seeding rates are evident: they were 4.63 L/ha of seed from about 2000–1700 BCE and increased to 7.1 L/ha in the sixth century BCE. Yields also generally increased from around 861 kg/ha to 1071 kg/ha over the same period.[58] Plough teams also covered a smaller area in the sixth century BCE, as crops were more tightly planted. Teams in the sixth century BCE typically covered between 18.75 to 37.5 ha per day, while in the Ur III (ca. 2100–2000 BCE) period, teams covered 39 to 52 ha.[59] This may have occurred because crops were more tightly planted, requiring tighter turns of the plough within smaller areas. This suggests that more labor was also likely needed to manage and work fields that were more intensively cultivated, which would have the benefit of increasing yields per hectare. Other data suggest that potentially intensive or extensive agriculture continued into later periods. Recent archaeological and botanical evidence from northern Babylonia in the late first millennium BCE and early first millennium CE suggests the existence of extensive date palm cultivation around major canal/irrigation systems.[60] In this case, phytoliths, which are remains of plant materials, demonstrate a large presence of cultivated date palms. Phytoliths also indicate more intensive use of irrigation in the early first millennium CE relative to earlier, pre-AoE periods. Yields for date palm crops could exceed over 5000 L/ha, but its cultivation required intensive labor and a large labor force.[61] Dates would have been a specialized product that would have also been an important item of exchange.[62]

In Egypt, documentary data from the Roman period, between the first and third centuries CE, suggest grain yields were between 7 : 1 and 16 : 1 in terms of yield-to-seed ratio, suggesting higher productivity than other regions in the Mediterranean, including the central part of the Roman Empire in Italy.[63] In the Fayum region of Lower Egypt, particularly high yields were achieved through crop rotation. Given that the technological level would have been approximately equal throughout most Mediterranean regions, it was likely that, in Egypt, a larger work force was needed to achieve

58 Jursa 2014, 118.
59 Halstead 1990, 189.
60 Altaweel et al. 2019.
61 Pirngruber 2017, 106.
62 Van der Spek and Leeuwen 2014; van der Spek 2004.
63 Rowlandson 1996; Rathbone 1991.

higher yields and to maximize production, particularly for grain that was exported to places such as Rome. More fertile fields would certainly have aided production, but substantial labor would also have been needed to take advantage of this fertility.

Archaeological data also suggest more intensive/extensive agricultural activity in the Levant, specifically in the form of new and improved designs for olive presses. The simple olive oil presses of the Late Bronze Age (that is, before the AoE), composed of a circular basin or a flat pressing surface, shifted into more elaborate lever presses in the AoE (from the seventh century BCE onwards), representing an increase in production from about three liters to about twenty liters of oil produced in any single use. This is accompanied by an increase in the number of attested presses during the AoE compared to previous periods.[64] The seventh century BCE site of Ekron, in the Southern Levant, was the best attested example of such an increase; its 115 presses were capable of producing around 500 tons (about 548,500 liters) of olive oil.[65] These olive presses indicate higher production rates and possibly a more specialized agricultural economy in relation to olive and olive oil production. Overall, the seventh century BC Southern Levant shows patterns of agricultural specialization, with coastal areas devoted to wine and olive oil production and internal areas devoted to grain production.[66] More changes in production technologies occurred later in the AoE, and these may also be proxies for increased or, at least, more intensive agricultural activity, both in the Levant and in the Mediterranean. Starting in the second half of the first millennium BC, new and more efficient designs for processing grain were introduced, such as the Olynthus mill, the Pompeian mill, the rotary mill, and, during late antiquity, the screw-press for wine production, all of which represented great technological steps upwards compared to pre-AoE production technologies.[67] These new production technologies greatly improved the output of typical Mediterranean and Levantine agricultural products such as flour, olive oil, and wine. They may be considered to have been essential to the higher level of production needed to meet the increased demand for specific agricultural goods, including trade of specialized agricultural goods, that emerged during the AoE and that also required an increase in laborers, despite the greater efficiency in the processing of agricultural goods. Large numbers of laborers would have been needed to tend and harvest the higher quantities of fruits and grains that could now be processed. A boost in processing capability may have meant that more labor was needed for harvesting to meet export and domestic demands.

64 Eitam 1987.
65 Eitam 1996.
66 Faust and Weiss 2005.
67 Alonso 2015; Frankel 2019; Lewit and Burton 2019.

Discussion: Movement and Labor

We contribute to the understanding of migration and labor by presenting varied empirical evidence for changes to labor wages and associated population mobility and other data affecting agriculture and settlement. The work argues that labor migration enabled declining unskilled-labor wages and wage convergence, which is evident particularly during the second half of the first millennium BCE and going into the early centuries of the first millennium CE in areas such as Babylonia and Egypt. Wages have been seen as related to key historical events and changes, with wars and diseases being included in the major causes of their fluctuations.[68] Easier population movement between regions, we believe, has the effect of increasing labor supply, which results in decreased wages and generally stable and equal wages across wider areas. Wage volatility is subdued when the labor supply is high and mobility is maintained.[69] Hence, population movement may have also had an influence on wage inequality, where declining relative wages are evident. In the recent past, convergence in wages has been one result of increasingly mobile labor.[70] Taylor and Williamson indicate that convergence in wages was the primary pattern evident in wages in OECD countries in the late nineteenth century.[71] Wage convergence is also evident in the twentieth century due to migration, including wage convergence within a single country, such as in the United States when African American populations began to migrate from the southern parts of the United States to northern cities.[72] We suggest a similar effect occurred in Egypt and Mesopotamia during the AoE. Although increased demand for labor could have counteracted declining wages or, at least, dampened the effects of an increased supply of labor in some regions, wage convergence is a likely outcome when workers gain the ability to travel longer distances and communication is facilitated. It is possible for various reasons to witness increased wages, such as during the Justinian Plague, but for Egypt and Mesopotamia, the wider trend indicates declining wages as having been evident. Increased labor mobility can also provide greater wage stability through a steady supply of labor, which can offset shocks such as the mass loss of workers in times of war or disease. This may not have always been the case, such as during the Justinian Plague, which also occurred during a time of conflict between the Sasanian and Byzantine Empires that potentially prevented increased labor flow. Additionally, a widespread plague may have meant that labor numbers would have declined over very wide areas covering the eastern Mediterranean and beyond.

68 Scheidel 2017; Harper 2016; Scheidel 2009.
69 Roy 2007.
70 Boyer 1997; Williamson 1996.
71 Taylor and Williamson 1997.
72 Boustan 2009.

However, we can see that, for long periods between 450 BCE–550 CE, populations could more easily move between Egypt and Mesopotamia, enabling some potential insulation against labor wage shocks.

Movement data from settlement patterns, which provide data on settlement structure and size, indicate increased population mobility, which allowed for easier flow of labor across greater distances. This movement was not uniform: it resulted in a high population concentration in some areas, such as along major rivers (e.g., the Tigris and Euphrates; the Babylon and Ctesiphon) and the eastern Mediterranean (e.g., Antioch), while other regions, such as the interior of the Near East in eastern Syria, had relatively lower population densities.[73] The timeline for when wages for labor grew more uniform (or converged) is not clear, but we see that in Babylon, by the sixth century BCE (and possibly earlier) and during the Roman Period in Egypt, there was high demand for specialized agricultural products and evidence for intensive/extensive production. We have the clearest evidence for wage convergence in the years 450 BCE–250 CE, possibly continuing to about 550 CE, with similar rates of pay for unskilled workers in Egypt and Mesopotamia and only slight wage volatility. Wages between 250–600 CE show relatively lower volatility than the pre-AoE, although they are generally more volatile and higher than 450 BCE–250 CE. Egypt and Mesopotamia belonged to the same state in the fifth and fourth century BCE, which would have facilitated an easier flow of labor. That period may have represented the most likely period when wages would be the most similar between these two regions, although this is not certain given the lack of data in both regions.

Although shorter-term volatility in labor supply and wages were likely, due to the effects of war, instability, and disease, the results demonstrate a general, long-term trend of lowering wages that align across time and space. Other regions, such as the Levant, show similar agricultural intensification as Mesopotamia and Egypt, suggesting potentially comparable patterns in wages. However, in these cases, we have fewer data on wages; hence, it is difficult to track wage trends in an area such as the Levant from the pre-AoE into the AoE periods. Decreasing wages are particularly evident in Babylonia, where we have dates from both the pre-AoE and AoE periods, although the extent to which such a decrease can be extended to other areas is not clear. Settlement data and agricultural production and specialization from areas other than Babylonia do suggest greater labor mobility that would have been required for at least some of the periods within the AoE. Additionally, coastal regions in the eastern Mediterranean, Egypt, and southern Mesopotamia witnessed greater urbanization during the late first millennium BCE and early first millennium CE, suggesting more labor and increased agricultural demand in those areas. The pattern witnessed in southern Mesopotamia

73 See Mazzoni 1991–1992.

and, to some extent, in Egypt may have occurred in surrounding regions, although evidence for long-term wage patterns are lacking.

Similar to more modern cases, we find evidence of increased population mobility driving urban growth, whereby a select number of cities grew far larger, with increased disparity in urban size, as indicated by Gini coefficients and lower β to indicate easier mobility. Agricultural specialization, including agriculture for export, while becoming more efficient in production, still required a large labor pool that would have motivated some of the migration required for labor demands. Overall, settlement patterns indicate more mobile populations that could allow agricultural regions to specialize in the AoE. As conurbations such as Babylon and the Ctesiphon urban zone grew, wages appear to decline and become more similar to those in regions such as Egypt.

Conclusion

This work contributes to the literature on universalism, empires, population mobility, and historical economics by introducing evidence for labor migration. Even though Egypt and Mesopotamia often were part of different states during the AoE, common cultural themes, such as Hellenistic influences during the Ptolemaic and Seleucid Empires, indicate close cultural interaction or even a type of cohesion. This could be a form of '*asabiya* or cultural cohesion,[74] although it did not often lead to a single large state dominating the entire eastern Mediterranean. Nevertheless, commonalities evidently did allow more intense cultural interaction through common languages and other shared cultural values (including religion), with migration being central. In modern labor markets, affected by trade agreements and easing of labor flow, such as in European Union member states, converging trends in wages are evident.[75] In these cases, relatively open borders enable greater labor mobility, which can lead to wage convergence across member states in a labor market. We cannot suggest that the AoE labor market and systems such as the modern EU are very similar, but there could be similar effects on wages in both due to higher labor mobility compared to what preceded each system. Universal empires, which encourage greater migration and population integration or even cohesion, and modern labor and trade agreements both help to diminish labor flow barriers.

