Global Connectivities


Berenike
Gulf of Aden
Socotra
Muziris
Bay of Bengal
Indian Ocean

1 Spaces, Places and Things

The Spatial Dimension of Early Indian Ocean Exchange

Eivind Heldaas Seland

Abstract
Early exchange along the maritime Silk Road not only spanned immense distances, but was also subject to—among other things—seasonal weather systems, hazardous waters, arid and sparsely populated coastlines with few suitable harbours, and limits imposed by infrastructure and technology. Juxtaposing theoretical models for the spatial organisation of premodern exchange with the fragmentary record of experiences handed down in historical sources, and modern digital methods for the analysis of spatial relations, this chapter addresses how we can approach the space-place-things conundrum in the context of early Indian Ocean exchange.

Keywords: Indian Ocean, spatiality, navigation, trade, maps, religion

Introduction: Historical Space

Flemish cartographer Abraham Ortelius (1527–1598) lived at the height of the early modern cartographic revolution. Spending most of his professional life in the service of the Spanish Habsburg monarchy, he became a key actor in the process of measuring, recording, and depicting the world, known as the cartographic revolution, through European eyes (Buisseret 1992; Parker 1992). Toward the end of his career, he gradually developed his *Parergon* (embellishment), a historical atlas consisting of maps of the ancient world to supplement his more famous world atlas *Teatrum Orbis Terrarum*. One of the historical maps covered the Indian Ocean (Ortelius 1597). It was based primarily on the first-century Greek text known as the *Periplus of the Erythraean Sea*. The Erythraean Sea at the time referred to what we know now as the Indian Ocean. The *Periplus* had been translated into Italian and

Billé, Franck, Sanjyot Mehendale and James W. Lankton (eds), *The Maritime Silk Road: Global Connectivities, Regional Nodes, Localities*. Amsterdam: Amsterdam University press, 2022
DOI: 10.5117/ 9789463722247_CH01

printed by the Venetian scholar Giovan Battista Ramusio some decades earlier (Ramusio 1550). Ortelius's map contains textual and visual references to its sources, such as small sea snakes shown off the coast of western India. These were not mythical sea monsters as were popular in early modern cartography (Van Duzer 2013), but they are mentioned in the *Periplus* as a sign to travelers that the coast is approaching (PME 40, ed. Casson 1989). The snakes are commented upon also by travelers such as Pietro Della Valle (1665) and Carsten Niebuhr (1774, 452). Their publications serve as a point of convergence between text, maps, and experiences, past and present. Even if Ortelius's map is hundreds of kilometers off target in some instances, it is broadly consistent with modern historical maps of the Indian Ocean. The purpose is visualization of knowledge, not navigation or visit on the ground. In fixing a textual narrative in a visual representation of geographical space, Ortelius combined and reconciled the geographical knowledge accumulated over a century of European trade and exploration in the Indian Ocean in his own times with the rediscovered knowledge of ancient times. This added a command of history to the program of European and Habsburg religious and political world domination, of which the *Teatrum Orbis Terrarum* was part.

In Ortelius's day, geography and history were considered interdependent, but the disciplines took largely separate trajectories through to the twentieth century (Lewis 2011; Winder 2015). In recent decades, however, "the spatial turn" has changed this situation. Geographic information system (GIS) tools allow us to understand how historical and archaeological data correlate with their spatial environment. Scholars have also become increasingly aware that to understand change, we need to investigate interaction as much as the agents themselves. And that interaction does not depend solely on contact between people; it is also mediated through objects or places. This development arguably amounts to a "relational turn" (Teigen and Seland 2017), which, among other things, has brought network theory and network analysis to prominence in the historical disciplines (Collar et al. 2015; Knappett 2011; Malkin 2011). Critical geographers, on the other hand, have warned that the history-geography-society triad needs to be fully integrated in order to allow the transition from geographical place to space. In difference to place, they argue, space has a physical existence and social and temporal dimensions and appears as a result of interaction between them (Massey 2005; Soja 1996).

