Negotiating Watery Worlds

Crafting a Research Agenda

Grier, Colin; Fauvelle, Mikael; Garcia-Piquer, Alberto

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Colin Grier, Mikael Fauvelle,
and Alberto García-Piquer

However one measures it, our planet includes more than one million kilometers of coastline. Since time immemorial, humans have dwelled upon, sailed from, and derived sustenance from this extensive and unique element of our planet. The same can be said for other kinds of watery worlds—rivers, lakes, wetlands, and, indeed, the open ocean. Our past, present, and future are intimately connected with the 72% of the Earth's surface that is covered in water. The Pacific Ocean alone covers roughly one-third of the Earth. As such, water has profoundly shaped our histories, our practices, our ways of being in the world, and, as Jordi Rivera Prince points out in Chapter 11 of this volume, our very bodies themselves.

As the breadth of chapters in this volume make clear, there is a great diversity of ways humans have engaged with these watery worlds, and a similarly diverse set of approaches can be pursued to account for and interpret these experiences. In this final chapter we argue that to achieve a rich understanding of seafaring practices, we must embrace and document this diversity of engagements. But, as we describe below, we must simultaneously push for an integrated and holistic approach to the study of seafaring that highlights common themes, practices, and histories in relation to how we as a species have negotiated watery worlds.

Below we outline what we see as the foundations of a diversity-embracing yet expansive, holistic, and globally comparative seafaring analysis project. This chapter involves three components. First, we amplify some of the many threads and themes explored in this volume as reflective of the diversity of strategies and approaches to seafaring that humans used in the past. Second, we illustrate several ways we can approach seafaring so that the study of "going

by boat" moves beyond tweaking terrestrial models to fit ocean circumstances. Here we venture into the arena of theory-building—that is, launching an effort to build out theory from an initial seafaring perspective, homing in on ways in which watercraft are transformative rather than simply additive to human practices and potential. Third, we lay out a synthetic research agenda that will, in our view, take our collective seafaring project forward in important and potentially transformative ways in relation to archaeological, anthropological, and interdisciplinary scholarship. Our hope is that this endeavor and the directions charted will spur scholars to carry on this project in new ways that lead to transformative understandings of seafaring in our human past.

Appreciating Diversity in Seafaring Practices

The component of this planet that is or that interfaces with water is incredibly diverse. From ice-choked arctic oceans to far-flung tropical archipelagos to rugged fjordlands, the complexity of coastal and ocean environments is astonishing (Figure 13.1). Layering on to this complexity are the diversity of societies that have inhabited these waters, further multiplying the range of contexts we must consider under the umbrella of seafaring.

In focusing this volume, we have skimmed over the larger polities and monumental watercraft to amplify the arena that we feel has been less explored—that of small-scale, coastal seafaring peoples. We want to bring these societies into the larger discussion, despite the sometimes significant lack of direct material evidence pertaining to seafaring in their archaeological records. This volume has been an effort to bring them into a more central focus in the stories and histories we construct for seafaring peoples. Narratives pertaining to the seafaring practices of small-scale peoples often relate to exploring new worlds and to the origin point of coastal adaptations and seafaring technologies. But there is much more to tell. Ethnographic data help in this aim, as does modeling, as several chapters in our volume (e.g., García-Piquer: Chapter 2; Rorabaugh: Chapter 3) attest and argue.

