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ONE

PROBLEMS AND PERSPECTIVES

1.1 INTRODUCTION

The study of Mediterranean landscapes and of *longue durée* histories, island cultures and complex human ecologies have all developed into major research agendas over the past half-century, engaging large swathes of the social and natural sciences. This book brings together these established investigative traditions by considering Antikythera, a tiny island perched on the edge of the Aegean and Ionian seas, over the full course of its approximately seven-thousand-year history of documented human activity. As a research setting, this island offers rare advantages. First, small islands (a category we define later in the chapter) are particularly interesting because their plant, animal and human populations can be susceptible to abrupt demographic changes, and, most clearly in the case of humans, often show cycles of colonisation, near or complete abandonment, and recolonisation. Such a comparatively discontinuous record makes it easier to distinguish between different settlement and land use strategies than in many other contexts where the occupation of landscapes may be more continuous. Small islands have thus been invoked as interesting descriptive vignettes from time to time but, surprisingly, have rarely been the focus of systematic Mediterranean landscape-scale research. Antikythera (20.8 km^2) is now one of the best-documented examples of these, with a punctuated human presence from the Neolithic through to the present day, and this provides substantial insight into the dynamics of human settlement and ecology over the long term. Second, small islands also play eccentric but extremely revealing roles in wider social, economic and political networks – for example, as special places for refugees, hunters, modern ecotourists, political exiles, hermits and pirates – and Antikythera similarly provides a rich assortment of examples

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with which to explore how these sorts of small places participate in broader worlds. Finally, while many studies address portions of larger islands or slices of mainland landscape, these are necessarily based on very selective, patchy programmes of data collection. In contrast, Antikythera is a very rare case, unique to our knowledge, of an island that is small enough to have been investigated in its entirety from several different disciplinary perspectives, and the resulting evidence allows us an unusual vantage on whole settlement and land use histories.

Antikythera is also one of the more physically remote inhabited places in the Mediterranean, and this perceived isolation has framed the island's treatment by most historical and present-day commentators, if it has been mentioned at all. Viewed from a global perspective, however, it is certainly no isolate, and lies in the midst of a zone of often intense cultural and economic interaction, north-south between the southern Balkan peninsula and Crete and east-west between the eastern and central Mediterranean. This sometimes strategic, sometimes marginal location is emphasised by an abrupt and often discontinuous history of human presence, as well as a range of unusual activities such as those of long-range Neolithic hunters, early colonists from Bronze Age Crete, a fortified town of Hellenistic pirates (roughly contemporary with an offshore shipwreck that produced the famous 'Antikythera mechanism'), a substantial Late Roman community, as well as a more recent tradition of political exile, wartime resistance and expatriate diaspora.

We begin this book by taking a critical look at some interpretative models and research methods that might help us to make sense of past and present Mediterranean communities. Hence, the first section to follow discusses the different analytical scales at which it is possible to explain regional variability in human behaviour over time, as well as the different kinds of human individual, group and institution that might be considered as agents of stability or change. Our understanding of Mediterranean life and landscape is enhanced by focusing on the broader-scale, more slowly changing environmental setting, but at the same time giving due attention to the potentially unique trajectories of human history (e.g., Arthur 1988). Islands offer an advantageous, but by no means simple, research context in which to confront these issues, and the considerable theoretical literature on insularity is also given a short review. We then take a critical look at existing approaches to ecological vulnerability and resilience, to Mediterranean micro- and macro-history and to complex adaptive systems, arguing that, amidst a host of rival but often similar concepts, only a small subset are analytically useful when confronted with a largely archaeological long-term record. Ultimately, this book seeks to simplify much of this debate via a rather straightforward emphasis on contrasting patterns of *persistence* and *fragility* on Antikythera. These two ideas are linked in important ways and together form a central theme.