Philip Steinberg (2001) starts his study of how oceans have been used, regulated, and represented in the modern period with descriptions of three earlier systems; namely, the Indian Ocean (ca. 500 BCE to 1500 CE), traditional Micronesian practices, and the Roman Mediterranean. For

Figure 1.1 Ortelius's historical map of the Indian Ocean, with sea snakes off the coast of India (detail)

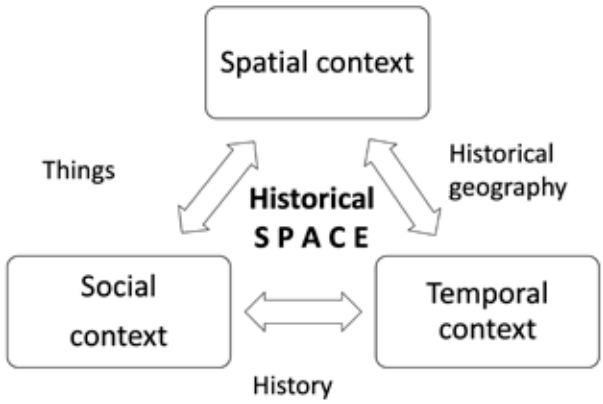
Credit: Eivind Heldaas Seland

Steinberg, the Indian Ocean before the Europeans was conceived as a nonterritorial void. It was used as a medium for long-distance transport, not for everyday social interaction. The ocean was immune to territorial claims and government regulation, apart from occasional actions against pirates. The Indian Ocean was represented as a space outside society, hostile by nature but usable for transport (Steinberg 2001, 41–52). Steinberg's main interest is the modern world, and he is undoubtedly right to highlight differences and discontinuities. Nevertheless, recent scholarship on early Indian Ocean history has demonstrated that the region was very much home to maritime communities before the arrival of European powers and that cross-ocean contacts were accompanied by tightly knit regional and local networks (e.g., Margariti 2007; Ray 2003; Schottenhammer 2019; Strauch 2012). Egyptian, Roman, Arabian, Axumite, Iranian, and Indian imperial ambitions were at times projected across the sea and along coasts by military means (Park, Chapter 2 of this volume). It follows that the representation of the Indian Ocean as a space outside society is in need of nuance. Part of the problem is that most historical sources describing the region in the early period were produced by literate elites with little personal knowledge and experience of the region. I argue below that we may nonetheless be able to approach the historical space that was the Indian Ocean. Stepping into this space allows us to appreciate how people, places, things, and time interacted across large distances and cultural divides. We may thus get closer to understanding the premodern Indian Ocean on its own terms, rather than on the terms of an ancient geographer describing a remote and dangerous region or a cartographer working in Antwerp at the end of the sixteenth century.

One way of approaching historical space is offered by the work of American geographer Edward Soja. Soja, in turn, draws on the work of the French philosopher Henry Lefebvre, and uses three categories of space. Firstspace is perceived space (or spatial practice). Secondspace is conceived space (or representations of space), and thirdspace is lived space (or spaces of representation) (Soja 1996, 66–82). These categories offer ways of using different kinds of available data and source materials in order to address the spatiality of early Indian Ocean exchange.

To Soja (1996, 66), perceived space is the observable spatial patterns of people, places, and things in time. These are things we can see, count, and measure. This is what geographers have been doing since Ortelius's days and before, and which archaeologists have become increasingly good at over the last decades with the increased use of GIS technology, remote sensing, and quantitative/archaeometric methods (e.g., Lankton, Chapter 3, this volume). In an Indian Ocean context, we might study in great detail, for instance,

Figure 1.2 The production of historical space



Based on Soja 1996 and Massey 2005

how ports were distributed along Indian Ocean coasts in different periods (Casson 1989, 94–243; Damgaard 2011; Facey 2004; Nappo 2018); where the harbor facilities, warehouses, and living quarters were situated in these ports; and what groups were active or resident in different neighborhoods of the port at different periods of time based on epigraphy, ceramics, or diet (Heng, Chapter 8, this volume; Radowska and Zych 2019; Thomas 2012). Such patterns emerge from a combination of considerations. Ports needed a water supply and having a natural sheltered anchorage offered a clear advantage. These are environmental factors. How settlements were created would, to some extent, rely on pragmatic factors such as available labor force, expertise, and resources. Some spatial decisions—such as where to place the main temple, or where the government warehouses should be situated, or where the foreign merchants should live—could at least potentially be ascribed to deliberate economic, ideological, or political considerations (see Lankton, Chapter 3, this volume). This is close to stating the obvious, but it underlines the point that spaces are indeed produced and that geography, history (or temporality), and society each have a place in that process.

Conceived space (or representation of spaces) are our mental models of the world, as expressed, for instance, in written and visual representations (Soja 1996, 66–67). The text of the *Periplus*, Ptolemy's *Geography*, and the Han Dynasty's descriptions of the western regions are all examples of this, as are the Byzantine period maps of the Indian Ocean region in Kosmas Indicopleustes's *Christian Topography*, which is discussed below (see Casson 1989; Kominko 2013; Leslie and Gardiner 1996). Ortelius's map of the ancient Indian Ocean is, of course, also a visualization of a conceived space,

as are contemporary concepts such as "sacred landscapes" or models for the spatial organization of early Indian Ocean polities (Damgaard 2011; Knapp and Ashmore 1999; Seland 2007). Modern written descriptions of ancient Indian Ocean trade or of port sites on the Indian Ocean seaboard are also examples of conceived spaces, as they are produced and imparted by their authors. To complicate matters, perceived spaces (the first group mentioned above) are necessarily approached by means of conceived spaces (the second group mentioned above), because the only way we are able to record and share them are by producing representations of them, whether oral, written, or visual.