Future work could focus on collecting more archaeological and historical metrics to demonstrate more clear evidence for wage convergence and the role of labor migration. Building a model that demonstrates the relationship between mobility

74 Turchin 2003; 2005; Ibn Khaldun 2013.
75 Zhou and Bloch 2019.

and wages is one potential outcome that might be more achievable if more data are collected. Previous work has already collected data on wages; however, one major challenge is that collecting wage data on skilled workers is complex, since specific roles do not always correspond across different periods. Data that help to establish clearer settlement patterns across a wider area covering the Near East and Egypt, including with better and more precise dates, could also support current evidence on population mobility. Historical data for other regions, that is, outside of the Near East, and discussing economic events and migration could certainly benefit research demonstrating the presence of convergence and/or increased labor mobility across even wider regions. Another focus for future work could also be the interaction between capital (wealth) flow and wages in different areas of the Near East and Egypt during the AoE. This could be analyzed in the framework of changing trends in wealth disparity, both within primate cities and between cities and their surrounding regions. Capital flows would affect investment and where wealth would concentrate and attract labor. Finding their relationship to labor flow is relevant for scholars interested in wages and economic/social inequality in the past.[76] For now, the contributions we make relate to integrating wage and mobility data using settlement patterns. Juxtaposing these data with qualitative and other data suggests that a relationship between wages and mobility is evident in the AoE.

Acknowledgments

We would like to thank the Beyond the Silk Road (BaSaR) project based at the Albert Ludwig University of Freiburg for inviting us to contribute and organizing this volume.

Figure Credits

All figures by the authors.

76 E.g., Levitt 2019.

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Network Power
Intensification and Innovation in Western Afro-Eurasia during the Hellenistic–Roman Era

Miguel John Versluys

"(...) the socio-material networks humans establish in the release from proximity are far from stable and under their control."[1]

Introduction: Beyond Centers and Peripheries

Historical and archaeological narratives traditionally locate the emergence of Chinese civilization, dated roughly to the second part of the second millennium BCE, in the area of the lower reaches of the Yellow River, namely, the so-called Central Plains. This would be the heartland from which Chinese (Han) civilization eventually sprang. The *periphery* implied by the identification of this *center* was mainly imagined to be in the north, the steppe zones of inner Asia. Accompanying this opposition, as ever, was the dichotomy of the civilized center versus the barbarian periphery. Recent discoveries at a site called Shimao, located in the highlands near the steppe and far away

1 Knappett 2011, 12. I am grateful to Sitta von Reden and her team for the invitation to Freiburg. This paper has profited from the critical feedback of Lara Fabian and Eli Weaverdyck (Freiburg); Rebecca Henzel, Lennart Kruijer, and Suzan van de Velde (Leiden); as well as Anna Collar (Southampton), Vito Messina (Turin), Martin Pitts (Exeter), and Astrid van Oyen (then Cornell). It has been written in the framework of the NWO VICI project *Innovating Objects: The Impact of Global Connections and the Formation of the Roman Empire,* which I coordinated at Leiden University during the period of 2016–2022, as well as the Anchoring Innovation Gravitation Grant research agenda of OIKOS, the National Research School in Classical Studies, supported by the Dutch Ministry of Education, Culture, and Science (OCW) through the Dutch Research Council (NWO). Marike van Aerde kindly corrected the English text.

Versluys, Miguel John: Network Power: Intensification and Innovation in Western Afro-Eurasia during the Hellenistic–Roman Era, in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 233–269.
DOI: https://doi.org/10.17885/heiup.1582.c22729

from the Central Plains, should be regarded as groundbreaking in this respect.[2] At Shimao, archaeologists unearthed a very large settlement of about 400 ha with walls and gates built of stone. From the palatial center, characterized by a large stepped pyramid of seventy meters' height, not only elite mansions have been preserved but also traces of industrial craft production. According to the most recent interpretations, we deal here with the capital of China's most important transregional polity at the time, characterized by a careful civic planning that combined political, religious, and military functions in relation to each other. Shimao was the economic center of an immense Chinese exchange system that also tapped into the existing Afro-Eurasian trade networks. The site is dated to the centuries around 2000 BCE; more than half a millennium before developments in the Central Plains gained momentum. This is especially remarkable because it seems as though a series of core symbols for the "birth" of Chinese civilization, such as the jade scepter, was already present here. Most scholarship has regarded it as merely a "zone of contact" between the Central Plains and the steppe so far, but it looks like it was here, in fact, that the symbolism for what would much later develop as "classical" Chinese was already developed. Instead of *peripheral,* therefore, Shimao might in fact have been *central* to innovations within Chinese culture by laying the foundation for the Yellow River traditions of the Central Plains half a millennium later.

This example illustrates the methodological and theoretical problems that come with the notion of center–periphery, at a glance. While they are intended and used as defining characteristics, in fact they are *relative* terms. This has been acknowledged for a long time already.[3] Peripheries can be centers and centers can be peripheries; this is a matter of development throughout time, as the example above has illustrated, and it is likewise a matter of perspective. To evoke yet another historical example to illustrate the latter point, one can picture "the Roman world" as an entity in itself, with the Italic peninsula and the city of Rome at the center and, hence, peripheries located along the borders of the map—as our traditional maps of the Roman Empire still look. One can also, quite literally, turn around the perspective by 90 degrees and picture "the Roman world" as a polycentric periphery, that is, with "Europe as a

2 See Jaang et al. 2018, on which this section is based. The title of their article is "When Peripheries Were Centres."

3 Dietler 2005, 59: "[…] the very use of the analytical concepts of 'center' and 'periphery' poses some alarming dangers in that it all too easily melds the physical and the metaphysical into a reified landscape of hierarchical binary difference. In other words, it risks reproducing a set of linkages among binary oppositions (center/periphery; civilization/barbarism; dynamic/static; modern/premodern) that were fundamental to colonialist ideology and then smuggling them into a stable geography of power that cartographically inscribes and naturalizes these metaphysical constructs." See also Fabian 2021.

small cape of Asia," to use the famous phrase by Paul Valéry.[4] (Fig. 1) This difference is significant for our historical and archaeological interpretations.

All across western Afro-Eurasia, the Hellenistic–Roman era has been pivotal in terms of expanding geographies and heightened cultural interconnectedness.[5] These are accompanied by dramatic changes as well as enduring innovations in all domains of society. One can think here about breakthroughs in medicine (the development of the idea of humorism); geometry and mathematics (the invention of the number 0); technology (the invention of wind mills and water-clocks); economy (full monetary consolidation and new accounting machines); architecture (the application of concrete and the use of aqueducts); religion (the coming into being of monotheism); literature (the establishment of the literary genres we still have today); and philosophy and the arts. This essay explores how to account for all this intensification and innovation in western Afro-Eurasia historically and, moreover, how to investigate it methodologically.[6] Following from the above observations, I first pay attention to chronological developments, the *longue durée,* in this respect. The analysis also tries to shift the topographical perspective by not focusing on a single site or region but, rather, by regarding western Afro-Eurasia in the Hellenistic–Roman period as one world, stretching from the Atlantic in the west to the landmass between the Caspian Sea and the Persian Gulf in the east, and by discussing how we can study that network on such a (transregional or global) scale.

To investigate the relation between intensification on the one hand and innovation, which I understand as a change in behavior or interactions brought about by the emergence of something new, on the other, I will draw on the concept of network power.[7] I define this, after David Singh Grewal (2008), as the power of the network to generate innovations that subsequently become novel standards, enabling further cooperation among the members of that network. The novel standards for large parts of western Afro-Eurasia in this period are traditionally labelled as "Hellenistic" and "Roman." By using these terms, it is (implicitly) assumed that the innovative power of these new standards has something to do with their being "Hellenistic" or "Roman" in

4 For a brief characterization of the Roman world as a polycentric periphery of Afro-Eurasia, see Nederveen-Pieterse 2015. For Valéry's concept, see Wesseling 2011.

5 By "western Afro-Eurasia" I mean (in the context of this article) the wider Mediterranean, North Africa, and the Near East. For the concept of Afro-Eurasia itself and the importance of using it, see Dunn 2010.

6 "Intensification" I define as a process of increase, of stepping up, of drawing more things together with a more extreme result. For my definition of "innovation," see below.

7 There is an important difference between invention, the creation of something new, and innovation, which is a change in behavior or interactions brought about by the invention or, in other words, its societal impact. See also the conclusion to this essay. I will not deal with the (difficult) difference between change and innovation. As can be deduced from my definitions, in this essay, the terms are used in a rather overlapping way.

Fig. 1 Rotated map of (central and western) Afro-Eurasia.

the first place; hence an interpretation of change and innovation in society in terms of "Hellenization" or "Romanization." This essay uses the idea of network power to try and locate that agency elsewhere. Its main methodological point, therefore, focuses on the premise that the network itself is responsible for change, innovation, and the emergence of new standards in the first place. The network is, thus, the prerequisite and backdrop across which innovations happen and the force that propagates them as new standards—and this is a recursive process. This is possible, I will argue, because networks overcome distance and establish new relations by drawing things together.[8] Innovation is created out of the novel combinations that networks are able to provide. Some of these innovations develop into new standards that become instruments in overcoming distance and drawing things together in their turn. Often, this is a process of unintended consequences.[9]

A network is a system of connections that consists of entities (nodes) and the links between them. These links can be particularly close (strong ties) or less so (weak ties).[10] Developing a "network perspective" on western Afro-Eurasia during the Hellenistic–Roman era, as this essay sets out to do, is appropriate for two reasons, one historical and the other methodological. The historical justification lies in the fact that the region is characterized by an ever-increasing intensification, present already in the previous millennium—a process that I will summarize in the next section, entitled Histories of Encounters. The methodological importance is evident from the large amount of scholarly attention for networks and (social) network analysis in our field as well as related concepts such as connectivity and globalization, especially in the last decade or so. Those ideas I will discuss in a subsequent section, in relation to each other. With these two important considerations in place, I will present the concept of network power in greater depth, drawing on both a modern and a historical example to illustrate its ability for sociocultural analysis. This potential will also be illustrated by discussing several different examples of intensification and innovation in western Afro-Eurasia during the Hellenistic–Roman era in the next section, concerning the Kharga oasis in Egypt, the city of Gordion in Asia Minor, the Palmyrene and Indian Ocean trade networks in Asia, the region of Commagene at the Euphrates, and the city of Seleucia-at-the-Tigris in present-day Iraq (Fig. 2). All these examples I only present as short "vignettes" on the basis of the research of others, and only as generalized illustrations of how relations between intensification and innovation might look

8 Following Latour 1986 and, more generally, Latour 2005 with Ahrweiler and Keane 2013 for innovation networks as methodology. For innovation understood as such a process of bricolage, see Versluys and Sluiter 2023.

9 For this notion that purposive social action (always) has unanticipated consequences, see (already!) Merton 1936.

10 Definitions after Collar 2021, a recent, concise overview of networks as a methodological tool (with a focus on material culture) with all previous bibliography.