True to the theme of recognizing diversity, we also must appreciate that non-Western and pre-state societies had quite different strategies for negotiating the Earth's watery worlds than ships operating in the context of large-scale polities. Of course, small-scale societies had more modest seafaring craft and used them not typically for regular cross-ocean voyages but for negotiating a complex set of coastlines in the world of daily practices. Traversing coastlines and, indeed, river systems and smaller freshwater bodies often has travelers within sight of land and able to make a quick maneuver toward shore. This creates a different context and field of play for boat use in smaller-scale societies. This to not to

Figure 13.1. The diversity of global coastlines, illustrated by (*clockwise from top left*) the southern Gulf Islands of coastal British Columbia, the fjordlands of Norway, the southern California coast, and the coastline of Patagonia in South America.

ignore that modest craft were certainly used in times and places for expansive ocean-traversing journeys, such as we see with the Lapita expansion and the colonization of Polynesia (Furholt et al. 2020). Indeed, peoples in small-scale societies made some large and impressive watercrafts. But as Kenneth Ames (2002) points out, in small-scale societies it is important to recognize boats not as an exceptional technology used under exceptional circumstances but as a central and often quotidian instruments of daily production and practices.

To grapple with this, we can consider boats as sitting at the nexus of a set of social relations of production, including those that pertain to the production of watercraft themselves. The production of a large galleon is a different game than the production of almost any craft used by small-scale societies. Peoples of the Northwest Pacific Coast, for example, did construct exceptionally large war canoes, and these required a significant contingent of people to build and propel them. And at the same time, they generated family-sized watercraft for basic resource gathering needs. The organization of their production was specific to the craft and the social context, and qualitative and quantitative differences between this and large commercial shipping (for example) certainly exist in the social relations of their production. This is itself worthy of study, as we elaborate below.

That said, "small-scale seafaring" is not a single strategy or approach, and we again must be careful to recognize the diversity of craft that were mobilized even within the same context in small-scale societies. As Mikael Fauvelle and Peter Jordan (this volume: Chapter 8) clearly show, different boats (tule versus dugouts) were produced through very different means for very different purposes within coastal California itself, with significant implications for the political realm and the centralization of power. Recognizing, appreciating, and analyzing diversity in practices is—as always—a matter of scale and context. As such, one key pillar of a productive seafaring project is to fully account for and appreciate the diversity of practices as a multiscalar endeavor.

Reformulating Theory

While appreciating the diversity of seafaring practices across time and space is important, it is equally important to pursue theory-building to generate fresh ideas and larger interpretive frameworks for seafaring as a central component of human practices and histories globally. We see a range of arenas in which watercraft have been transformative, as outlined in our introductory chapter. These include (1) providing access to new resources, (2) allowing for exploration and colonization of new regions, (3) facilitating the transportation of goods and people, (4) underwriting settlement networks and mobility strategies, (5) expanding networks for social and biological reproduction, (6) shaping social relationships and political strategies, and (7) generating ontologies of seafaring (Knapp 2020).

For our purposes here, we find it useful to fold these into three broader arenas in which we can pursue theory-building, and which we ultimately argue constitute key domains in the holistic, integrated, and global framework we wish to advance. These arenas include (1) logistics and movement, (2) sociopolitical organization and change, and (3) ontologies and phenomenology. Below we cover these three arenas of theory-building separately, then follow this up with an outline of the integrated framework we feel can carry the study of seafaring forward.

Logistics and Movement

Logistics and movement have traditionally been where archaeologists and other scholars of seafaring have tried to build general theory. This has typically included considerations of the technological capacities of watercraft and the impacts of widespread movement on the spatial organization of small-scale societies. Collecting and foraging models as outlined by Lewis Binford (1980) have long been used to try to capture variation and patterning in terrestrial

hunter-gatherer movements, to reasonable effect. Binford always argued that collectors and foragers represent not "types" of strategies but a continuum, and those who utilize coasts and oceans—the so-called maritime hunter-gatherers—have been viewed as representing an extreme on the collecting end (Ames 2002; Binford 1990; Yesner 1980).