Lived space (or spaces of representation) is the most difficult to capture, as it is supposed to describe how each of us navigates our physical and social surroundings, including symbols, ideologies, and power dynamics (Soja 1996, 67–69). This makes it hard for any of us to have an informed opinion about even our everyday life because most of our actions and interactions take place without us giving much thought to their symbolic implications, and because lived space is necessarily subjective. Monuments and memorials are current examples (Johnson 2002). As events leading up to and during the Black Lives Matter demonstrations of 2020 in the United States clearly show, monuments can simultaneously represent heritage and local identity to some and symbols of imperialism and oppression to others. For many people and for most of the time, monuments are simply part of the spatial backdrop. Although it may be useful to speak of perceived, conceived, and lived spaces as three separate categories, they actually overlap. We use tools and language to measure, describe, and visualize these categories, and thus they are all representations of (conceived) spaces. Most of them are also examples of spatial practice and thus perceived spaces, and some are even lived spaces or spaces of representation (Soja 1996, 70–73).

Spatiality in Early Indian Ocean Exchange

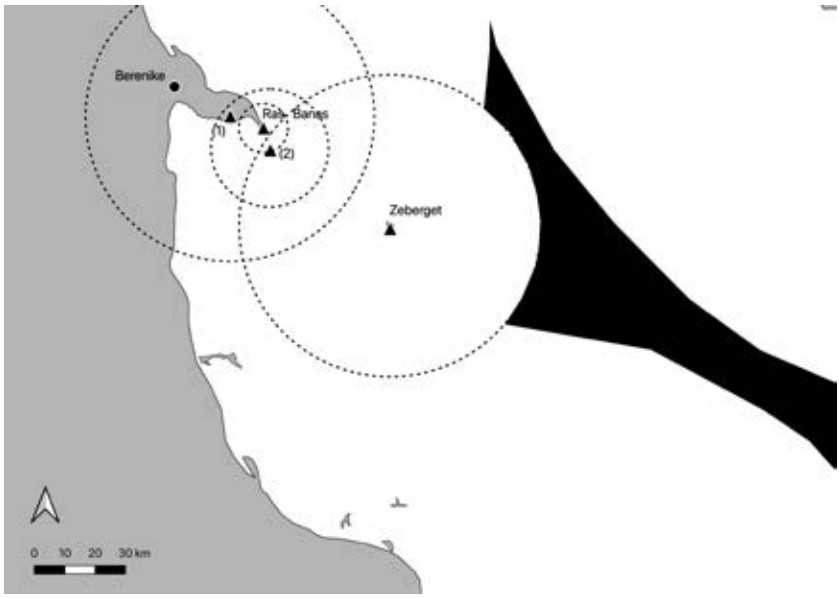
We are accustomed to approaching spatiality by means of maps and increasingly by satellite and aerial images. These visual practices find their source in the cartographic revolution of the early modern period that Ortelius was part of, but accurate maps of the Indian Ocean littorals were only made in the nineteenth century for navigational purposes and in the twentieth century for land measurements. The best maps have, in many cases, been restricted for military purposes, and high-resolution satellite imagery has only been available since 2010 or so (Kaplan 2018). Early travelers in the

Indian Ocean most likely did not have maps at all; they gauged the world from the deck of a ship. This had implications for how they perceived the maritime space they operated within.

Ancient navigators were able to use the stars, sun, moon, the appearance of the sea, the wildlife, and other sensory inputs to orient themselves, but the primary navigational aid remained visual contact with land (Arnaud 2005, 29–33; Brugge 2017; Seland 2020). The use of landforms as navigational aids in the Red Sea and Indian Ocean are described in ancient texts such as Agatharchides's fragmentarily preserved *On the Red Sea* as well as in the *Periplus Maris Erythraei* (see Burstein 1989; Casson 1989). Modern GIS tools can calculate and visualize viewsheds as they appeared in the ancient period (Figures 1.3 and 1.4 illustrate the viewshed during the approach to the Egyptian port of Berenike). These are theoretical measures under optimal conditions. Conditions are rarely optimal in the real world, but they nevertheless give an impression of the space that ancient navigators operated within. Ships setting out from Berenike could use the small island just off the cape of Ras Banas peninsula as a navigational aid until St. John's/Zabargad Island came into view. Ships heading back home to Berenike could rely on keeping land out of sight on both sides to avoid dangerous reefs. When Zabargad came into view, it would be on the right, and then sailors knew they would see the island off of Ras Banas in due time (Seland 2020). In this way, we move from the perceived space of measurements to the conceived space of representations to put ourselves in the lived space of the people who were navigating the Red Sea two millennia ago.