Chapter 2 moves on to discuss the research and fieldwork methods that have so far been used to address these kinds of theoretical concern. Many, albeit not all, have been brought together under the umbrella of Mediterranean archaeological survey and we review the opportunities and challenges that the framework provides. This also allows us to introduce the specifics of our own phased program of fieldwork, artefact study and laboratory analysis on Antikythera and some key datasets used in the rest of the book. Chapter 3 offers an introduction to the climatic, terrestrial and marine environment on and around Antikythera – and places these observations in their wider Mediterranean human and biogeographical context. Chapter 4 then confronts the vast record of past and present material culture to be found on Antikythera – an at first often mute, and invariably frustrating, form of evidence that nonetheless provides by far the most important means by which to develop valid comparative and longitudinal perspectives. Chapters 5 and 6 harness the insights from both material culture and written records (where the latter exist) to consider the long-term history of human communities on the island, with an emphasis on spatial analysis and comparative demography. These two chapters thus provide a basis for Chapter 7's more reflective commentary on patterns of human connectivity and landscape investment, as well as Chapter 8's focus on the kinds of idiosyncratic but adaptive human lifestyles that are often associated with the way small islands work. Finally, Chapter 9 draws the book to a close by briefly revisiting some of the interpretative challenges raised in previous sections and by re-emphasising Antikythera as a useful vantage from which to understand wider Mediterranean life.

1.2 Scales, Agencies and Island Archaeology

One of the great challenges facing any long-term reconstruction of human society is how to give appropriate attention to the active roles of individuals, institutions, states and wider systems of socio-economic interaction (for the mutually constitutive nature of these, see Giddens 1984), despite needing to draw upon archaeological evidence that is largely depersonalised, depoliticised and static when recovered. Agency theory is one means by which archaeologists have sought to redress this balance and it has become a particular beacon for those keen to avoid accusations of environmental determinism or too exclusive a focus on population-scale culture change (for good overviews and debate, see Dobres and Robb 2000; Gardner 2004). While we are not convinced that archaeological datasets are consistently suitable for this priority focus on individuals (rather than larger groups; see discussion later in the chapter), concerns about the context and character of human decision making are certainly important ones, and Chapter 7 includes a large section on the interface between local human agendas and the wider workings of states and empires, while Chapter 8

considers the role of certain kinds of individual directly. However, this book also prefers to place a great deal of emphasis on understanding what we call communities (in full agreement with Kolb and Snead 1997). We use the term to refer to any group of people beyond the cohabiting family, who interact with each other fairly regularly and whose sense of belonging is an important aspect of their social identity. Most human communities have typically lived together, in the same village or on the same island, for example, and encountered each other face to face on a fairly regular basis. These often involve extended family groups and kinship links, but do not assume their priority from the outset. Hence, Antikythera itself represents one community, but also comprises several, and we seek to exploit this context-dependent, definitional latitude in the chapters that follow (just as the term 'landscape' also carries a useful ambiguity; Gosden and Head 1994).

There is a natural fit between a focus on the intermediate, if slightly more nebulous, scale of the community and the kinds of insight that the archaeological record is best placed to provide. A narrower, smaller-scale obsession with individuals and single family units can, on the one hand, have disappointing results, as it limits the longer-term questions we can ask via historical sources (Braudel 1985, pp. 44–60) and often just makes archaeologists into very frustrated ethnographers (Shennan 2002, p. 9). On the other hand, a more sweeping view of past political geographies and very large-scale cultural entities (e.g., 'Minoan civilisation' or 'Roman Empire') is clearly of great interest, but is often rather unsatisfactory for understanding the kinds of human-landscape dynamic that have been a crucial feature of the Mediterranean past and present (see Alcock 1993 for a striking exception that explores this dynamic, in part through the lens of empire). In contrast, as Kolb and Snead (1997) emphasise, a community-focused perspective lends itself to the spatial analysis of settlement remains and artefact distributions (Murdock and Wilson 1972), to considering cultural affiliations, differentiations and boundary maintenance, as well as to addressing the long- and short-term effects of labour investment and land tenure. One key methodological implication of this focus for the kinds of archaeological survey that we return to in Chapter 2 is the importance of being able to consider *contiguous* (and, for all intents and purposes, *continuous*) portions of landscape where we can observe the residues of spatially 'joined-up' relationships among groups of individuals and their day-to-day places of activity (also sometimes referred to as a micro-regional approach; Gaffney and Tingle 1989).