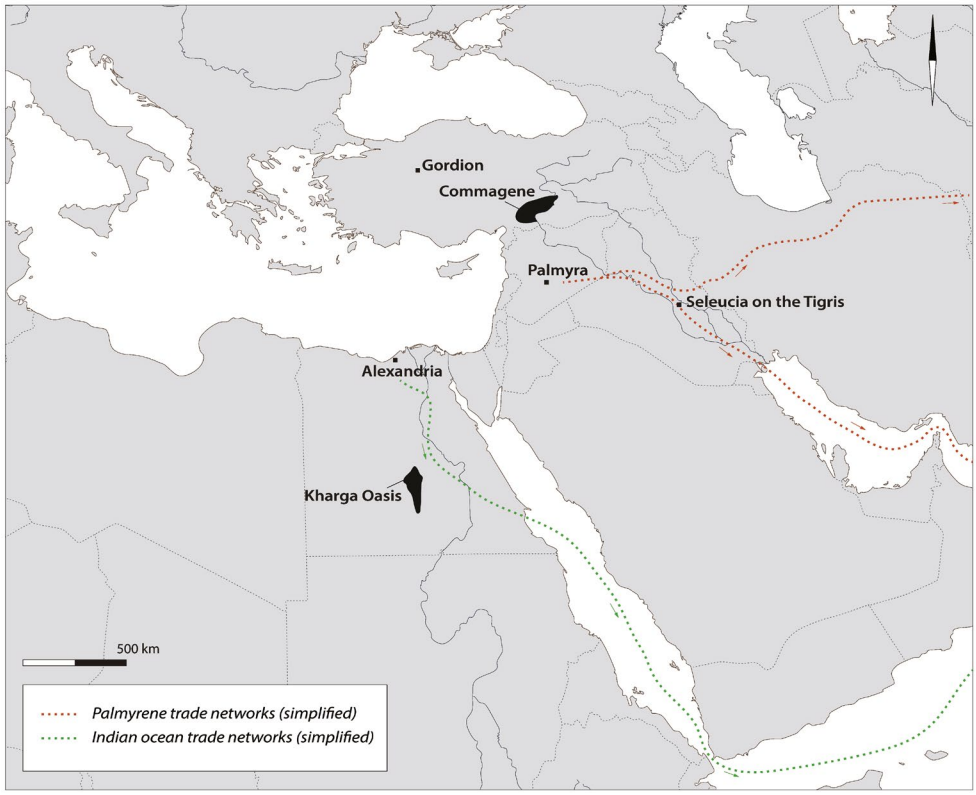

Fig. 2 The various sites and regions discussed in the text together with the Palmyrene and Indian Ocean trade networks.

in this period. The conclusion will return to the notion of center–periphery, but now from a *longue durée* and network perspective, and ask why innovation often can be found in those places in the network that are characterized by what were traditionally called peripheries or borderlands, those enigmatic places "in between."

Histories of Encounters

The Shimao example briefly discussed above illustrates the importance of looking at long-term developments when trying to understand innovation and the role of certain sites or regions within that process. What seem to be distinct and independent, local or regional developments in topographical units X or Y often, from a *longue durée*

perspective, turn out to be histories of encounters instead. This is often observed across western Afro-Eurasia during the Hellenistic–Roman era as well. The economic and cultural explosion that started in the third century BCE was part of an intensification of connectivity that had at least started out in the Bronze Age, a millennium earlier.[11] It is, therefore, important to briefly summarize this development. To that end, I focus on the interplay between local, regional, and global as well as the *awareness* of that process, as both will prove to be important to understand the intensification and innovation characterizing western Afro-Eurasia in the Hellenistic–Roman period.[12]

The period around 1500 BCE witnessed a proliferation of networks (systems of connections), all across Afro-Eurasia.[13] The direct linkage between and among regions became so frequent that many scholars consider the middle of the second millennium BCE to be a turning point in terms of increasing connectivity.[14] For instance, in Egypt, the main political power in this period for western Afro-Eurasia, the Delta breaks away from the Nile Valley and becomes part of the interplay between the Near East, the Mediterranean, and North Africa much more intensively than ever before. This resulted in more maritime contacts and increased interaction in the eastern part of the Mediterranean in particular. Silver and copper were the main commodities in this period, and we witness a growing social complexity in exactly those sites and regions that functioned as nodal positions in this network, such as Crete and Cyprus. The trade of metals and other raw materials was supplemented by manufactured objects, such as metalwork and textiles, but also perfumed oils and their containers. The (local) styles in which these objects were made soon started influencing each other. As a result, we now see the development of a transregional (global) style in luxury goods that brings together a wide variety of stylistic elements, perhaps even boasting its cosmopolitanism.[15] Mental maps seem to have been changing as a result of increasing connectivity, as might be deduced from Egyptian literature of the period that shows that conceptions of the *kosmos* begin to move beyond the horizon of the Nile valley for the first time in Egypt's cultural history.[16] The collapse of this highly connected world towards the end of the second millennium BCE shows that interconnections had reached the level

11 For this "explosion" of the Hellenistic–Roman era (and its qualification as such), see Purcell 2014, 72.

12 For a comparable perspective, see Altaweel and Squitieri 2018, a volume that extensively draws on globalization theory by putting the notion of universalism at the core of its analysis. The remainder of this section summarizes and rephrases a more extensive paragraph on the issue published as part of Versluys 2022.

13 For transregional routes and material flows in the period before (c. 3000–1500 BCE), see Wilkinson 2014.

14 As Broodbank 2013, a history of the Mediterranean up to the emergence of the classical world in terms of globalization.

15 As Feldman 2006.

16 Assmann 2010, Chapter 1 for changes in Egyptian conceptions of the world from this perspective.

at which trouble could spread with alarming speed.[17] Centralized palace economies made way for more volatile, maritime trading practices, a process accompanied by a surge of innovations in maritime technology. The content and character of the network changed, and there certainly was political fragmentation and economic recession in some regions—though high mobility continued to play a role as well. This circulation of goods characteristic of the Bronze Age is followed by an ever-more-intense circulation of goods and people in the Iron Age. These people established permanent and culturally distinct settlements in distant regions. In particular, what scholars call the Phoenician and Greek "colonizations" stand out in this respect.[18] First Phoenician and subsequently Greek maritime entrepreneurs and fortune seekers soon connected almost the entire Mediterranean, thus tapping into comparable Atlantic and Central Asian circuits of exchange along the way. They developed new homes away from home to maintain and articulate new nodes in the network or to safeguard their commodities. Not only did this bring the "global" to a "local" level—think about the foundation of Carthage on the coast of North Africa by already cosmopolitan Phoenicians from the Levant around 800 BCE—but, simultaneously, ever more localities were making up the global network as a result.

One of the impacts of these processes was the emergence of something resembling a pan-western Afro-Eurasian cosmogony.[19] As with many other innovations from this period, including such crucial developments as urbanization and writing, this process can only be properly understood in terms of the interplay between the local, the regional and the global—or, in other words, as the impact of globalization.[20] The emergence of "universal" empires—perhaps the neo-Assyrian Empire can already be characterized as such, and certainly the Achaemenid Commonwealth—increased connectivity again further and in different ways, in several respects.[21] In a general way, empires facilitate exchange and, thus, increase connectivity. Moreover, imperialism forced the authorities to map their empire in order to administer it. Production of knowledge about the world, the space inhabited and ruled, moved center-stage as a result. Through its infrastructure and collection of geographical data, the Persian court probably had a better overview of what the world looked like than anyone ever

17 Phrasing and analysis after Broodbank 2013, Chapter 9.

18 There were, of course, (forced) movements of people in previous periods as well, but not as frequent and intense. For the many important differences between the ancient phenomenon and our modern understanding of the concept of colonization, see Hurst and Owen 2005. Note that also other communities, for instance, the Etruscans, were highly mobile.

19 See Bonnet and Bricault 2016, an important analysis of first-millennium-BCE religions from the Mediterranean, the Near East and Egypt from the perspective of interaction and connectivity.

20 For an analysis of the Iron Age Mediterranean in these terms, see Hodos 2020.

21 For universal empire as idea and reality in Eurasian antiquity and beyond, see Bang and Kolodziejczyk 2012.

had before. It seems that, around the middle of the first millennium BCE, a decisive breakthrough in geographical knowledge materialized exactly there. Comparative history projects, such as those by Herodotos, are part of this emergence of a global consciousness.[22] Herodotos' world encompassed Mesopotamia as well as North Africa; Spain as well as the steppes of southern Russia; Egypt and Aethiopia as well as the Danube region and the Celts.

The conquests of Alexander the Great, heir of the Achaemenids, brought nothing new structurally, yet they enhanced and intensified globalization processes and their impact even more. The perspective of the world as a single entity was further refined: Persian documentation provided Alexander with vital information, to which he, in turn, added by means of the *bematisteis* (land surveyors) in his consortium.[23] The conquests of Alexander, therefore, were as much the reflection of Afro-Eurasian connectivity as they constituted yet another catalyst for its intensification. Myth slowly began to give way to ethnography in order to explain world history and would, in the Hellenistic period, develop into something resembling a comparative scientific project, as exemplified by the library of Alexandria and many other centers of knowledge.[24] As a result, mapping culture and defining cultural identity in terms of the new, global network can be seen everywhere. It is at the heart of the cultural formation of, for instance, the Seleucid Empire, in which the unique and unprecedented decision is taken to introduce a linear and transcendent concept of (global) time.[25] Such a strategy is testament to the impact of globalization processes. The same seems to be true for all the major third-century-BCE cultural canonizations that were written to define what exactly constitutes local in this globalizing world.[26] These histories were an attempt

22 Pradeau 2015 for the concept of "mondialisation" in antiquity. For Herotodos as world historian representing the anthropological turn, see Stuurman 2008.

23 See Gehrke 2016, who talks about the "revolution" of Alexander the Great, rightly underlining its Achaemenid foundation as well as the importance of the period around 500 BCE, for this conceptual change.

24 This was, of course, never a process of replacing but rather of subjoining. Apollonius of Rhodes' *Argonautica,* written around 270 BCE, is an illustrative example, as it brings together myth, ethnography, and the knowledge of the Alexandrian library and *mouseion*. Its goal is, as Thalmann 2011 has argued, to create a set of traditions in order to explore the *oikumene* and understand it in terms of Hellenism.

25 As demonstrated in Kosmin 2018.

26 These "national histories" were compiled for Egypt by a priest from Heliopolis called Manetho; for central Asia by the Chaldean astronomer-priest Berossos; and for Phoenicia by the Hellenistic source of Philo of Byblos, while the Hebrew canonization of the Torah in this period represents the canonization of the history of the land Israel. Cf. Quinn 2018, 145, who understands these as attempts to impress the new Hellenistic overlords; I see this somewhat more broadly as a form of *glocalization,* the refractions of the global through the local and the resulting ability of individuals to operate across different scales, from the local to the regional to the global. Globalization is always glocalization, see Versluys 2025b.

to redefine and bring forward the local in what was becoming a truly global world, and, hence, they were all were dealing with the same intellectual project: mapping their own (local and regional) place within what had become a global space. All this resulted, towards ca. 200 BCE, in what we might call a global cultural horizon. When, in 154 BCE, Celtic tribes from the Iberian Peninsula negotiated with the Romans as part of a long series of hostile conflicts, their spokesman argued that the fact that the inhabitants of Segeda had fortified their city in defence of Roman aggression was not contrary to earlier treaties signed nor, he adds, "the common practice of mankind."[27] Such a formulation and its use in this context clearly show the awareness of being part of the global network of the *oikumene*.