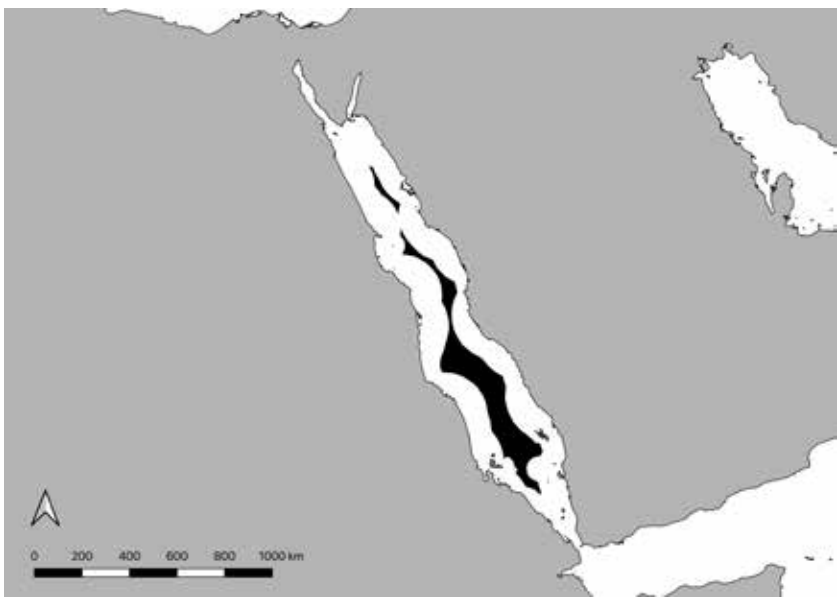
Two of the more obvious examples of the practice of navigating by means of sea-to-land visibility are found on opposite sides of the Gulf of Aden. *Ras Fartak* (in Arabic) and *Akroterion Syagros* (in Greek; Cape Syagros) is a nearly 900-meter-tall headland at the mouth of Dhofar Bay in present-day Oman. The headland's name is translated as "Cape of the Wild Boar," and theoretically it would be visible from some 100 kilometers offshore. The assumption that that name was given because of the shape of the mountain is not unreasonable. This is even more evident in the case of *Ras Filuk*/*Akroterion Elephas*/Cape Elephant off the Somali coast, where the west-facing profile of the 246-meters-tall headland resembles an elephant. It is significant that the semantic contents of these names are the same in Arabic and Greek and that they later made their way into European languages, confirming their age and continuity, and that seafarers most likely established and transmitted the names. This demonstrates how the conceived space of maps and toponyms may be fixed as perceived space in GIS software and allows us to glimpse the lived space of the people who

Figure 1.3 Viewshed of selected features near Berenike, Egypt



Seland, 2020

Figure 1.4 Sea-to-land visibility in the Red Sea



Seland, 2020

Figure 1.5 Ras Fartak/Cape Syagros, viewed from the west, from a distance of about 6 km

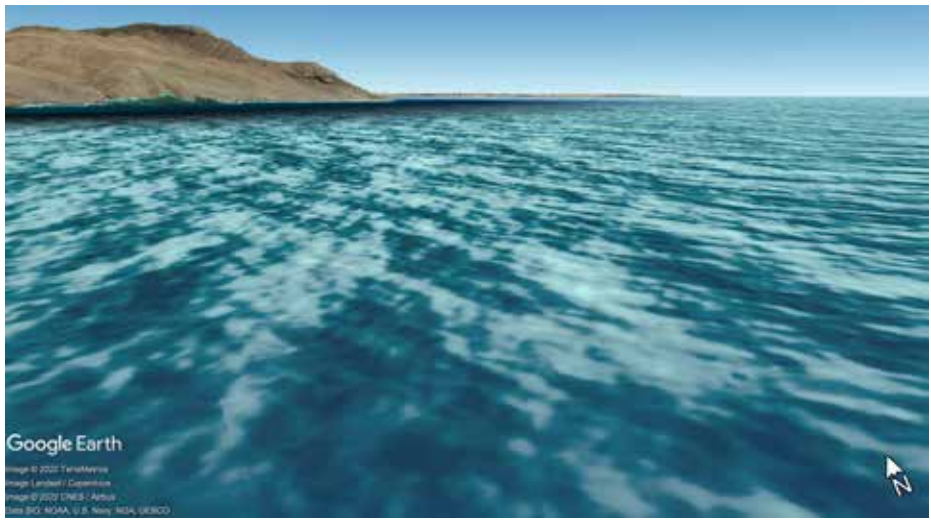


Image from Google Earth Professional

Figure 1.6 Ras Filuk/Cape Elephant, viewed from the west, from a distance of about 1 km