A related theoretical perspective that has obvious relevance to Antikythera is island archaeology, which itself is part of a broader academic interest in islands spanning several parent disciplines such as archaeology, anthropology and geography. In the Mediterranean, there is a long-standing tradition of studying islands as units, which provided Annales school historians with productive case studies, building on the work of Lucien Febvre (1949, pp. 248–85) and Fernand

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Braudel (1972, pp. 149–51; see also Kolodny 1974). This interest arises from the long-held idea that islands offer insights about a wider world: Take, for example, the Medieval *isolario* tradition (the 'book of islands'; see Chapter 7 for examples) that started with Venetian mappings of major places of the Aegean (the most densely insular part of the Mediterranean), but which was thereafter extended to address the whole Mediterranean and eventually the whole globe. This contemplative, world-as-a-series-of-islands perspective was place-centred, comparative and essentialist, contrasting with a later cartographic tradition of atlases that present more abstract, wholly graticuled spaces in which expanses of land and sea have similar billing (Cachey 2010). In roughly the same way, modern social science became interested in islands during the 1960s, 1970s and 1980s under the influence of island biogeography (MacArthur and Wilson 1967; for a recent review, see Losos and Ricklefs 2009). It too began with a geographic core (this time in the Pacific) and expanded to develop into a wholly comparative agenda that sought to exploit islands as singular laboratories for understanding cultural and environmental variability (Vayda and Rappaport 1963; Evans 1973; Terrell 1977; Cherry 1981). Thereafter, however, this perspective has gradually given way to one with far greater emphasis on the way islands are incorporated into wider spheres of interaction where perceived insular boundaries are fluid and insular identities in constant flux (e.g., Robb 2001; Rainbird 2007; see also Fitzpatrick and Anderson 2008). These theoretical shifts hopefully lead to ever-more refined approaches, but it is fair to say that they also simply reflect wider swings in fashion across much of the social sciences over the past fifty years, with an initial emphasis on generalisation and experimental method giving way to a greater interest in historical relativism and socially mediated senses of place.

Cyprian Broodbank (2000, pp. 6–35) describes how island life can be construed as lying on a continuum between being isolated, closed and introverted on the one hand and integrated, open and extroverted on the other. In a global context, Mediterranean islands clearly fall far closer to the interactionist end of this scale in most periods of their history (Evans 1977), but nonetheless exhibit important variability that led Braudel (1972, pp. 149–51) to suggest push-and-pull tendencies between island archaism and innovation. Where any given island may be placed on this continuum is clearly something that can also change through time (e.g., Robb 2001) and with the perspective of the viewer (e.g., whether you are a local or a passing visitor, e.g., Terrell, Hunt and Gosden 1997; Broodbank, Bennet and Davis 2004), and we return to these issues of historical and contextual contingency in Chapters 7 and 8.

As noted earlier, an important strand of revisionism about islands has involved dispelling the myth that they can be construed as humanity or nature in a bell-jar. Islands are rarely isolates, especially in the Mediterranean, and we explore Antikythera's myriad wider connections in later chapters. Even so, there is a risk of taking an argument about cultural and ecological relativism too