Western Afro-Eurasia during the Hellenistic–Roman era, therefore, is the outcome, or formative effect, of a history of encounters. The intensification and innovation characterizing the period can, therefore, only be properly understood against this background.[28] The early Hellenistic period seems to be the "experimental" phase in which most of the real inventions take place. Through the relative stability brought about by huge empires that would slowly come to dominate the largest part of Afro-Eurasia in, first, the later Hellenistic period (from the Zhou and Qin dynasties in China via the Maurya and Seleucid Empires to the Ptolemaic eastern Mediterranean) and then the Roman era (from Han China via the Kushan and Parthian Empires to the *Imperium Romanum*), these inventions were distributed as innovations across the entire *oikumene* on an unprecedented scale, thereby, in turn, strengthening intensification once more.

Connectivity, Networks, and Globalization: Some Methodological Considerations

Analytical tools for thinking about the kind of "emergence of the global" as was briefly described and characterized above are still rudimentary.[29] We are used to studying cultures in a specific, local context and subsequently analyzing how they dealt with what comes from the outside. This being the case, we immediately evoke a distinction between the local, the regional, and the global—and between Self and Other. In this way, the history and archaeology of western Afro-Eurasia during the Hellenistic–Roman

27 Diodorus 31.39.

28 As so compellingly and convincingly illustrated for late Republican Rome by Moatti 1997.

29 For the utmost importance of having the proper conceptual resources to understand the present and past in truly cosmopolitan terms, see the essay by P. Mishra entitled "Grand Illusions" in *The New York Review* LXVII/18 (2020), 31–32, in which he argues that simply broadening the picture and adding a few unfamiliar names to the analysis is not enough.

era has often become one of dichotomies, for instance, between Greek and non-Greek or Oriental; between Egyptian and (non-Egyptian) Mediterranean or Near Eastern; between Roman and Native; et cetera.[30] It is still heavily debated, for instance, whether the city of Susa remained Persian or became Hellenistic; whether the Seleucid Empire was Greek or Oriental; to what extent Palmyra and its religions were Roman or, rather, Parthian; et cetera. As a result, we have created a picture of western Afro-Eurasia during the Hellenistic–Roman era that is hyphenated at best, with Susa being Greco-Persian, the Seleucid Empire being Greco-Oriental, and Palmyra being Romano-Parthian. But how to investigate western Afro-Eurasia in the Hellenistic and Roman period on local, regional, and global scales simultaneously and as the outcome of previous connectivity processes that developed over time?[31] How to make room in our analyses for something like included alterity in order to move beyond the Self–Other dichotomy? [32] How to arrive, in other words, at a de-hyphenated view for western Afro-Eurasia in the Hellenistic–Roman era?[33]

A first step in that direction is to regard the concept of connectivity as central to historical analysis. For the Mediterranean, this was exemplified by Horden and Purcell's *Corrupting Sea,* a holistic and long-term history of the Mediterranean that envisions connections and investigates the many regions not only in their own right but also as quintessentially part of the same cultural ecology.[34] Although less ambitious and detailed, Altaweel and Squitieri now provide a similar overview and perspective for the Near East.[35] Because of this focus, the history of the ancient world becomes less a history of separate containers (Greeks, Romans, Syrians, Phoenicians, Babylonians, Persians, Egyptians, etc.) and more a history of a single reservoir that is variously characterized by flows and blockages integral to the movement of people, ideas, and objects. As a result, concepts such as "crossroads," "middle ground," and "hybridity" then start to replace these earlier, separate containers. This is a gain. It is important to realize, however, that every geographical unit or culture is, in one way or another, at

30 See Versluys 2025a for more background and detail.

31 These two questions are equally central to Ma 2015: an exploration of continuity and change at Hellenistic Priene in terms of cultural interaction and conflict, pointing out both the long-term and global nature of these issues.

32 For included alterity, see Dupont 2002.

33 This is something as important for the past as it is for the present; see, for instance, Pitts' *Afropean* project (Pitts 2019), which tries to make sense of black identity and experience in Europe from the idea that Africa has, in fact, always been a part of Europe. Instead of the hyphenated Afro-European, therefore, we should talk about *Afropean,* as Pitts proposes.

34 Horden and Purcell 2000, now with Horden and Purcell 2020. See Broodbank 2013 and Hodos 2020 for specific periods of Mediterranean history understood from this perspective as well as Manning 2018 for a focus on its economy.

35 Altaweel and Squitieri 2018, moving towards the impact of connectivity by stressing the notion of universalism.

a crossroads, part of the middle ground, or hybrid, especially in western Afro-Eurasia in the Hellenistic–Roman period. The explanatory power of these terms, therefore, remains limited. A critique on the concept of "middle ground" might illustrate this observation in greater depth. Famously coined by Richard White in his analysis of the Great Lake region between 1650 and 1815, it is now used for antiquity by many scholars, for instance, by Corinne Bonnet in her important studies of Hellenistic Phoenicia and its "multicultural" (religious) character.[36] The notion of middle ground moves us towards thinking in terms of interaction and cultural formation *between* distinctly separate regions or cultures. It underlines that cultural formation is a two-way process by definition, in which all involved play a role, and analyzes the essentially negotiated cultural forms that emerge "when two cultures meet." Its focus on how cultures produce something new together is an important step forward in conceptualizing how culture contact actually works.[37] At the same time, however, it could be argued that the concept is limited to the investigation of a context like western Afro-Eurasia during the Hellenistic–Roman era, as contact between many regions and cultures had already been going on rather intensively for a millennium at least, as was illustrated above. Treading the middle ground thus (implicitly) leads us back to think in terms of cultures x and y and the linear relations between them—in other words, the question of what happens "when two cultures meet." However, in the Hellenistic–Roman era, these cultures had already met a (very) long time before and had started to influence each other from that moment onwards. We do not, therefore, deal so much with the logic of distinct cultures and cultural flows between them but, rather, with the logic of a circular network that had functioned as such for some time already.[38] For the Hellenistic–Roman period, therefore, everything is middle ground—and that should be the point of departure for our analyses. Exactly the same critique applies to concepts such as crossroads or hybridity.[39] What, in Hellenistic-Roman Afro-Eurasia, is not at the crossroads or hybrid, in one way or another?[40]

36 White 1991; Bonnet 2013; 2015. See also Antonaccio 2013.

37 As can be deduced from the rich analyses in Bonnet 2015.

38 See (already) Andrade 2013, 11–14 for a similar critique. Instead of history, therefore, we rather deal with mnemohistory in this period; see Versluys 2022.

39 Cf. Hoo 2021, 561: "Thus, whereas many research agendas have adopted global mind-sets, expanding in geographical scale to look for connections, their analytical prisms have not." See Fabian 2021 for the same argument. I argue that "middle ground," "crossroads," and "hybridity" are such prisms: they are one step in the right direction but ultimately unsatisfactory, as they continue thinking in terms of cultural containers.

40 The term hybridity is steering interpretations in the wrong direction (that is, back to container thinking) even more strongly because of its biological overtones. As Palmié 2013, 464 rightly remarked: "the question is not *what* is a hybrid, but *when* is a hybrid." For more critique on hybridity as an interpretative concept, see Versluys 2017, 204–205 and Versluys 2025a.

A second important step, therefore, is to move from connectivity, in general and rather descriptive terms, towards its analysis in terms of networks.[41] We can investigate and specify connectivity by focusing on hubs and their specific place in the network, or we can try and investigate the strength, frequency, content, and directionality of the ties that hold the network together.[42] Networks allow you to model and better understand complex systems, which can even be explored for temporal networks through time-ordered sequences of graphs over a set of nodes.[43] Another form of network analysis is to look at the development of standardized, shared visual languages and other forms of *habitus* along the network and understand ancient societies in terms of such communities of style and practice.[44] Network analysis, in other words, has the potential to make the notion of connectivity both more specific and explanatory.[45] Networks are also important when we wish to better understand the spread of innovations. For the Roman period, for instance, Anna Collar has analyzed the spread of the North Syrian storm god Jupiter Dolichenus, named after the site of Doliche in Commagene, in these terms.[46] On the basis of some 430 inscriptions, scholars are able to document the swift and wide spread of this novel religious phenomenon, from Syria all the way to Scotland. This was traditionally understood in terms of the diffusion of a distinctly Eastern element to the West. Collar, however, convincingly links the success of this innovation to the highly mobile and communicative military network formed by (ethnically very diverse) officers within the Roman army, who took Jupiter Dolichenus all around the Roman world with them. The coming into being of the god itself, moreover, can only be understood as a history of earlier encounters. Jupiter Dolichenus is not a genuine and "authentic" god from the locality of Doliche but, rather, the invention of a tradition based on a variety of translocal, networked developments.[47] A network approach adds to earlier interpretations the ability to locate the success of this innovation not exclusively in its intrinsic qualities but also, if not mainly, in the social connections between the adherents. The spread of Jupiter Dolichenus is, therefore, not a linear process of diffusion of an original, Oriental element from northern Syria to temperate Europe; it is the western Afro-Eurasian network that is responsible for the "invention" of Jupiter Dolichenus in this particular form, while

41 For network analysis and the ancient world, see Knappett 2011; 2013; 2017; Collar 2013; 2021; Brughmans et al. 2016, all with rich bibliography.

42 Knappett 2017 for the identification of these parameters.

43 Holme and Saramäki 2013. Cf. Ahrweiler and Keane 2013 for innovation networks.

44 Feldman 2014 for communities of style and practice. Cf. Hoo 2021, 562: "[…] instead of tracing foreign sameness […] against the backdrop of political networks and trade relations between societies and peoples, we should shift our units of analysis to translocal *contexts, situations* and *practices* across Eurasia."

45 As illustrated by van Oyen 2016b through the concept of relational constellations.

46 Collar 2013, whose conclusions I follow here. Cf. Blömer 2017.

47 For this complicated and fascinating story, see extensively Blömer 2017.

it is network power that makes the god into a new standard in (large) parts of that world. Both the emergence and the spread of this religious innovation can, therefore, only be understood in terms of network circularity. Exactly the same argument has been made for the Egyptian–Hellenistic–Roman goddess Isis.[48]

Globalization, lastly, focuses on the impact of all this (intense) connectivity and circularity.[49] The concept is, therefore, eminently suited for studying and gaining a better understanding of a quintessentially cosmopolitan world like western Afro-Eurasia in the Hellenistic–Roman period, as well as its cultural products.[50] It is a fruitful methodology because it invites us to take intense connectivity and multiculturalism as points of departure for our analyses. Our interpretations thus shift from *inter*-cultural connectivity, with related acculturation questions of who influences whom and to what extent, towards *intra*-cultural connectivity, which regards all these cultural traditions as relative and fluid while simultaneously and fundamentally being integrally part of a single, Afro-Eurasian container.[51] Intra-cultural connectivity still asks questions of connectivity and networks, but it focuses on their inherent functioning and impact. In addition to documenting the network and the functioning of its connectivity, therefore, the intra-cultural connectivity central to globalization focuses on how and why, in what particular way, people, groups, or cultures *embed* the global diversity that they were confronted with. Subsequently, it studies the impact of their engagement with this global diversity in the short and the long run by inquiring what new cultural constellations and innovations it resulted in.[52] Globalization, therefore, has ample attention for local and regional differences regarding connectedness as well as the fact that networks are (always) manipulated to create of reinforce power relations.[53] Departing from the idea of intense connectivity within a global network, it investigates a specific and finite number of connections that make up the regional or local constellation. Indeed, everything is global, but in very different and differing ways.