Image from Google Earth Professional

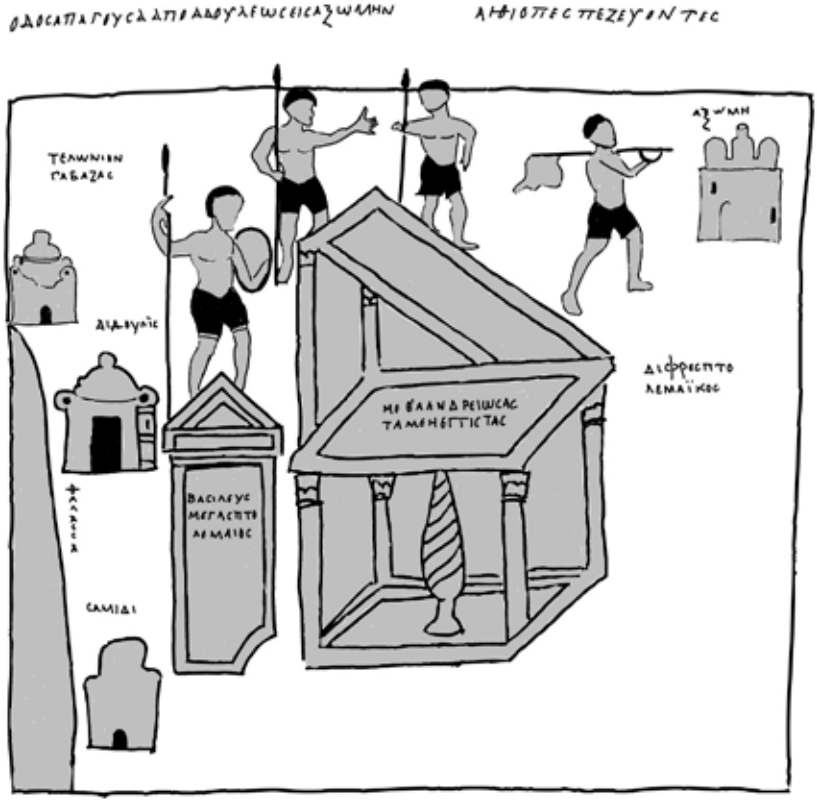
navigated the Gulf of Aden two millennia ago. It also underlines that long-distance contacts did not emerge suddenly and as the result of exploration and discovery. This evolution does not preclude innovation, development, and the introduction of new actors and technology, but it emphasizes how change is built on extant cultural layers (Tchernia 1997).

Turning to the concepts of lived space and spaces of representation, one trait highlighted by Soja and others is that these landscapes are charged with meaning for the people who navigate them (Knapp and Ashmore 1999; Soja 1996). Naming mountains after animals they resemble are basic examples of this, but more significant is the investment of political or religious symbolism into places. This can be seen in a small map accompanying manuscripts of the sixth-century *Christian Topography*, by an author "who sailed to India," and by convention is called Kosmas Indicopleustes, but whose real name is not known. Figure 1.7 is a representation of the kingdom of Aksum, which spans parts of both present-day Ethiopia and Eritrea. We do not know whether the map was originally made by Kosmas or if it was added by the monks who copied the manuscripts at a later stage. Four versions exist, and the one discussed here is from a ninth-century CE copy (see Kominko 2013, 25–31).

As an example of so-called conceived space and visualization of how an observer understood the text it accompanied, the map exemplifies history, geography, and society. On the left side, the coastline is depicted with three labeled settlements: Adulis (the main port of the Aksumite Kingdom), Gabaza (described as a *telônion*, or customs house), and an otherwise unknown settlement named Samidi. Four persons described as Ethiopian travelers are moving along the road to Aksum, which we recognize as the capital of the ancient kingdom. The map also depicts two monuments said by Kosmas to be situated along this road outside Adulis. One is a stela of Ptolemy III, the king of Egypt in the third century BCE, commemorating his wars in Syria and his elephant hunts in the Red Sea. The other is an inscribed marble throne believed by Kosmas to also belong to Ptolemy. Kosmas adds that the site of the throne was used as a place of execution in his time (Christian Topography 2.54-67, ed. Wolska-Conus 1968). Modern scholars have demonstrated the stela is commemorating the military exploits of an Axumite king in the second or third century CE (Bowersock 2013).