far, and we contest the assertion that just because islands are linked into wider social, economic and/or political networks, or because islanders sometimes have prioritised other situated identities, this obviates the need to consider how being surrounded by water gives them a particular type of history. The same lumping and splitting anxieties are not unknown with regard to whether or not the whole Mediterranean can be treated as an analytical unit (Herzfeld 1980; Pina-Cabral 1989; Albera 2006), and in both cases, our view is that, while the initial bout of definitional introspection is useful, it can easily become too obsessive. We also suspect that Evan's (1977) much maligned idea of the 'island laboratory' has far more merit than it has sometimes been given credit for (e.g., Rainbird 2007), and in many ways our own methodological emphasis reflects a sense that this bounded geographical unit has continuing empirical value. Indeed, we would do well to reincorporate islands into wider ecological models of contiguous landscape patches, connective corridors and hierarchical mosaics (e.g., Forman 1995; Blondel et al. 2010, pp. 118–36). In this light, landscape patches such as islands or valleys or mountains are indeed always constructs, in terms of their lived experience and the way they are analysed: They are thus relevant to understanding some phenomena and not others, can be changeable over time, and are often better understood in a wider matrix. It just happens, however, the certain landscape patches prove persistently more useful constructs than others.

So we can think about islands as unusually clear-cut landscape patches, linked by more and less route-bound corridors of interaction to other islands and both more and less clearly bounded patches of mainland (in agreement with Terrell 1977; see also Horden and Purcell 2000, pp. 123–72, and ecological notions of the 'habitat island'). The same approach is valid on a smaller scale within an island environment as well, and we develop this idea in discussing the importance of niche construction and of persistently favoured places across the landscape. This also allows us to continue to think about the issues of patch size and shape (how big and/or heterogeneous is an island environment?), connectivity (how well linked is it to its neighbours?) and hierarchy (how does it fit into a wider asymmetric set of relationships?) in a way that has long been effective for island studies (e.g., in the Mediterranean; Cherry 1981, 1990; Broodbank 2000, pp. 144–74; Dawson 2010), whilst recognising that social networks, political structures and historical contingencies play a crucial role. *Small islands* are a category we invoke often in the chapters that follow, by which we mean those with surface areas that are perhaps less than 100 km^2 (thus with the vast majority of their land within the first couple of kilometres from the coast), but still large enough to be viable for one or more human communities (i.e., normally fewer than 1,000 people, and often between a few dozen and few hundred). Of the three issues we have just highlighted – size, connectivity and hierarchy – the impact of the latter two are more pronounced when island size decreases to this

point, such that a very small but highly connected island in a strong asymmetric relationship with a powerful neighbour will have a very different set of social and material characteristics than an equally small island that falls largely outside of any direct political relationships.

As Chapter 2 goes on to emphasise, our own fieldwork on Antikythera follows in an established tradition of Mediterranean landscape survey and Mediterranean island studies (e.g., Renfrew and Wagstaff 1982; Cherry, Davis and Mantzourani 1991; Voorrips, Loving and Kamermans 1991; Barker 1995; Patton 1997; Given and Knapp 2003; Vogiatzakis, Mannion and Pungetti 2008, to name just a few lengthier treatments). We also, like many other initiatives, suggest that our patch of choice offers insights relevant to other Mediterranean micro-ecologies (in the sense of Horden and Purcell 2000), many of which also vacillate between periods of relative integration and relative isolation due to their size, shape, place within wider hierarchies of interaction and history of human decision making. While the aforementioned discussion emphasised the advantages of considering (and surveying) an island in its entirety, there is also much to be gained, on a larger scale, from the sheer density of high-quality research that has occurred in coastal Messenia, Laconia, Kythera and western Crete (with references to follow in the chapters ahead). The south-west Aegean now boasts some of the most intensively investigated landscapes in the world, and there are real opportunities for comparative regional approaches, based on these different individual efforts. One nearby research programme worth highlighting from the outset as a point of reference and a source of ideas is the Kythera Island Project, directed by Cyprian Broodbank and Evangelia Kiriatzi and to which we return in later chapters.[1]