48 See Versluys 2015, now with the important essay by Mazurek 2020, tellingly entitled "Fashioning a Global Goddess."

49 Globalization is not a concept exclusively tied up with modernity and is now much used to analyze the connected past as well; see Jennings 2011, Pitts and Versluys 2015, Hodos et. al. 2017, Boivin and Frachetti 2018, and Versluys 2021 and 2025b for this and theoretical background.

50 For globalization as a framework to understand Afro-Eurasia in the Hellenistic–Roman period specifically, see, for instance, Brosseder and Miller 2018, who talk about "[…] a motley matrix of distinct local cultures that are interconnected through their differential engagements with components of a 'global' vocabulary of culture" as well as Hoo 2021, who defines it as "a multidimensional and *trans-scalar* set of processes of ever-increasing connectivities between different localities."

51 For intra-cultural connectivity, see Versluys 2017 and Pitts 2019.

52 This argument is further developed and illustrated in Versluys 2025a.

53 As the "vignettes" discussed below will illustrate. For globalization theory being strong in analyzing the local as well as dealing with asymmetric power relations, see Versluys 2021 and 2025b.

In summary, connectivity—the release from proximity—is a crucially important point of departure in understanding what drives world history.[54] It often is used, however, as a rather general and descriptive term alone. Network analysis, in whatever form, adds a methodology to connectivity. Globalization, on the other hand, adds a focus on increase, impact and experience to both connectivity and networks. It has, therefore, not been the intention of this section to describe and understand the notions of connectivity, networks, and globalization as separate methodologies. On the contrary, although they are often used for a different focus in practice, they are, in my view, overlapping, as they all aim for the same goal: to understand how "the career of […] webs of communication and interaction constitutes the overarching structure of human history"[55] and, thus, to arrive at a de-hyphenated reconstruction of the (ancient) world.[56] This overlap is illustrated by the notion of network power, in which all these characteristics come together. It is to network power, therefore, that we will now turn.

What Is Network Power?

In this essay, the notion of network power is generally used in accordance with D. S. Grewal's 2008 book entitled *Network Power: The Social Dynamics of Globalization*.[57] Here, I briefly summarize the main elements of his ideas concerning what he calls "the social dynamics of Globalization processes" and discuss two examples of it. Grewal follows sociologists such as Anthony Giddens and Roland Robertson by putting "time–space compression" at the heart of his understanding of globalization.[58] That

54 The notion "release from proximity" I borrow from Knappett 2011, who borrowed it from the prehistoric archaeologist Clive Gamble (see most extensively Gamble 2007, now with Gamble et al. 2014), who borrowed it from evolutionary anthropology. The term is meant to indicate that the ability to transcend the face-to-face and to interact across distances, to think and act across spatial scales, is what makes the human species distinctly human.

55 To use the point of departure of the bird's-eye view of world history presented by McNeill and McNeill 2003, who argue that such a perspective forces the researcher to consider archaeological, genetic, linguistic, biological, environmental, medical, and documentary evidence in relation, as already illustrated in McNeill 1992.

56 Within our field, therefore, the three discussions could profit more from one another (and in terms of methodology as well), as their common goal is to arrive at an understanding of the connected past with all its local, regional, and global complexity; cf. Brughmans et al. 2016. Giessmann 2014 is an original cultural history of networks and network thinking that had already started in antiquity.

57 Grewal 2008.

58 Giddens 1990, 64 sees globalization as a dialectical process and says that it can be defined as "the intensification of worldwide social relations which link distant localities in such a way that

term is meant to indicate that processes of globalization are about changes in global geography and the experience (or awareness) thereof in the first place.[59] This time–space compression enables, but does not provide, new methods of social coordination. That coordination, Grewal argues, "is achieved in the adoption of shared standards that allow global social networks to emerge following the technological changes that bring people in contact with one another."[60] Propelled by people's desire for access to (members of) a network, these standards tend to spread. Their distribution, made possible by innovation, often results in more innovation—for the contexts in which they are applied and, as a result, also for the standards themselves. The greater the number of people using a standard, the more valuable it becomes for others to do the same. Standards thus "[…] have a power that grows in proportion to the size of the network they unite."[61] Therefore, the idea of network power can explain the coming together of elements as innovation as well as its success: network power understands innovation as the outcome of increasingly shared practices.[62] Standards often come into being as an unintended consequence, out of a combination of intrinsic and extrinsic reasons. As the network power of a standard grows, however, "the intrinsic reasons why it should be adopted become less important relative to the extrinsic benefits of coordination that the standard can provide: the conventional value of a standard will come to outweigh any intrinsic merits or demerits."[63] Thus new standards are inherently universalizing, not because of what they originally stood for but for what they are able to achieve for new users. The example of Jupiter Dolichenus, briefly mentioned above, is a fine illustration of this for our period; Roman *terra sigillata* is another.[64] Important properties of the network that make it function as a successful, universalizing new standard include, according to Grewal, availability, compatibility, and what he calls malleability.

local happenings are shaped by events many miles away and vice versa." Local transformation, therefore, is as much part of globalization as is the extension of connections across time and space. Globalization, in other words, is always *glocalization.* Robertson 1992 stresses the mental processes involved by underlining that globalization is about the intensification of consciousness of the world as a whole. Cf. Pitts and Versluys 2015, 11 also for other definitions in this vein.

59 The latter aspect is important, and it is for that reason that I paid a relatively large amount of attention to it when dealing with the long-term description of increasing connectivity in western Afro-Eurasia up to the period of 200 BCE above. It is clear that conceptions of the globe changed a lot in the centuries around 500 BCE in particular.

60 Grewal 2008, 20.

61 Grewal 2008, 27.

62 See Versluys and Sluiter 2023 for innovation as just such a socially embedded action, a practice, characterized by creative improvization while being always and inherently inclusive in the geographic, cultural, social, and economic sense of the word.

63 Grewal 2008, 34.

64 For an illuminating analysis of *terra sigillata* in these terms, see van Oyen 2016a.

To provide an example of network power in our present-day world, Grewal discusses the emergence of the global dominance of English.[65] How is it possible that a single language emerged as an almost universal standard of, in particular, global commerce, governance, and technology? To start with, this has nothing to do with the intrinsic or unique qualities of English. English is an Indo-European language, developed from the patois of Germanic immigrants, fused with Latin and French, using Phoenician letters and Indian numbers, and originally printed and diffused in books produced by moveable type invented in China.[66] The English language, in other words, is a history of encounters, as all historical phenomena are. There is nothing that makes English inherently better or more efficient as a system of (global) communication—having easier and more logical grammars, other languages might even be more suitable for that purpose. Moreover, English is not the language with the largest population of speakers in absolute numbers worldwide: Mandarin and Spanish can both claim more. While the emergence of English itself was, thus, already a history of various encounters, this also counts for its trajectory towards becoming a universal standard. In that trajectory, many different forms of agency play equal and alternating roles. There is, for instance, force involved with the spread of English within, first, the British Isles and Ireland and, then, the British (English-speaking) colonies around the globe. In colonial India, the English language pushed native education in this particular way in order to create an intermediary (ruling) class. But during the postcolonial period, the spread of English continued, not due to direct (colonial) force but for other reasons. Herewith, another form of power played an important role: the rise of the United States of America as the world's major economy as well as the American origin of many (global) communication technologies. That the United States happened to take over from Britain as a global power, however, was chance: the English language just happened to be at the right place at the right time.[67] With the current desire of millions of (young) people worldwide to speak English, reason and force seem to coincide. It stands to reason because of the fact that joining this language standard will provide them with more opportunities for global coordination: learning English is investing in your future. English has surpassed "the threshold of inevitability," however, and therefore represents the force of unification at the very same time—at the expense of other standards.[68] The most important quality that English nowadays possesses, therefore, is that it is *the* foreign language to learn for a young person looking for "release from proximity" and being ambitious to mark the

65 Grewal 2008, Chapter 3, strongly relying on Crystal 2003.

66 Robertson 2017.

67 If France had been the dominating global power of the second half of the twentieth century, in other words, the global dominance of English would be very different today.

68 Grewal 2008, 78.

future. This has resulted in the circumstance that, worldwide, English is now mostly taught by non-native speakers to other non-native speakers in order to communicate with what are mainly non-native speakers as well. The defining quality of the English language, then, is that it is able to regulate access to a significant and growing network that promises global coordination. Many young people in present day India learn English, a process that includes both reason and force (and tradition). But this force is very different from the one that made (elite) children in India learn English a century ago. A final point of network power, as underlined by Grewal on the basis of this example, is that it is a complex phenomenon and never a zero-sum game. While English is emerging as a global standard in particular spheres, regional languages gain importance at the same time. While some local languages die off because of the power of a global standard, others are strengthened or revived out of the assertion of local identities. Moreover, the network power of English is mirrored by the rise of network power of regional languages such as Hindi, Indonesian, or Arabic, at a different scale and for different audiences. What network power dynamics bring to all of them is change from the outside through the experiences of all the new users.

Although Grewal is clearly (and laudably) aware of the fact that globalization, as a process, is not unique to modernity, his analyses and examples deal with our modern world alone.[69] For that reason, it is interesting to end this section with a historical case study of what network power entails. This example is based on an article by John Law that deals with the Portuguese conquests of large parts of the world in the sixteenth century.[70] Law tries to explain the reasons behind Portuguese imperialism, and he does so by means of the *longue durée* network perspective argued for above. He therefore focuses not on individual explorers or conquests, as is traditionally done, but rather on how and why the network changed in relation to what came before—and what those changes resulted in. I also advance this particular example because, in his analysis, Law focuses on how the new phenomenon called Portuguese imperialism came about in the first place, prior to the moment it was up and running as the new standard. As has been described in the introduction of this essay, the network is both: the backdrop through and across which innovations happen as well as the force that propagates them as new standards. Grewal analyzes the second aspect of this recursive process in particular; Law has more attention for the first, and he thereby stresses the key role of long-distance control. Let us, therefore, briefly follow his argument.

69 Which is only logical given his scholarly background and career. Note, however, his explicit remark at the outset of his work (Grewal 2008, 17): "The failure to grasp the long history of globalization epitomizes an ongoing failure to understand its real significance today."

70 Law 1984. Where the emergence of the global dominance of English as analyzed by Grewal and briefly summarized above might be usefully compared to the functioning of Greek and of Latin in western Afro-Eurasia in the Hellenistic–Roman period, Law's analysis of Portuguese imperialism might be instructive for discussions on the nature of Hellenistic and Roman forms of imperialism.