Although of no use as a geographical map in our current understanding of the term, the map does take geography into account in its placement of the sea and the different cities. The map has south on top, and the body of water on the left is the littoral of the Gulf of Zula, a bay on the coast of present-day Eritrea. The map also seems to reflect a political hierarchy

Figure 1.7 Map of the Aksumite kingdom; Red Sea coast to the left



Drawing after manuscript Vat.gr.699, 15v. [own work]

between settlements in the form of different symbology, and it relates several layers of historical pasts through the inscriptions of the Ptolemaic and Axumite rulers. In this sense, the map provides insight into the lived space or space of representation of sixth-century CE Ethiopia and Eritrea.

A final example is the late fourth or early fifth century Roman route map preserved in a Medieval copy known as the *Tabula Peutingeriana*. In the section showing southern India and Sri Lanka, there is the harbor town of Muziris (most likely the archaeological site of Pattanam in Kerala), which is depicted with a *templum Augusti* (a temple of the divine Roman emperors). The central segments of the map, which display the Mediterranean littoral, give a fairly accurate depiction of perceived space, even if several historical layers of information are contained in the document, making the exact dating difficult and leading to anachronisms (Rathmann 2018; Talbert 2010; Weber 1989). Towns are depicted with their distances between them,

Figure 1.8 South India with the temple at Muziris

Tabula Peutingeriana, Conradi Milleri, 1888

although presented in the manner of communication lines rather than the accurate rendering of distances, roads, and landforms, much like a modern urban transport map or network graph. However, in the depiction of South India, there is very little accuracy. In part, this reflects the inadequate knowledge of the region; in part, it is not intended as an accurate depiction but rather as a way to emphasize the greatness of Rome. This is one possible reading of the Roman temple in South India; namely, that the Romans could tell themselves that their empire was so great that even at the end of the known world, there was a temple to their emperors. This would be a representation of conceived space, much like Ortelius's map that inscribed early modern navigators into the venerable history of ancient geographers. As a depiction of what was going on in the fourth or fifth century, the map is clearly misleading. In the first two centuries CE, there was an active, regular, and apparently rather large-scale traffic between Egypt and South India (Cobb 2015). Very likely, there was a settlement of Roman subjects in Muziris, and very likely they would have celebrated the imperial cult as a way of maintaining cohesion among themselves (Metzler 1989; Seland 2016). After a period of little evidence of connection in the third century CE, contact between Egypt and South India seem to have resumed in the fourth century (Lankton, Chapter 3, this volume). Rome, however, was officially Christian at the time when the *Tabula* was composed in the form it has come down to us, so temples to the emperor were a surely thing of the past, and the temple depicted in Muziris represents a layer of historical space in the

map. Even if flawed as a representation of the physical world and of what was actually going on when the map was drawn, it still echoes the global scope of contacts and consciousness brought about by early Indian Ocean trade. Parallel examples are also known from other parts of the Indian Ocean World, the most spectacular being the cave of Hoq on the remote island of Socotra, where Indian merchants have left hundreds of inscriptions, many with Brahmanic and some with Buddhist connotations. These have been found along with Ethiopic, Greek, South Arabian, and even one Palmyrene inscription (Strauch 2012). In this context, the reference to a temple of the Roman emperors does make sense but only in light of what else we know about the historical, social, and geographical environments of the region.

Conclusion

Postmodern geographical theory perhaps does not sit well with empirical traditions of Indian Ocean archaeology and history. Thinking in terms of spatiality is nevertheless a useful way of approaching the expanding mass of data we have about places, products, and people in early Indian Ocean trade for at least two reasons. First, it requires us to shift our focus from the metropolitan perspectives that have produced many of our sources and most of the historiography to the places where things happened, whether on a beach, in a coastal city, or from the deck of a ship. In this way, it helps us relocate the Indian Ocean where it belongs: in the center of its own world rather than as a periphery to the Mediterranean World. Second, having to think about how the historical, geographical, and social environments come together and influence each other is useful because it allows us to displace emphasis from the static nature of our evidence to the dynamic processes that produced it, thus adding nuance to our vision of the past and helping us to understand the historical dynamics that were at work in the early Indian Ocean trade.

References

Arnaud, Pascal. 2005. *Les Routes De La Navigation Antique: Itinéraires En Méditerranée.* Paris: Éditions Errance.