At the same time, there has been recognition that maritime hunter-gatherers may be qualitatively different from their terrestrial counterparts (e.g., Suttles 1968; Yesner 1980). Boat travel is not simply a faster type of walking or analogous to riding horses, as Matthew Des Lauriers and Claudia García-Des Lauriers (this volume: Chapter 5) point out. Some have undertaken the project of trying to build a middle-range theory (that is, a generalizing account) of maritime adaptations and maritime hunter-gatherers, notably David Yesner (1980) in his effort to capture their key organizational elements in a set of ten organizational principles. Yet such synthetic approaches reveal a long-standing limitation of this type of theory-building—that maritime hunter-gatherers are a coherent, definable, and distinct variant of what we understand terrestrial hunter-gatherers to be. Interestingly, watercraft garner almost no concerted attention in Yesner's (1980) paper, except that they facilitate greater movement and thus promote a more "logistically oriented" form of settlement system.

How do we get beyond the quantitative differences and effectively capture the qualitative differences that seafaring engenders? What approaches best represent taking seafaring on its own terms? Ames (2002) offered a starting point for this, building from Binfordian foraging models by considering the impact of boat mobility on a wide range of productive pursuits. Yet the expansion of a foraging range is itself transformative, not just additive. A circle's area increases exponentially relative to its radius, so incorporating a greater area can also incorporate a greater diversity of resources and other people (Bicho and Esteves 2022). An expanded territory is not just about distance covered on water but the structure of resources and other people that fall inside it as well as the way seafaring and watercraft allow humans to "map onto" that ecological structure and social field in novel ways not typical of terrestrial approaches.

Several examples can be cited to illustrate how we might rethink seeing the world when it incorporates water and seafaring. First, a study by Michael Blake (2010) of movements in the central Salish Sea of western coastal North America illustrates a critical point about the complexity of movements and territories when watercraft are involved. In analyzing the structure of Sechelt territories, Blake argues that the extent of their territories was defined by the distance one could travel in a boat plus an additional distance inland or upland to the extent that a trek to the edge of a territory and back is possible in two days. Boats and terrestrial conveyance are thus not mutually exclusive;

they are often used in combination. Indeed, that combination seems to be a predominant driver in defining the extent and organization of First Nations territories in the coastal inlets of southwestern British Columbia. Hybridization of movements rather than either/or is key here. As Blake (2010) notes, this kind of hybridized movement strategy has a significant structuring effect on not only the extent of territories but the distribution of settlements within those territories, creating archaeological patterns that may not be readily predicted by terrestrial foraging theory.

A second case in point emerges from a study by Farid Rahemtulla (2006) in which he examines lithic procurement and the organization for production of lithic technologies at the long-inhabited Namu village on the central coast of British Columbia. Rahemtulla argues that, based on their lithic assemblages, the people at Namu must have had watercraft technology underpinning their lithic procurement over at least the last 5,000 years. As tool stone is heavy and often sourced in remote locations (at least in coastal British Columbia), the acquisition of a consistent supply of tool stone can require significant time and energy. Rahemtulla (2006) argues that those requirements are mitigated when embedded procurement strategies are used in which multiple resources are acquired during wide-ranging forays using watercraft. The problems of lithic procurement are resolved in the context of other problems. As such, seafaring makes humans consummate multitaskers and makes the nature of trips multipurpose and complexly layered.

An implication of Rahemtulla's study, and the notion of embedded procurement generally, is that predictions concerning transport pathways and mobility strategies from the perspective of single resources are perhaps less appropriate for seafaring peoples than for territorial groups who cover less ground. While terrestrial collectors solve resource conflicts through logistical mobility, embedded procurement is the simultaneous resolution of several problems in an integrated spatial fashion. Analogically, it may be akin to the argument made by Gregory Monks (1987) about Northwest Pacific Coast resource procurement—that Northwest coast hunter-gatherers exploit whole food chains not individual resources, and we must evaluate their decision-making in that frame. Another implication of Rahemtulla's study is that it concerns watercraft use at a village that was permanently occupied in its location for millennia (Cannon 2003), thus offering an approach and perspective useful for modeling seafaring agricultural communities that are as firmly planted in their settlement locations.