The Portuguese vessel called the *carreira* (carrack) played an important role in the emergence of Portuguese imperialism. *Carreira* were bulky ships with large castles and several sails, able to carry a large amount of cargo. These vessels were able to do many new things in what quickly became a larger world. What kind of affordances enabled them to play such an important role in long-distance control? Law distinguishes several: 1. they could not easily be taken by smaller boats, which was the traditional mode of attack in Asia; 2. they did not have to make many stops during their voyages, which enabled them to cover vast distances relatively quickly; 3. their different and differing sails enabled them to navigate a wide range of different conditions, which allowed the Portuguese to handle all kinds of winds; 4. they needed relatively small crews but these men had to work together intensively, which made each ship independent and self-containing; and lastly, 5. they were able to return, more or less according to schedule, to their point of origin, which enabled Europe and Asia to become part of a single system in a structured way. It is only in combination with all the other elements in the network, human and non-human, that the carracks were able to play their part in Portuguese long-distance control, Law maintains. Examples of the human sort include, of course, the crews sailing the ships, but also Portuguese bureaucrats managing the trade system. An example of the non-human is provided by the cannons that the carracks were able to transport to Asia and use themselves. Law rightly underlines that what he calls *compliance,* the way in which all elements fit together, is essential to the functioning of Portuguese long-distance control. It is only through the compliance of these human and non-human elements that all the preconditions for long-distance control on a global level—such as mobility, durability, the capacity to exercise force, and the ability to return—are achieved. Innovations are often the result of attempts at compliance, this important process of coming together.[71] Take sixteenth-century navigation. A century earlier, there were two different systems of navigation in Europe: a Mediterranean one and a north-western European one. These were dissimilar, as they were characterized by different instruments and practices, developed according to different environmental circumstances. To make long-distance control possible, the Portuguese had to leave their European comfort zone and develop a method of navigation fit for their new, global context. They did so by making the determination of latitude dependent on solar and stellar observations. This was not something new in itself, but it had never been applied in this particular way before. The success of this novel, globally applicable method relied, Law maintains, on its simplicity. It assumed that most navigators had little grasp of the principles of astronomy. The method thus concerned simple rules, simple data, and simple instruments that could be handled through training. It was, in other words, innovation, not invention; capitalizing on the work of previous generations while bringing those elements together and using

71 What we now probabaly would call entanglement; see Hodder 2012.

them in a different way. This, then, enabled the development of other new elements for the network, such as written or printed texts and handbooks with instructions for navigation. It is important to realize that the power of the Portuguese mariners depended entirely on this.[72] In this way, both the structure and the mariner were the embodiment of numerous previous efforts. Portuguese imperialism, Law concludes, therefore relied on the bringing together of the right documents, the right devices, and (drilled) people in order to maintain long-distance control. Portuguese power was the ability to bring all these elements together in the right place, as allies to each other, in a manner of speaking. Portuguese imperialism, in this view, is an example of sixteenth-century globalization as a constantly improvising attempt to overcome and control distance. The continuation and increase of globalization processes implies that there is ever more distance to be controlled. This presupposes ever more and diverse allies as part of an ever-more-complicated network.[73] It also implies ever more innovations, understood as the coming together of already existing elements in new combinations.[74]

Law's methodological conclusion of his analysis of Portuguese imperialism is as follows:

> Of course kings and merchants appear in the story. But so too do sailors and astronomers, navigators and soldiers of fortune, astrolabes and astronomical tables, vessels and ports of call and last but not least, the winds and currents that lay between Lisbon and Calicut. […] if these attempts at long-distance control are to be understood then it is not only necessary to develop a form of analysis handling the social, the technological, the natural and the rest with equal facility, though this is essential. It is also necessary that the approach should be capable of making sense of the way in which these are fitted together.[75]

It is exactly these kinds of analyses, I argue, that we now should try and develop for (western) Afro-Eurasia in the Hellenistic–Roman era. Above, it has been argued that the first millennium BCE is characterized by an ever-increasing proliferation of

72 Law 1984, 253: "The structure of which they formed a part was, of course, all important. The Portuguese mariner, on a vessel with a canon, was indeed powerful. The same mariner, shipwrecked on a beach, was pathetically weak."

73 Law 1984, 235: "[…] it is not possible to understand this expansion unless the technological, the economic, the political, the social and the natural are all seen as interrelated," as the Portuguese effort "involved the mobilization and combination of elements from each of these categories."

74 For such a view on innovation as a continuous process of bricolage, see Versluys and Sluiter 2023 and below.

75 Law 1984, 235.

networks through which emerges, in the period around 200 BCE, something of a global cultural horizon. New ways of accumulating time and space, of drawing things together, of compliance, are the outcome of all this globalization—and are responsible for many of the innovations of the Hellenistic–Roman period. The processes we traditionally call "Hellenization" and "Romanization," therefore, are successful and innovative, as they provide new standards and new methods of social coordination for all involved. Their power is located in the network that they represent—a network that apparently performs well in terms of availability, compatibility, and malleability. Their emergence itself also emanated from that network, as a novel drawing together and mobilization of (a selection of) its various elements. The case studies in the section that follows, which are all attempts at long-distance control and the results thereof in terms of compliance, aim to illustrate this perspective.

The Innovation of Network Power in Ancient Western Afro-Eurasia

This section briefly presents, as short "vignettes" and on the basis of research by other scholars, several examples of intensification and innovation in Hellenistic Afro-Eurasia in terms of network power, as outlined above. In line with the *longue durée* perspective argued for in this essay, the first examples, dealing with Kharga and Gordion, already start in the Achaemenid period, during which similar developments had already been initiated.

What happens to the Kharga oasis in Egypt when it comes under Persian rule? A recent analysis by Henry Colburn demonstrates that the Achaemenid Empire had a profound impact on the landscapes and societies of the Kharga Oasis, though not in the way we usually imagine imperialism to work.[76] Many things in Kharga were transformed by the introduction of novel agricultural economies, namely, qanat structures and irrigation technology from Iran. This resulted in unprecedented levels of agricultural production, the successful introduction of new crops such as olives and castor beans, and population growth. The enduring success of this new agricultural economy, way into the Hellenistic period, was possible because the oasis was better connected than ever before. Through its inclusion in the Achaemenid Empire, it became connected with a larger network in both a metaphorical and a literal sense, for instance, through the Persian road system and the fact that a lingua franca (Aramaic) had now come into being to facilitate (trade) communication. Colburn, therefore,

76 Colburn 2018; now with Colburn 2019.

rightly talks about the many unintended consequences of the globalizing strategies of the Persians. Another example of this is the use of Greek silver coins as a novelty to the oasis and its economy—and a testimony to the role it now plays in larger networks of trade. Power relations between the new Persian overlords and the local population were certainly asymmetric. At the same time, there seems to have been little tension between these global aspects from a wider, Achaemenid world and local traditions. Although there undoubtedly will have been cultural conflicts, this should probably not be our primary point of departure in understanding the somewhat-longer-term impact of Achaemenid imperialism.[77] This is underlined by the fact that the Persians actively made use of many local strategies, native to the region for a long time already, such as the building of temples with the intention of linking the Oasis to the Nile valley. In terms of the intensification of production, mobility, and exchange, Achaemenid imperialism in Kharga was all about new connections and the possibilities these connections provided in the first place. It was also about Persian power, of course, but that power does not seem to have functioned as a stagnant factor for Kharga but, rather, as a catalyst, at least in terms of intensification and innovation. Networks are always manipulated, so it seems, to create or reinforce power relations, from which some profit and (many) others not. What is telling about this case study, then, is that the Achaemenid "center" is not profiting at the expense of the Kharga "periphery." Network power, Grewal says, "emerges with the possibility of social coordination via new global standards, made possible by the compression of space and imagination that technological advances have brought"—and that is exactly what we seem to be witnessing in Kharga.[78]

It is important to realize that globalization always implies (the possibility of) de-globalization. Although the overall trend of the first millennium BCE is one of increasing connectivity, this is certainly not a linear process that effects all localities in the same way. Network power, in other words, can result in both intensification and innovation, as well as stagnation and decline. The latter is what we seem to be witnessing in Hellenistic Gordion.[79] The network of the Achaemenid Empire initially provided Gordion with levels of intensification and innovation comparable to the

77 It thus seems useful to understand and study imperialism as a form of globalization as well. Although not dealing with networks and globalization explicitly, this is implied by a recent volume on imperial landscapes, deconstructing earlier notions of empire and imperialism in its conclusion (Düring and Stek 2018). Using the concept of empire as an interpretative tool only works, it is maintained, when you acknowledge "their intrinsic heterogeneity and dynamic nature" (351) and "the large diversity of trajectories and developments" characterizing them. As a result, "the idea of imperial power as it is often understood must be modified" (354). For Roman imperialism as globalization, see Versluys 2021.

78 Grewal 2008, 4.

79 Dusinberre 2019, on which this part of the section is based.

Kharga oasis because of the development of its sheep and goat husbandry that it enabled. The long-term impact of that network power, however, was very different than in Kharga. This is due to the fact that the conquests of Alexander the Great changed the strength, frequency, content, and directionality of the ties that held the Persian period network together.[80] Through Alexander's conquests, the Persian (road) infrastructure in Asia Minor collapsed, and for Gordion, this had many unintended consequences. As a result, for instance, imports from Egypt, Mesopotamia, Iran, and Afghanistan ceased completely. Even the very popular Greek-style vessels in Gordion were no longer imported from the Greek mainland but had to be locally produced. Overall, we see a decrease in population and a less intensive use of the surrounding landscape in Hellenistic Gordion when compared to the Achaemenid period: sheep and goat husbandry might have declined by sixty to seventy percent. This must have played a role in the demise of administrative practices and the political–military significance of the site, which was furthermore affected by the arrival of Galatians around the 260s BCE. After its conquest by the Roman consul Gnaius Manlius Vulso in 189 BCE, Gordion was abandoned. It seems, therefore, that network power miserly took from Gordion what it had generously granted earlier. As analyzed by Elspeth Dusinberre:

> Thus it seems that Gordion telescoped as a site almost as soon as Alexander left and the imperial infrastructure collapsed. Its population plummeted. The administrative structure of the site altered drastically. Major changes in land use were accompanied by major changes in domestic and public architecture. Large-scale public or administrative buildings fell out of use entirely, as did various industrial areas, to be replaced by simple domestic structures with no evidence for larger scale urban planning. People moved up onto the Citadel Mound and traded along the local river rather than traversing the elaborate Achaemenid-era road system. […] The archaeological record at Gordion combines with other historical and archaeological evidence to demonstrate the local response to the breakdown of infrastructure after the end of the Achaemenid Empire. The imperial collapse had a major impact on people's lives at this site.[81]

Although not addressing the concept explicitly, the work by Eivind Heldaas Seland has already strongly illustrated the potential of network analysis in terms of network power, for instance, when he contrasts the network of the Indian Ocean trade with

80 See Knappett 2017 and above for the identification of these parameters.

81 Dusinberre 2019, 127. To put it, with Grewal 2008, 72, in somewhat more general terms: "The force of unification varies across time based on contingent historical factors."