1.3 Fragility and Persistence

As the title of this book implies, a key interest of ours is in explaining both the consistencies and the contingencies of human activity on Antikythera over the very long term, as well as the recursive relationship between these activities and the wider ecology of the island. In the existing literature, each of the terms such as 'cultural landscape', 'human ecology', 'cultural ecology', 'historical ecology', 'socioecological dynamics' or 'socionatural systems' has slightly different agendas and starting points, but all reflect a wish to evoke a complex, adaptive system in which two participatory elements – humans and their environments – influence each other in reciprocal and often unpredictable ways (e.g., Butzer 1982; Kirch and Hunt 1997; Wallach 2005; Steward 2006; Kohler and Leeuw 2007; Barton, Ullah and Bergin 2010; Cummings 2011). Such an emphasis is partly in response to earlier anthropological and archaeological perspectives that tended to position humans as passive responders to external forcing by the environment or, in contrast, as improbably far-sighted decision makers about

how to manage their world. Beyond some fairly minor hair-splitting, most of these terms offer perfectly reasonable alternatives to one another, but in our view, they often result in largely descriptive, loosely heuristic approaches to the causes of landscape-scale stability or change. At the risk of stereotyping, socioecological research often seems to involve the following historical diagnosis: (1) define a particular study region where there is clear social instability (i.e., at some meta level, in terms of population, settlement structure, elite control of resources, etc.); (2) assert that one or more subsistence practices (e.g., irrigation, forest clearance, soil management) was not sustainable in some way (i.e., likely to lead to soil loss, depletion of nutrients or decline in water availability affecting return rates) and/or susceptible to external climatic effects such as drought; and then (3) show how this destabilised an overly entrenched social system and eventually led either to a new form of resource management or some wider episode of societal collapse. Although we do not seek to falsify the aforementioned (stereotyped) procedure directly in the chapters that follow, it should nonetheless become clear that we think it inappropriate for thinking about change (or the lack of it) on Antikythera.

‘Resilience’ and ‘panarchy’ are two further concepts that were first developed with non-human natural systems in mind, but more recently have been considered in the archaeological and anthropological literature. Resilience theory is concerned with how natural systems respond to change (Holling 1973), and its key assumption is that species diversity is adaptive and allows ecological systems to manage external disruptions more effectively than might other, more homogenous ecosystems, but also that change is an important part of a system's health. These ideas have also been applied to the broader dynamics of ecological systems involving humans (e.g., Redman and Kinzig 2003; Redman 2005; Nelson et al. 2006; Peeples, Barton and Schmich 2006) with some success, although mainly as a general description of change. Panarchy theory is a more formal transfer of some of these ideas of resilience to the study of human systems (Gunderson and Holling 2002), and proposes that coupled human-natural systems progress through adaptive cycles in response to crises that are either of their own making or driven by external events (e.g., cycles of drought). The theory makes some intuitive sense in terms of the long-term dynamics of growth, collapse and regrowth that are evident in many different case studies. Even so, it remains difficult to convert these insights into a workable model that generates testable hypotheses, and many of the applications (e.g., in Gunderson and Holling 2002) struggle to operationalise the theory, even with modern economic and ecological evidence that is far less prone to sampling error than archaeological data (to the extent that some of the case studies are admitted to be ‘stylized, even trivial’; Scheffer et al. 2002, p. 224).

To us, with a focus on understanding small island communities, resilience and panarchy theory encourage the consideration of human-environment

relationships in cyclic, adaptive terms, not least because the cycles of growth and collapse that have so far been identified on multiple islands in the Mediterranean (Bintliff 1999) are unlikely to have been driven by ecological 'collapse' of the sort commonly invoked to explain the local disappearance of human populations in other contexts (e.g., Diamond 2005). As explained in later chapters, it is possible to demonstrate significant fluctuations in Antikythera's human population over both the short and the long term, and to show that this has no significant relationship with any known ecological or climatic fluctuations, and does not seem to be driven by shifts in resource exploitation strategies or in the island's carrying capacity. Rather, we are instead drawn to the long-established understanding that small-populations are inherently unstable, both demographically and economically (see Weiss and Smouse 1976; Cruz et al. 1987; Lacy 1993; Demetrius, Gundlach and Ochs 2004). This small-population effect is true regardless of the bigger networks in which the island engages, and in some instances, wider integration probably accentuates small-population effects (vivid historical examples of which are the forced clearances of entire island communities due to piracy or war; see Chapter 5–6). So one primary driver of instability for places such as Antikythera is the stochastic effect of small populations. Put in a different way, such places are both more and less historically contingent than we might expect: More because individual small events (which at a Mediterranean scale would merely be Braudel's 'crests of foam that the tides of history carry on their strong backs'; 1972, p. 21) can have a dramatic impact, but less because there is also a longer-term predictability to these fluctuations and a degree to which, as we argue later in the book, important structuring features of island life persist beyond them.