A final example of how we might build an approach to movement from a seafaring vantage point is provided by the study in this volume by Alberto García-Piquer (Chapter 2). Through sophisticated modeling of seas and currents in southern South America, his work effectively illustrates how various

seas and waterways may facilitate or hinder coastal passage. To explore and understand the sea, it is best to treat it as a complex environment rather than a consistent friction-bearing surface and include portaging as a key element of seafaring. Different boats also interact differently with the dynamics of the sea. As a result, we must model the coastal and open-ocean environments as seafarers see and experience them. While this can be and often is done for terrestrial models by building in aspects of terrain and ground cover to least-cost path approaches, getting beyond the sea as essentially a flat plane of constant movement costs is an important arena of both method and theory-building (more on this below). Moreover, while water is often viewed from a terrestrial perspective as a barrier, it can be a barrier to or facilitator of travel varyingly at different times, depending on a set of circumstances that, unlike terrestrial environments, are constantly changing in essentially real time. These examples point to starting with a seafaring-driven view of the structure of the watery worlds we wish to understand.

Sociopolitical Organization and Change

To paraphrase Rhoda Halperin (1989), boats do not build themselves, nor do they propel themselves or move resources themselves—rather, it is humans who do all those things, and those humans have relations among them that govern the mobilization of this technology in myriad ways. Adopting this stance shifts our study of watercraft from the arena of what Halperin called "locational movements"—that is, the spatial structure of movements on a landscape or seascape—into the realm of "appropriational movements," which involves the analysis of how people and their relationships are organized with respect to deploying resources and technologies.

We feel this is the logical extension of what Ken Ames (2002) was arguing for in his seminal paper, which can be construed in Marxian terms as focusing on the "social relations of production." Who builds boats? Who controls or has access to the materials and knowledge to build boats? Who has access to the use of boats, and under what pretenses and circumstances? These are all questions that usefully begin without the assumption that if there are boats, then everyone has and uses boats. As archaeologists have long engaged in the discussion of political economies (Furholt et al. 2020), the political and power-imbued component of boat use seems inescapable given their transformative capacities. With this, the social organization of watercraft production and seafaring sociopolitics becomes a central domain in a larger seafaring project (Faar 2006).

Case studies that underscore this point have appeared in the wider literature and are represented in this volume as well. The analysis of the emergent inequalities that stem from the whaling enterprise among ethnographically and

archaeologically documented whaling communities in the North American Arctic offers an object lesson in how boat ownership is central to the reorganization of sociopolitical systems in precontact Arctic whaling communities (Burch 1981; Cassell 1988; Grier 2000; Whitridge 2002). Similarly, on the Northwest Pacific Coast of North America, smaller boats were ubiquitous, but the scale of labor organization required to operate larger boats often involved factions, lineages, or corporate households (Ames 2002; Erin Smith, this volume: Chapter 9). Canoe construction was usually the craft of an elite person trained in vessel making, with some assistance by family and other less trained labor. Elites by birthright possessed the history, knowledge, and spirit power to mount the production of a vessel and ensure its safe journeying. Thus, elites controlled many aspects of boat production. As such, they were instruments of inequality, and the complexity of the ways they operated in the political arena requires careful investigation.

In this volume, we are treated to several studies that take on this political economy of watercraft directly. First, Fauvelle and Jordan adeptly point out that the production of complex watercraft may have initially resulted from efforts to solve logistical issues. But these craft provided new opportunities and potentialities that fueled political change toward political hierarchies and centralization. Fauvelle and Jordan (Chapter 8) note that this is not the necessary direction that political change must move but that it is evident in a significant number of case studies of early and small-scale maritime complexity. As such, their comparative work represents a useful example of how we can build general theory out of usefully controlled and relevant comparisons.