that of Palmyra.[82] Where the examples of Kharga and Gordion illustrate the (possible) effects of network power in a very general way, Seland is able to specify the nature of this power. The western Indian Ocean was, he underlines, "the central hub of ancient world trade. Chinese silk, Indian spices and textiles, African ivory, Arabian aromatics, Afghan gems, Egyptian glass, Syrian wine and Spanish silver were among the many commodities that crossed the ocean in the hold of ships from all coats of the Arabian Sea, Persian/Arabian Gulf, and Red Sea."[83] This was made possible by the monsoon winds and resulted in trading diasporas, whose members were experts on home and host cultures and could provide infrastructure. Trust was an important factor in this. On the basis of the *Periplus of the Erythraean Sea,* a report on Indian Ocean trade and navigation written by a merchant from Egypt in the middle of the first century CE in *koine* Greek, Seland is able to outline this trade network and to identify the nodes, what he calls clusters (groups of nodes), and the links connecting the nodes. The existence of a *lingua franca* was a *conditio sine qua non* for a proper functioning of these networks; this was Greek for the Egyptian network, Greek or Aramaic in the case of the Mesopotamian network, South Arabian in the case of Yemen, and Sanskrit and two other languages for India. As such, these networks were relatively weak; but this weakness explains also their flexibility and, hence, their success.[84] Seland contrasts this with the Palmyrene network in the first three centuries CE. This is rather different because institutions such as kinship, citizenship, and tribal affiliation were of great importance, both abroad and at home. This was, therefore, an ethnically based network of closed access and strong cohesion—thus illustrative of what you could call "the strength of strong ties." This did not prevent the Palmyrenes from developing strong cross-cultural skills, of course, but in character, their network was a very different one. Their strong ties and their dependence on a single, Syrian hub made them vulnerable, however: after the sack of the city by Aurelian in 272–273 CE, their network did not recover. This must be understood in terms of the degree of integration into the global network and the nature of that integration. Important properties of a network to make it successful, according to Grewal, are availability, compatibility, and malleability. The weak ties of the network of the Indian Ocean trade performed these tasks better, apparently, than the strong ties of the Palmyran trade network, at least in the long run.

Next, we turn from the effects of networks and their nature towards the question of innovation more specifically by briefly looking at Hellenistic–Roman Commagene

82 Seland 2013, basing himself on textual sources in the first place. Note that in reality these networks were (partly) overlapping, both being part of the terrestrial and maritime trading routes from China to the Mediterranean we call the Silk Roads (cf. Burgersdijk 2019).

83 Seland 2013, 373.

84 What is called, after Grannovetter 1973, the strength of weak ties.

and the changes created by new standards and new ways of social coordination there. If there is one region traditionally considered to be peripheral, it certainly is Commagene, at the Euphrates in northern Syria. This qualification was never meant in a positive way, and this specific (de)valuation of the region was seen as related to (the lack of) processes of intensification and innovation.[85] Recent research on Hellenistic Commagene, however, now comes to an almost opposite conclusion and understands the area as one of those nodes in the Hellenistic world where new and original sociocultural phenomena were created.[86] The dynastic project of Antiochos I, well known from Nemrud Dağ and other monuments, is a prime example of this. None of the elements that make up Antiochos I's project and its visual language is unique, novel, or even original. They were taken from a standard, almost Afro-Eurasian-wide repertoire—and in terms of Hellenistic dynastic representation, many of these elements already had crossed "the threshold of inevitability" in the period before. The only thing that can be described as unique is the way they were put together within the Commagenean context.[87] By virtue of doing so, Antiochos I's project, a local cq. regional constellation emerging from a global network, was highly innovative in many respects.[88] The original juxtaposing and blending of Hellenism and Persianism in a novel visual language, for instance, can be regarded as such. However, it did not develop into a new standard; the Commagenean innovation brought about by Antiochos I by bringing together different elements from large parts of Afro-Eurasia was not taken up throughout the network from which it was created. Was it not available, compatible, or malleable enough? It is interesting to note that other Commagenean inventions, however, were successfully perceived and taken up in the network. It has been argued, for instance, that the program of Agrippa's Pantheon in Rome was inspired and influenced by the religious innovations of the Antiochan project. The cult of Mithras, which, with its distinctive mix of Persian and Greco-Roman aspects, perhaps came into being in first-century-BCE Commagene, might also be an example of a successful Commagenean innovation. Another case in point is the cult of Jupiter Dolichenus, already mentioned above. In this case, too, elements suggestive of various cultural traditions were made into a composite novel, and this innovation successfully developed into imperial religion through network power. In a similar vein, the emergence of the *dexiosis* reliefs—with the heads of the figures in profile while the torsos are displayed frontally—has been suggested to be a first step towards the "hieratic frontality" that would characterize later developments

85 Hellenistic–Roman Commagene can often be seen characterized as "at the periphery of the Hellenistic world" or "a small state lost in the hinterland"; see Versluys 2017, Chapter 1.

86 Versluys 2017, on which this part of the section is based, now with Blömer et al. 2021.

87 We deal, in other words, with innovation, not invention.

88 It is striking that the outcome of this strategy of eclecticism has no real parallels at the time. It is possible, therefore, that Antiochos I purposefully sought to create a result that was unique. If that is the case, this strategy could be described as innovative eclecticism.

Fig. 3 Nemrud Dağ, West Terrace, dexiosis stele showing the king with Apollo-Mithras, current state (left) and as originally preserved (right).

in Syrian sculpture.[89] If we can really characterize the Antiochan idea of a pantheon, Mithras, Iupiter Dolichenus, and the semi-frontal *dexiosis* reliefs as Commagenean novelties and catalysts for further developments, this would indeed suggest that the area was a privileged place for successful innovation through network power. Before trying to account for the "centrality" of this "periphery" in this respect, however, let us finally move to what undoubtedly was a major center of Afro-Eurasia: the city of Seleucia on the Tigris (Fig. 3).

Seleucia was located on the western bank of the Tigris, around 500 kilometers from the Persian Gulf, at a point where the Tigris and Euphrates almost meet. It was one of the true *cosmopoleis* of the ancient world. Founded by Seleukos I in the fourth century BCE, on the principal road that led from Babylon into Iran, it flourished early and became a royal residence as well as an administrative center. Conquered by the Parthians in 129 BCE, the city continued to flourish into the second century CE. Its position was first taken over by the nearby city of Ctesiphon, which had already

89 For all these examples and their bibliography, see Versluys 2017, 249–254.

been founded by the Parthians and later became the capital of the Sassanians, and subsequently Bagdad.[90] Seleucia was strategically located in terms of connectivity. The city was difficult to defend because it was located in between everything—the north–south routes and the east–west connections, as well as being positioned along the Euphrates. It was a hub that relied on the network and its power more than a position that was strategic in military terms. In that respect, the *Naarmalcha* plays an important role: this is a large canal or system of canals linking the Euphrates with the Tigris. It seems that only in the Hellenistic period were all kinds of different methods of water management that had developed over the course of the first millennium really made into a system. The success of Seleucia-on-the-Tigris depended on this innovation.[91] The foundation of Seleucia by Seleukos I thus well fitted ongoing long-term developments in the region. He was keen to follow the network and its presumed power and, of course, increasingly developed it in doing so. Seleucia probably also lost its function as central hub because the network changed.[92] After the Roman conquest and the Roman consolidation of the borders of the empire, Seleucia was suddenly no longer strategically situated "in between" everything but, instead, at the outskirts of the Parthian Empire. What the unintended consequences of the globalizing strategies of the Hellenistic and Parthian Empires had first brought to Seleucia was now taken from the city; comparable to what happened in Gordion and in the case of the Palmyrene network.[93]

Moving from the network itself to network power in terms of innovation, we could briefly look at what is probably the most famous object from Seleucia: a bronze statue, smaller than life-size, portraying a "Weary Herakles" (Fig. 4).[94] At first glance, it clearly reproduces a well-known Lysippan prototype, the so-called Herakles Farnese, which was very popular throughout the Hellenistic world. As such, the Herakles from Seleucia has traditionally been understood as a token of the "Greekness" of the city. When observed carefully, however, processes of local appropriation are clearly visible: the Greek hero, resting on his club, reveals peculiar features that testify to creative appropriation and transformation in the local context. A bilingual inscription in Greek and Parthian incised on the statue's thighs tells us that the statue was transported to

90 This seems to be related to a shift in gravity from the Euphrates to the Tigris for reasons of water management; a development that is, in fact, comparable to how Seleucia itself had taken over its strategic position from Babylon.

91 It might be possible that the invention, in the Hellenistic period, of hydraulic machines like the *noria* enabled Seleukos I to shift the point of gravity from the Euphrates to the Tigris, where there were more options for agriculture.

92 I follow the analysis of Weyland 2019, on which this idea is based.

93 Additionally, it seems that the Tigris changed its course and irrigation had to shift eastwards. As a result, Seleucia was suddenly located on the wrong side of the river.

94 For this object and the analysis below, see Messina and Versluys 2021, on which this part of the section is based.

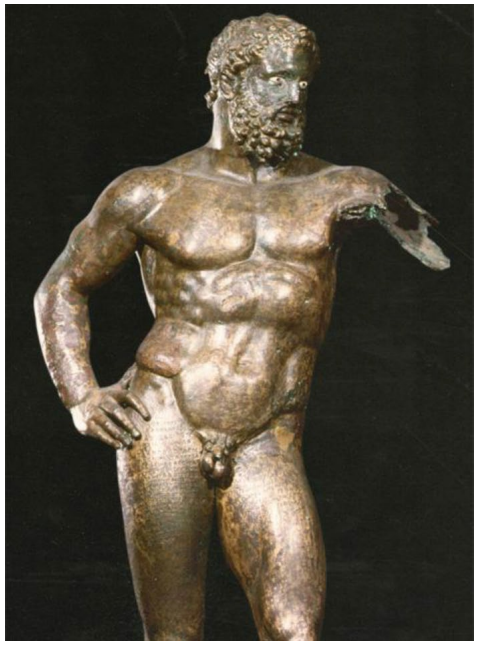

Fig. 4 "Weary Herakles" from Seleucia, also known as the Herakles of Mesene.

Seleucia from the region of Mesene (on the Persian Gulf) as spoils of war by the Arsacid King Volagases IV. In this remarkable inscription, dated to the second half of the second century CE, the statue is identified as both Herakles (in Greek) and Verethraghna (in Parthian). Terracotta figurines found at Seleucia and dated to the final centuries BCE already include smaller-sized reproductions of the "Weary Herakles," however, and we may therefore conclude that the Lysippan prototype was known and used at that time. Besides the religious appropriation of the Herakles Farnese as the Parthian Verethraghna in the second century CE as attested by the epigraphic record, there are more creative appropriations that make our Herakles into a Mesopotamian object rather than "a Greek statue in Seleucia." The second is the fact that the Herakles from Seleucia is rather smaller than bronze statues from the Mediterranean usually are. This ties in with the local tradition of placing statues of this height in the niches of temples. Local *habitus* also becomes clear, thirdly, from *how* the Lysippan model is reworked: Herakles places his hand on his side and not behind his back—where his hand usually is, as Herakles is supposed to be hiding the apples of the Hesperides. Moreover, instead of looking down, as the Herakles Farnese does, the Seleucia Herakles looks around and seems, in fact, not weary at all. The statue thus seems to be made for a local way of viewing, so to speak, to be placed in a niche in a temple and not to be appreciated in the round, as the Herakles Farnese explicitly was. The fourth and final indication concerns the materiality of the object: comparable statues from the Mediterranean are, in this period, usually made of an alloy, with lead being added to the bronze. Here, no lead is used but, rather, a small amount of silver. The ivory inlay of the eyes, moreover, points in the direction of local, Near Eastern traditions as well. We thus seem to deal here with network circularity instead of the "Hellenization" or "Romanization" of Seleucia: the bronze statue is a specifically Mesopotamian reworking that is global and local at the same time. It is the result of intense connectivity within a global network and the local constellation that testifies to a specific and finite number of connections within that network. As innovation, it also profited from the power of

the network: these types of Herakles were made in terracotta soon after and developed into something of a new standard.