Brugge, Ruben B. 2017. "To See or Not to See: A Study in Maritime Visibility." In *An Island between Two Worlds: The Archaeology of Euboea from Prehistoric to Byzantine Times*, edited by Zarko Tankosic, Fanis Mavridis, and Maria Kosma, 291–301. Athens: Norwegian Institute in Athens.

Bowersock, Glen W. 2013. *Throne of Adulis: Red Sea Wars on the Eve of Islam.* Oxford: Oxford University Press.

Buisseret, David. 1992. *Monarchs, Ministers and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*. Chicago: University of Chicago Press.

Burstein, Stanley M. 1989. *Agatharchides of Cnidus on the Erythraean Sea.* London: Hakluyt Society.

Casson, Lionel (ed., trans.) 1989. *The Periplus Maris Erythraei*. Princeton, NJ: Princeton University Press.

Cobb, Matthew. 2015. "The Chronology of Roman Trade in the Indian Ocean from Augustus to Early Third Century." *Journal of the Economic and Social History of the Orient* 58:362–418.

Collar, Anna, Fiona Coward, Tom Brughmans, and Barbara J. Mills. 2015. "Networks in Archaeology: Phenomena, Abstraction, Representation." *Journal of Archaeological Method and Theory* 22:1–32. https://doi.org/10.1007/s10816-014-9235-6.

Damgaard, Kristoffer. 2011. "Modelling Mercantilism: An Archaeological Analysis of Red Sea Trade in the Early Islamic Period (650–1100 CE)." PhD diss., Copenhagen University, Faculty of Humanities.

Della Valle, Pietro. 1665. *The Travels of Sig. Pietro Della Valle, a Noble Roman, into East-India and Arabia Deserta*. London: Henry Herringman.

Facey, William. 2004. "The Red Sea: The Wind Regime and Location of Ports." In *Trade and Travel in the Red Sea Region: Proceedings of the Red Sea Project I. Held in the British Museum October 2002*, edited by Paul Lunde and Alexandra Porter, 7–17. Oxford: Archaeopress.

Johnson, Nuala C. 2002. "Mapping Monuments: The Shaping of Public Space and Cultural Identities." *Visual Communication* 1:293–298.

Kaplan, Caren. 2018. *Aerial Aftermaths: Wartime from Above*. Durham, NC: Duke University Press.

Knapp, A. Bernard, and Wendy Ashmore. 1999. "Archaeological Landscapes: Constructed, Conceptualized, Ideational." In *Archaeologies of Landscape: Contemporary Perspectives*, edited by A. Bernard Knapp and Wendy Ashmore, 1–32. Oxford: Blackwell.

Knappett, Carl. 2011. *An Archaeology of Interaction: Network Perspectives on Material Culture and Society.* Oxford: Oxford University Press.

Kominko, Maja. 2013. *The World of Kosmas: Illustrated Byzantine Codices of the Christian Topography.* Cambridge: Cambridge University Press.

Leslie, Donald Daniel, and Kenneth Herbert James Gardiner. 1996. *The Roman Empire in Chinese Sources.* Rome: Bardi.

Lewis, Martin W. 2011. "Geographies." In *Oxford Handbook of World Histories Online*, 36–53, edited by Jerry H. Bentley. Oxford: Oxford University Press.

Malkin, Irad. 2011. *A Small Greek World: Networks in the Ancient Mediterranean.* New York: Oxford University Press.

Conradi Milleri. 1888. *Peutingeriana Tabula itineraria in bibliotheca Palatina Vindobonensi asservata nunc primum arte photographica expressa*. Vindobonae [Vienna]: Angerer et Göschl [Public domain].

Margariti, Roxani Eleni. 2007. *Aden & the Indian Ocean Trade: 150 Years in the Life of a Medieval Arabian Port*. Chapel Hill: University of North Carolina Press.

Massey, Doreen. 2005. *For Space.* London: Sage.

Metzler, Dieter. 1989. "Kaiserkult Ausserhalb Der Reichsgrenzen Und Römischer Fernhandel." In *Migratio Et Commutatio. Studien Zur Alten Geschichte Und Deren Nachleben. Thomas Pekáry Zum 60. Geburtstag Am 13. September 1989 Dargebracht Von Freunden, Kollegen Und Schülern*, edited by Hans-Joachim Drexhage and Julia Sünskes, 196–200. St. Katharinen: Scripta Mercaturae Verlag.

Nappo, Dario. 2018. *I Porti Romani Nel Mar Rosso Da Augusto Al Tardo Antico.* Naples: FedOA, Federico II University Press.

Niebuhr, Carsten. 1774. *Reisebeschreibung Nach Arabien Und Andern Umliegenden Ländern*, Vol.1. Copenhagen: Nicolaus Möller.