Building on this point that complex watercraft do not inherently result in hierarchies or centralization, Victor Thompson (Chapter 7) emphasizes collective action as a component of how complex watercraft systems were implemented. The Calusa built extensive canal systems for watercraft that were collectively rather than centrally managed, providing a mechanism for integration and the construction of collective social institutions that operated at local scales. Recognizing such systems, and the social practices that govern them, expands our understanding of not just the complexity of watercraft systems but also of political systems themselves. This places watercraft at the center of developing alternatives to the construction of political hierarchies.

In this vein, we might productively engage the idea that watercraft can offer the means to decentralize sociopolitical practices, a theme that has emerged more widely in the discussion of resistance to centralization and anarchism approaches to understanding political histories and change (e.g., Angelbeck and Grier 2012; Furholt et al. 2020; Graeber and Wengrow 2021). Several case

studies provided by Martin Furholt and colleagues (2020) describe how boats are used as one mechanism to evade, escape, or otherwise thwart increasing social control and political hierarchies. Those pushed to margins of political control or those actively resisting efforts to centralize authority can use boats to subvert authority and break the "bottlenecks" that are critical for political centralization to emerge.

In this sense, the use of watercraft expands our understanding of political dynamics and how three varying trajectories of change—centralization, collective action, and decentralizing forces—work separately and in concert in the context of the political histories of smaller-scale political systems. As Thompson (this volume: Chapter 7) points out, the emergence of watercraft systems as an integrating and collective action-driven process may down the road fuel the emergence of much larger-scale and centralized political entities. Perhaps the most significant element of watercraft across this range of processes is that they provide for greater interaction over larger networks and can therefore support fundamentally different kinds of interactive networks than we have presumed work in terrestrial contexts.

We can thus move the study of watercraft and seafaring to a central role in studying the emergence of various kinds of social and political networks and can see watercraft as instruments of political change—a key arena we can productively explore and from which we may generate useful new theory. In this pursuit it is critical to recognize that all technologies are implemented (or not) in a specific social context. The reasons watercraft are used initially may not be how they later get used, nor are certain watercraft technologies always used when they can be. When they become useful, they are mobilized, with "becoming useful" meaning politically rather than solely logistically useful.

Ontology and Phenomenology

As we have argued, watercraft are more than just a technology and a means of transporting people and goods. Another key arena in which this is true is in the realm of what watercraft mean to seafarers. In support of this we can consider the most basic and obvious analogy—the automobile in the twentieth century. America in the second half of the twentieth century became effectively a car-driven culture. The technology facilitated and supported a new way of life, a way of thinking about what is possible in society, a source of identity construction individually and collectively, and an expression of the affluence and prowess of American industrial know-how. In these and many other respects cars have and continue to express and embody an American way of being in the world that is based in many ways around the automobile.

The analogy with watercraft is simplistic perhaps, but nonetheless instructive, as Smith (this volume: Chapter 9) points out by using the term "watercraft culture." Seafaring the world over has been rife with meaning, and notions and practices generated by life at sea have worked their way into many aspects of meaning in daily life, such as the naming of boats being similarly applied to cars, vernacular expressions of human behaviors such as "running a tight ship," and various other sea-based metaphors and translations that are drawn from the watery worlds we have collectively and individually engaged.

As such, we need to account for the many meanings and ontologies of watercraft locally and collectively, as several papers in this volume do to great effect (e.g., Jarrett, Chapter 12; Smith, Chapter 9; Whitridge, Chapter 10). What do watercraft mean to those who use them, and how are they part of relating to and representing our relationship with watery worlds? How do such perceptions structure the ways in which people interact with the world? This ontological arena represents one in which we may productively pursue theory-building.

For this we can tap into the broader theoretical canon of posthumanism (e.g., Cipolla et al. 2021; Crellin et al. 2021; Crellin and Harris 2020) and its ability to frame how we relate to the world in more profound ways than as a problem to solve (Golledge 2003). On the water, there are relentlessly practical problems to solve—assessing currents, monitoring water depth, timing a landing, and so on. These can often be issues of survival and thus bring humans to terms with their rather frail existence subject to forces that are difficult to negotiate, let alone control or master. The sea thus presents a perfect environment in which our complex relations with the world—material and nonmaterial—are poignantly realized.