Conclusion: One World Is Not Enough

Decades ago, world historian William McNeill was already arguing that regions "on the edge" were not peripheral, in the literal sense of that word, at all but, instead, constituted the world's most dynamic and innovative factors.[95] The example of the site of Shimao at the start of this essay effectively illustrated that point. We have seen, however, that notions such as center and periphery, edge, crossroads, or middle ground are, in fact, *relative* terms that depend on developments throughout time as well as on the topographical perspectives used. As such, their explanatory value is limited, especially for the period from the middle of the first millennium BCE onwards. Instead, I have argued, we should approach connectivity as a point of departure for our historical analyses of that global world and add networks and globalization as methodologies, with the intent of understanding their impact in terms of network power. From this perspective, we can rephrase the observation by McNeill through the following questions: what is the relation between networks and innovation in terms of network power? How to explain the relation between the intensification brought about by globalization and innovation? Why are certain nodes more important than others in terms of innovation?

This essay has discussed, in a very general way, some examples of intensification and innovation in western Afro-Eurasia in the Hellenistic–Roman period from a long-term perspective. It has simultaneously explored the related notions of connectivity, networks, and globalization as methodological tools to investigate such changes. To better understand the relation between intensification and innovation, the idea of networks and network power has proved to be most useful. Networks overcome distance, forge new relations, and draw things together. Change and innovation is created out of the elements that networks draw together and the novel combinations they allow for, as (in particular) the examples concerning Kharga, Commagene, and Seleucia have illustrated.[96] Some of these develop into new standards that, in their turn, both strengthen and widen the network further. The many changes in western Afro-Eurasia in the Hellenistic–Roman era, traditionally described in terms of "Hellenization" and "Romanization," can usefully be redefined in such terms of network

95 McNeill 1992.

96 Already Law 1984 and Latour 1986. This is also the conclusion of Ahrweiler and Keane 2013.

power.[97] The network is, thus, the prerequisite for these innovations to happen as well as the force that propagates them as new standards. As this is a recursive process, the intensification characterizing the first millennium BCE saw ever more space being overcome; ever more things were drawn together, which resulted in ever more new combinations that ultimately led to ever more change and innovations. This is how, in very general terms, the relation between intensification, globalization, and innovation can be explained, with innovation distinctly being understood from what is called a use-centered perspective.[98] But why, then, are certain nodes more important than others in terms of innovation?

In his brilliant book on the patterns of history (*Why the West Rules—For Now*), Ian Morris has proposed that, while geography drives social development and explains the cultural differences in the world—biology and sociology explaining all the global similarities—it is social development that determines what geography means.[99] This point of departure equally demands investigation of the relative importance and success of certain localities, or nodes, in relation to one another and as part of a global network. Morris remarks that successes in terms of innovation are contingent and often happen when, as a result of the intensification of connectivity, things do not go as planned:[100]

> As social development rises, cores expand, sometimes through migration and sometimes through copying or independent innovation by neighbors. Techniques that worked well in an older core […] spread into new societies and new environments. Sometimes such techniques flourished in the new settings; sometimes they just muddled along; and sometimes they needed huge modifications to work at all. Odd as it may seem, the biggest advances in social development often come in places where methods imported or copied from a more developed core do not work very well. Sometimes this is because the struggle to adapt old methods to new environments forces people to make breakthroughs; sometimes it is because geographical factors that do not matter much at one stage of social development matter much more at another.[101]

The various historical examples discussed in this article—ranging from prehistoric China via the case-studies concerning western Afro-Eurasia in the Achaemenid,

97 Larger and larger networks are beneficial, as they increase the possibilities for the identification of new functionalities and new problem-solving capacities; see Lane et al. 2009.

98 For such a perspective, which focuses not on the newness of inventions but on their impact as innovations, as this essay has done, see Edgarton 2006; Lane et al. 2009; and Versluys and Sluiter 2023 (all with abundant bibliography).

99 Morris 2010, Introduction.

100 What has been defined as "unintended consequences" above.

101 Morris 2010, 33.

Hellenistic, and Roman era to sixteenth-century Portuguese imperialism and the emergence of English as a global language in our present-day world—underline his observation that innovations are often the (unintended) result of things coming together. Those places in the network where many *different* things come together, therefore, potentially have the widest range of possibilities for innovation through compliance. This might explain why being "on the edge" or "in between" could be fruitful for innovation as a more (culturally) diverse range of elements can be expected to be available in those nodes of the network in particular, with strategies of compliance necessarily developing into a prominent part of the local *habitus*. Within ecological studies, this idea of innovative liminality is addressed through the concept of the *ecotone,* which is the interface region between two different ecosystems, for instance, a forest and a grassland. Such ecotones were traditionally considered marginal areas, in the sense that they would be about the meeting of the two neighboring ecosystems alone. There are interesting parallels here with the way in which regions "in between" were traditionally considered in our field as well.[102] Ecotones turn out to be very interesting in terms of innovation, however. Not only are they characterized by a greater quantity and density of species, they also contain elements of both the bordering ecosystems as well as organisms that are typical for and restricted to the ecotone. They are biodiversity hotspots. Ecotones are, thus, more than the sum of their parts and characterized by what you could call a surplus effect, being more diverse and sophisticated than their neighboring ecosystems.[103]

This essay has argued that the human drive to be released from proximity is crucial in understanding what makes world history and has illustrated that for western Afro-Eurasia in the Hellenistic–Roman era in particular. Let us finally and briefly look at why this might be the case. Why is it that "the career of […] webs of communication and interaction constitutes the overarching structure of human history" in the first place?[104] Why, in other words, is it that the process of globalization seems to drive and shape human evolution from its earliest beginnings? This might be related to the hardware that makes us human: the human species is a runaway species.[105] When your brain gets used to something, it displays less and less response each time it encounters this particular

102 Cf. Fabian 2021 and above.

103 The idea of ecotones dates back to the beginnings of the nineteenth century, when Frederic Clements first described ecotones as zones of tension with greater productivity. On ecotones with this emphasis, see Kark 2013 with earlier literature. On the idea of ecotones as historical methodology, see Gillis 2014.

104 McNeill and McNeill 2003 and above.

105 For this brief afterthought, I will solely base myself on Brandt and Eagleman 2017 and not go into the debate. For the same story but from a different perspective, see Gamble et al. 2014, who maintain that it was the need for humans to live in ever-larger groups and to maintain social relationships over ever-greater distances that drove the enlargement of the human brain and the development of the human mind. Creating larger social networks would imply bigger

element. The more familiar something is, the less neural energy we spend on it; this is beneficial for humans as an energy-saving strategy. At the very same time, however, the brain strives to incorporate new facts to update its model of the world and gets excited by these updates. The brain, in other words, seeks novelty and has a constant thirst for the new—something that can be demonstrated through our neurotransmitter systems, where those involved with "reward" are tied to the level of "surprise." This is why we talk about "the shock of the new"; and who, indeed, does not know the satisfaction of engaging with objects, ideas, or people they had never encountered before?[106] Repetition is needed to save energy but does not lead to invention; for invention and innovation, we have to engage with the new. Human evolution seems to be a trade-off between these two fundamentals: too much predictability and we tune out; too much surprise and we become disoriented. Successful innovation, therefore, is a form of mediated behavior that lives between the two—and is, therefore, always what you could call anchored innovation.[107] Innovation occurs when forces align and things converge.[108] It is, therefore, plain wrong to associate innovation with originality, as we often do in our modern culture, with its idea of the "genius inventor" who creates from scratch.[109] The originality of innovation lies in the bringing together of elements and making these work for your own purposes. Innovation, therefore, is the absorbing of the new into your nervous system and manipulate it to create possible futures. As Brandt and Eagleman put it: "[…] we are food processors into which the world is fed, and out of which something new emerges."[110] Human evolution, therefore, is a story of the continuous processing of the new for which we have the cognitive software available, in terms of our capacity to bend, break, or blend the new. These mental processes, enabled by our brain capacities in a variety of ways, as Brandt and Eagleman illustrate, allow us to change the new from Other into Self and make it predictable.[111] "Bending" concerns the makeover or remodeling of an existing prototype; "breaking" is the creation of something new that is assembled out of the fragments of something that was taken apart; "blending" concerns the combination of two or more sources in novel ways. All three strategies are modes of compliance. Humans are continuously creative and innovative. The intensification of connectivity (globalization) has, over time, resulted in ever more

brains and the development of new socializing abilities; a relation between intensification and change or innovation they define as "thinking big."

106 Though see Edgerton 2006.

107 See Versluys and Sluiter 2023 for the notion of anchoring innovation. The fact that designers always try to make distinctly new products look "strangely familiar" (both new and old at the same time) is an example hereof; see Brandt and Eagleman 2017, 23.

108 Innovation only occurs in networks, as Ahrweiler and Keane 2013 write. Steve Jobs underlined this by maintaining that "creativity is just connecting things," cf. Brandt and Eagleman 2017, 25.

109 Edgerton 2016 for this critique in particular.

110 Brandt and Eagleman 2017, 46.

111 Brandt and Eagleman 2017, 55–104.

newness for our brains to digest. This has produced increasingly faster innovations. It is often maintained that it took humans eleven millennia to get from the agricultural revolution to the industrial revolution and that, from that moment onwards, the time between major innovations shrank dramatically. First-millennium-BCE western Afro-Eurasia, and its Hellenistic–Roman period in particular, holds a remarkable and, in this respect, underexplored place as part of that development.

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Published in: Fabian, Lara et al. (Eds.): Economies of the Edge: Frontier Zone Processes at Regional, Imperial, and Global Scales (300 BCE – 300 CE). Heidelberg: Heidelberg University Publishing, 2025, p. 271.
DOI: https://doi.org/10.17885/heiup.1582

This volume offers a new perspective on trans-Eurasian connectivity between 300 BCE and 300 CE. It focuses on border regions as key sites of economic interaction and transformation. Beyond classic center-periphery models and static notions of 'Silk Road' routes, the contributions examine how imperial expansion, regional political economies and decentralised trade networks shaped long-distance trade. Archaeological, textual and numismatic case studies reveal border regions as dynamic spaces of innovation, negotiation and interregional entanglements.

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ISBN 978-3-96822-327-8