Ortelius, Abraham. 1597. *Erythraei Sive Rubri Maris Periplus.* Antwerp: Jan Baptista Vrients.

Parker, Geoffrey. 1992. "The Spanish Habsburgs." In *Monarchs, Ministers and Maps: The Emergence of Cartography as a Tool of Government in Early Modern Europe*, edited by David Buisseret, 124–152. Chicago: University of Chicago Press.

Radowska, Joanna, and Iwona Zych. 2019. "Exotic Cults in Roman Berenike? An Investigation into Two Temples in the Harbour Temenos." In *Stories of Globalisation: The Red Sea and the Persian Gulf from Late Prehistory to Early Modernity: Selected Papers of Red Sea Project VII*, edited by Andrea Manzo, Chiara Zazzaro, and Diana Joyce De Falco, 225–245. Leiden: Brill.

Ramusio, Giovanni Battista. 1550. *Navigationi Et Viaggi*. Venetia: Stamperia de Giunti.

Rathmann, Michael. 2018. *Tabula Peutingeriana: Die Einzige Weltkarte Aus Der Antike.* Darmstadt: WBG, Philipp von Zabern.

Ray, Himanshu P. 2003. *The Archaeology of Seafaring in Ancient South Asia.* Cambridge: Cambridge University Press.

Schottenhammer, Angela. 2019. *Early Global Interconnectivity across the Indian Ocean World*. Palgrave Series in Indian Ocean World Studies. Cham: Palgrave Macmillan.

Seland, Eivind Heldaas. 2007. "Red Sea and Indian Ocean: Ports and Their Hinterland." In *Natural Resources and Cultural Connections of the Red Sea*, edited by Janet Starkey, Paul Starkey, and Tony J. Wilkinson, 211–218. Oxford: Archaeopress.

Seland, Eivind Heldaas. 2016. "Trade Diasporas and Merchant Social Cohesion in Early Trade in the Western Indian Ocean." In *Between Dispersion and Belonging: Global Approaches to Diaspora in Practice*, edited by Donald H. Akenson and Amitava Chowdhury, 125–137. Montreal: McGill-Queen's University Press.

Seland, Eivind Heldaas. 2020. "Coastal and High-Sea Passages in Ancient Red Sea Navigation: Combining GIS with Common-Sense Geography." In *Methods and Models in Ancient History: Studies in Honor of Jørgen Christian Meyer*, edited by Ingvar Mæhle, Per Bjarne Ravnå, and Eivind Heldaas Seland, 99–110. Athens: Norwegian Institute at Athens.

Soja, Edward W. 1996. *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*. Cambridge, MA: Blackwell.

Strauch, Ingo. 2012. *Foreign Sailors on Socotra: The Inscriptions and Drawings from the Cave Hoq.* Bremen: Hempen.

Steinberg, Philip E. 2001. *The Social Construction of the Ocean.* New York: Cambridge University Press.

Talbert, Richard J. A. 2010. *Rome's World: The Peutinger Map Reconsidered.* Cambridge: Cambridge University Press.

Tchernia, Andre. 1997. "Winds and Coins: From the Supposed Discovery of the Monsoon to the Denarii of Tiberius." In *Crossings: Early Mediterranean Contacts with India,* edited by Federico De Romanis and Andre Tchernia, 250–276. New Delhi: Manohar.

Teigen, Håkon Fiane, and Eivind Heldaas Seland. 2017. "Sinews of Empire and the Relational Turn in Classical Scholarship." In *Sinews of Empire: Networks in the Roman near East and Beyond*, edited by Håkon Fiane Teigen and Eivind Heldaas Seland, v–xii. Oxford: Oxbow Books.

Thomas, Ross. 2012. "Port Communities and the Erythraean Sea Trade." *British Museum Studies in Ancient Egypt and Sudan* 18:170–199.

Van Duzer, Chet A. 2013. *Sea Monsters on Medieval and Renaissance* Maps. London: British Library.

Weber, Ekkehard. 1989. "Zur Datierung Der Tabula Peutingeriana." In *Labor Omnibus Unus: Gerold Walser Zum 70. Geburtstag*, edited by Heinz E. Herzig and Regula Frei-Stolba, 113–117. Stuttgart: Franz-Steiner.

Winder, Gordon M. 2015. "Historical Geography." In *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed., edited by James D. Wright, 17–22. Oxford: Elsevier

Wolska-Conus, W. 1968. Cosmas Indicopleustes: Topographie Chrétienne. Paris: Cerf.


Baghdad
Siraf
Guanzhou
Persian Gulf
Bay of Bengal
Indian Ocean