The posthumanist focus on relational ontologies and heterarchy of agency among actors (human and nonhuman) in the world thus seems ideally suited to pursue both the diversity of and shared human experiences on the sea. Adopting the posthumanist canon of theory may be a matter of effective borrowing and translating but, as we illustrated for sociopolitical approaches, is also a matter of expansion. Smith (this volume: Chapter 9), for example, adopts the notion of homologies to bridge and fuse the land/sea divide ontologically. Peter Whitridge (this volume: Chapter 10) takes a similar stance in pursuing an account of Inuit–animal–thing relations. His adoption of actor-network theory grounds the mental and physical in the material record itself, reinforcing that actor relations are folded in many ways into the material archaeological record of seafaring that may seem impoverished because of the lack of archaeological boats. Indeed, the attention that actor-network theory calls to the material expressions of these relationships represents a fruitful (yet nonetheless demand-

ing) basis for an archaeology of seafaring, one that takes us well beyond the traditional places we may think to look for our evidence.

A key piece we would add to this ontological approach is that of phenomenology (Johnson 2012; Tilley 1994), in order to ground seafaring in the physicality of experiencing watery worlds. Seafaring is simultaneously mental (cognitive), experiential (historical), and somatic (sensory and immediate). Anyone who has spent time on the water and in smaller craft (below the size and scale of ocean-going vessels) realizes this. Negotiating water is about many things simultaneously—knowledge and experience, confidence on the water, the technical conditions of the craft and crew, and one's savvy for adapting to ever-changing conditions. We have all been humbled by the raw energy of oceans and coasts, even large lakes or current-heavy rivers. Such intimate experiences are individual as well as shared and collective but nonetheless are mediated through the physicality of being on the water. The key point of all this is that seafaring is a physical act, and the commonality of the way we all experience the sea physically can form the basis for addressing our shared experiences with it, a point we feel extends from the goals of a phenomeneological approach in archaeology (Johnson 2012).

Our physical relationship with the sea has a historical dimension as well. As Rivera Prince points out in Chapter 11, the effects of watery worlds on us physically are not just momentary but rather imprint on our very bodies, with the sea shaping our physical being. The sea is also reshaping our future as well, as Indigenous communities are reconstituting their traditional practices, relations, and ontologies through reconnections with the sea, something alienated from them in the colonial past (Smith, this volume: Chapter 9). In this way the sea offers another dimension of restorative justice, an ontology and world of meaning that can be reclaimed in pursuit of a more equitable future.

Toward an Integrated Approach

In many respects this chapter represents not a conclusion but a starting point. Each of the chapters in this volume has opened up important conversations that need to be taken forward. Our goal in this final chapter has been to illuminate and weave together a bigger picture, first by promoting an appreciation of the diversity of seafaring practices, and then by using that breadth to work toward more generalizing theory and approaches. While appreciating diversity and pursuing generalization have at times been at odds in the production of knowledge, we see both as essential components of knowledge production, meshed inextricably in a dialectic full of productive tensions and synergistic moments.

The final aim we have in this chapter is to lay out the groundwork for an integrated approach to seafaring and outline in an explicit way the components that we feel cover the bases required to properly conceptualize and study seafaring practices. With this we hope not just to capture maritime adaptations, the history of boat use, seafaring as wayfinding, and all the other elements of negotiating watery worlds that have been raised in this volume but to comprehend seafaring as a relational existence in an immersive context. Below we map out the architecture of an integrated approach to studying seafaring as we conceive of it.