One further workable set of ideas that we consider to have as yet underappreciated potential for understanding Mediterranean landscapes can be found in niche construction theory. This is a relatively straightforward and simple body of ideas that was first developed in population and evolutionary ecology for the study of non-human organisms and that seeks to demonstrate how various species manipulate their environments in ways that improve their fitness. It is also clear that humans are themselves inveterate niche constructors, and traits such as adult lactose tolerance and sickle-cell anaemia are biocultural adaptations arising from selective pressures created by the construction of niches (e.g., the domestication of animals and cultivation of wetlands for food production; Laland and O'Brien 2010; Laland, Odling-Smee and Myles 2010; also Riede 2011). Inheritance and wealth transmission in human societies can also be understood through the same lens (Shennan 2011) as improving the chances for one's offspring through manipulation of the (social) environment. In Mediterranean landscapes, obvious examples of culturally constructed niches are fields that have been cleared of stones and/or woody vegetation to enable cultivation. These acts of clearance have long-term physical effects on soils, vegetation,

hydrology and so on, as well as cultural ones (creating more visible places in the landscape, linked more directly to patterns of tenure, culturally laden toponyms, etc.). Cleared stones also contribute to more or less useful concentrations nearby such as cairns, walls, shelters, terrace risers, wells, agricultural installations and so forth. These efforts have both short-term benefits for the household or households involved (Netting 2006) as well as critical longer-term, intergenerational benefits, in some cases for unrelated newcomers to the area at a much later date, but in many instances for direct family descendants. Hence, niche construction of this kind has an impact on inclusive fitness (the fitness of kin), and it is clear historically that such investments were often made with this longer-term perspective in mind. In this context, niche construction theory is similar to a branch of cultural geography that studies long-term, multigenerational investments in the agricultural landscape such as terraces ('landesque capital'; see Brookfield 1984; Blaikie and Brookfield 1987, p. 9; Widgren 2007).

Chapters 5–7 come back to these issues, particularly with regard to the reuse of particular locations, in discontinuous and unrelated episodes of activity, separated by gaps of up to a few hundred years. Such punctuated reuse can be defined as a form of *persistence* in cultural landscapes, which arises from local inhabitants' niche-construction activities coupled with their underlying demographic fragility. Hence, the inverse of an archaeology of persistence is an archaeology of the fragile, by which we mean attention to the boom-and-bust cycles of small island life in terms of demography, material culture and personal experience. By pairing these approaches we acknowledge that they are best understood in tandem. For example, the initial occupants of such a landscape alter it by clearing stones, planting orchards, building terraces and constructing buildings, but eventually leave their holdings. If this is part of a wider pattern of abandonment, the whole landscape may not be occupied for some time, but a subsequent phase of colonists, in choosing where to settle and invest labour, will encounter residual field walls, accumulations of stones, foundations and possibly feral orchards that can be returned to productivity more easily than the surrounding areas. After a few generations, the cycle may begin again, and the result is a palimpsest and spatially constrained set of material remains reflecting multiple phases of discontinuous occupation over many thousands of years. In effect, this process sees the emergence of culturally mediated 'places' as they manifest themselves above and beyond the general affordances of the environment, and thus strike an attractive analytical balance between environmental determinism and historical relativism. Such places are of interest for how they are entwined with the changing structure of human communities, patterns of connectivity, levels of long-versus short-term investment, intentional versus unintentional outcomes, specialisation and opportunism, and we have all of these points of reference in mind in presenting the detailed arguments of Chapters 5 through 8.