The studies presented in this volume, and those that it hopefully spurs, can be usefully seen as positioned in relation to our three major themes—logistics and movement, sociopolitical organization and change, and ontology and phenomenology. Appropriating perhaps the most quintessentially terrestrial model, we can use the "soil triangle" for terrestrial sediment description—appropriately altered for our seafaring purposes—to convey the range of inquiry covered in our integrated approach (Figure 13.2). The key point we wish to make with Figure 13.2 is that productive studies of seafaring practices, while perhaps situated toward or emphasizing one of the vertices of the triangle, explicitly incorporate the other dimensions of studying seafaring and pay explicit attention to each of these poles in whatever mix seems appropriate to the study. With this schema, there is, for example, no useful logistics and movement chapter that fails to recognize that logistics and movement are inextricably connected with the sociopolitical and the relational.

The approach that knits this volume together is that each of the papers herein in some way takes that on mission—to weave together elements of the three poles rather than being singularly concerned with one of them. This requires focused effort. Indeed, in wrestling with the traditional approach to organizing an edited volume in a way that delineates sections and arranges papers in some linear or logical sequence, we recognized quickly that the chapters are related in a multifaceted rather than linear way. Nor are they best organized geographically, since the themes they address transcend regions. In this sense the diversity-amplifying and generalizing nature of the papers provide an instance of how we envision an integrated approach to seafaring unfold.

The Role of Modeling

One component we wish to highlight that may provide an important building block in our approach is modeling. This volume is not heavily focused on modeling, and none of the three editors would define ourselves as modelers explicitly. Yet an approach to seafaring that involves modeling—that is, uses simulations and agent-based structured decision-making—is, in our minds,

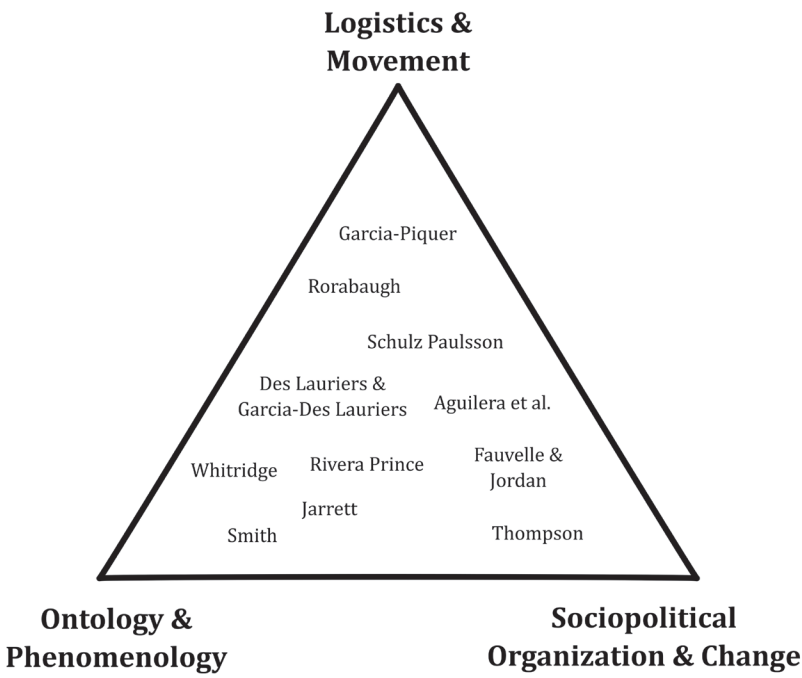

Figure 13.2. Schematic triangle illustrating the themes (triangle vertices) that form our integrated approach, with individual papers in this volume positioned accordingly.

a critical element of moving forward with our seafaring project, for several reasons.

First, given the current dearth of archaeological data on boats themselves, models can help evaluate the relative technological capacities of various watercraft systems under various conditions. This is perhaps the most obvious application of modeling, and elements of it are found formally and more informally in several chapters in this volume, such as those by Alberto García-Piquer (2), Greer Jarrett (12), and Adam Rorabaugh (3).

Second, modeling provides a framework to assemble and evaluate the variables that are relevant to seafaring. Modeling also helps to explicitly stipulate relevant sea conditions and evaluate the impacts of varying conditions on boats given a specific technology. Despite many coastal archaeologists doing fieldwork in boats, we often have only a limited understanding of the conditions and circumstances related to negotiating the sea. Modeling allows us to incorporate additional variables and evaluate their effects, such as shifting shorelines and water level fluctuations, to craft nuanced simulations that build upon but go

beyond any direct experience (see García-Piquer, this volume: Chapter 2). In this light, experimental archaeology emerges as an invaluable complement to modeling. Jarrett (this volume: Chapter 12) makes a cogent case that there is no substitute for real experience on the water, but integrating direct experience with modeling provides a framework to evaluate a range of hypothetical possibilities that are simply not possible to evaluate out on the water.

Third, we can go beyond the boats and sea conditions themselves to model networks of people and how boats make possible, or whether they uniquely make possible, certain kinds of social networks. This realm has been underexplored, but social network analysis in a GIS frame set in a modeling environment holds potential to both simulate the emergence and stability of networks and test hypotheses concerning the role boats can and have played in supporting various kinds of networks, as is well demonstrated by the contribution from García-Piquer in this volume (Chapter 2).

A final point on modeling is that it is possible in the way we structure our models to build in the ontologies of seafaring we glean from ethnographic or archaeological data. Modeling need not be a distanced, objective, or generalizing tool. Indeed, chapters in this volume that take a modeling stance (García-Piquer [2], Rorabaugh [3], and, in a more experimental sense, Jarrett [12]) all attempt to integrate some way of being in the world into their approach. Can we push such approaches further, evaluating the influence perceptions of the sea and ideational maps of the world have on archaeological patterns?

The Way Forward

Seafaring has always been a concern of archaeologists and those who recognize that our world is primarily one of water. In archaeology alone, there is clearly an abundance of literature on various aspects of seafaring, much of which we have only been able to draw in tangentially, if at all. For instance, several recent edited volumes in the British Archaeological Reports Series "Maritime Archaeology for the 21st Century" bring together multiple methodological and theoretical dimensions of seafaring, including *Delivering the Deep* (Ilves et al. 2024) and *Down by Water* (Vadillo et al. 2022). These collections of works highlight a diversity of aspects of seafaring and often adopt a productive interdisciplinary approach. But they stick mostly to the subject of logistics and movement of people and goods in more centralized and complex societies. The volume *Marine Ventures* (Bjerck 2016) offers an expansive set of chapters, with several venturing into the realm of sociopolitical organization as we define it here. Beyond these edited volume efforts (naming just a few), the *Journal of Island and Coastal Archaeology* has provided a venue to explore and aggregate coastal

and island studies, and many themes we raise in this volume have also been productively explored therein. Surveying the existing literature, the components and pieces are there but have yet to be drawn into an overarching framework.

Much of this literature is in English; here, for practical purposes, we limit our coverage to scholarly literature primarily in English. Part of our call for an integrated approach must include drawing together information from as many languages and scholarly traditions as we can to address local/regional diversity and engage in productive theory-building. We also need to deeply mine the ethnographic record—much of it in languages other than English—to illuminate non-Western perspectives and ontologies of seafaring, a goal productively demonstrated by the chapter offered herein by Nelson Aguilera and colleagues (Chapter 6).

In this volume we have been less concerned with the traditional epic transoceanic journeys and discovery of new continents than with the daily practices that emerge with seafaring and the mechanisms that shape and transform those practices in coastal areas where land and sea mesh. We have made an explicit effort to illuminate the rhythm of daily practices involving watercraft, going beyond watercraft as a technology, beyond seafaring as a mode of production, and ultimately entering into and conceptualizing a realm where seafaring represents an immersive context. Over 20 years ago, Ken Ames' (2002) notion of watercraft as instruments of daily production provided a stepping-stone and key impetus to engage such an approach, but we still have a lot of water to cover.

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