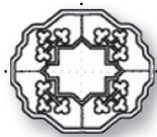


## CHAPTER ONE



# Evolutionary and Interpretive Archaeologies: A Discussion

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### DIVERGENT TRENDS IN CONTEMPORARY ARCHAEOLOGICAL THEORY

One of the few areas of real debate in archaeological theory today is how to classify archaeological theory. Theoretical diversity has become a hallmark of archaeology, and opinions differ as to whether this range can be accommodated within a grander scheme of at least complementary approaches (Hegmon 2003, 2005; Renfrew 1994:10; cf. Renfrew and Bahn 2004:496–501; Tilley 1995) or whether fragmentation should be embraced (Hodder 2001:3–4, 2002, 2003; Moss 2005; VanPool and VanPool 2003a). Either way, the polarised debates over substantive differences in viewpoint that characterised the 1980s seem to have receded (even if these have become somewhat oversimplified as time has passed). Different groups of archaeologists go about their work with limited interaction (Hodder 2001:7; Johnson 1999:182–87). Whether one is in favour of or opposed to the notion of a unified discipline, this cannot be a healthy state of affairs for the intellectual vigour of the field. What is striking is that there has been almost no dialogue between, or even comparison of, two of the most innovative current schools of thought: interpretive and Darwinian archaeologies (notable exceptions including Kristiansen 2004; Mithen 1989; see below). While these are of course internally diverse, each represents the continued unfolding of long-established traditions that have engaged in constructive dialogue before, and surely must again if each is not to become a closed and sterile community.

Why have such divisions become the norm in contemporary archaeological theory? The debates of the 1980s and early 1990s certainly prompted some attempts to synthesise the objectives of processual and postprocessual archaeologies (Renfrew 1994; Schiffer 1988; Trigger 1991, 1998;

VanPool and VanPool 1999; cf. Hodder and Preucel 1996; Yoffee and Sherratt 1993), but the success of these is debateable. As the century has turned, it seems that many have been content to conduct ‘business as usual’ within their own approaches without seeking to win arguments that are perhaps regarded as unwinnable, or simply as tiresome (Hodder et al. 2008:38). The relationship between theoretical discussion and methods of data handling is also an issue here, with Johnson recently noting that core archaeological concepts remain largely immune to the more dynamic debates (Johnson 2006; cf. Johnson 2004), perhaps making the latter seem superfluous to many. Yet amid the seemingly placid landscape of archaeologists mixing and matching their theoretical viewpoints as they see fit, there lurks the danger that significant theoretical problems are not being worked through. The propensity of archaeological theorists to move overrapidly from one half-baked set of borrowed ideas to the next has been remarked upon frequently (e.g., Bentley and Maschner 2008:5–6; Chippindale 1993:33–35; Hodder 2002:77–78), and without sustained and constructive engagement between different perspectives this process will continue. Each iteration of the cycle leads to further fragmentation but can leave the gaps between approaches, where issues of real import lie, untouched.

It is our contention that nowhere is such engagement needed more than between Darwinian, or evolutionary, and interpretive perspectives. Some attempts have been made to compare and even synthesise elements of these programs (e.g., Kristiansen 2004; Mithen 1989; Shennan 2004; VanPool and VanPool 2003b), but these have tended to begin from a starting point firmly in one or other camp and have focussed on certain issues (particularly agency) at the expense of others. The real debate over the major points of difference, increasingly underway in the broader field of anthropology after a similar period of mutual disdain (e.g., Ingold 2004; Nettle 2009; Schultz 2009; cf. Fearn 2008), has yet to start—and it is hoped that this volume represents such a beginning. An important step in this debate is to move beyond the caricature and misunderstanding that has led to the dismissal of opposing views in the past (e.g., Leonard 2003:145; Shanks and Tilley 1992:53–56), and to seek to clarify where differences are primarily related to the specialised languages being used (cf. Bentley and Maschner 2008:5), and where they are related to fundamental matters of epistemology or of different understandings of the appropriate goals of archaeological research. Our goal is not necessarily agreement, but at the least better-informed disagreement. Furthermore, this kind of engagement is essential not simply to hone the arguments on each side, or to break down false barriers, but also to address a growing contradiction in the public face of archaeology. Both interpretive and evolutionary archaeologists have strong views on the public role of our discipline (e.g., Holtorf 2005:150–60; Shennan 2002:9–14),

and if the former have widened the debate on how, and from whom, archaeological stories should emerge, evolutionary accounts of the long-term development of human behaviour seem to be gaining in media and even political popularity (Newman 2009a, 2009b). The very different kinds of accounts of the past that archaeologists can produce in the public sphere—from extremely general to very particular—highlight some of the contrasts to be worked through.

How might these two schools be defined for the purposes of this volume? Neither is homogenous or uncontested. Up to a point, interpretive archaeology is to postprocessual archaeology what processual archaeology is to the New Archaeology—a maturation of a range of approaches with a broad set of common interests but divergent emphases. The degree of divergence is considerably greater than was the case with processual archaeology (Thomas 2000:1–2), largely because postprocessual archaeology has drawn upon a very wide range of influences—Marxism, feminism, structuralism, poststructuralism and phenomenology foremost amongst them. While there has been some resistance to grouping these diverse archaeologies together, they do have—in common with much cultural anthropology—shared interests in symbolism, meaning, power, identity and closely contextual interpretation, along with a degree of acceptance of relativist or constructivist epistemology (Shanks 2008; Shanks and Hodder 1995; cf. Thomas 2000). Superficially much more focused on the legacy of Darwin, and certainly with a much stronger degree of collaborative research coordination, evolutionary archaeology also has a range of subdivisions and disagreements. These are often classified into three major sets of ideas: Dual inheritance theory employs two distinct transmission (or inheritance) systems, cultural and biological, to explain human variation. Behavioural ecology explains human behavioural variation as a product of our tendency, conscious or not, for adaptive decision making. Evolutionary psychology understands contemporary human behavioural variation as a result of cognitive adaptations that occurred previously in our hominid evolution (Bentley et al. 2008:112–24; Hegmon 2003:214–26; Shennan 2002:15–18). By far, dual inheritance theory and behavioural ecology are the primary frameworks applied by evolutionary archaeologists. One key dimension of variation between these is whether Darwinian principles are considered in terms of the biological reproductive success of humans or rather as accounting for cultural change that is separate from, but interacts with, biological processes. While there are other sources of diversity (Mithen 1989; Schultz 2009), what tends to unite evolutionary approaches is not just Darwinian ideas of variation, transmission and selection, but a commitment to hypothesis testing and theory building relevant to behavioural and archaeological observations.

## A CHEQUERED HISTORY: THE ORIGINS AND DEVELOPMENT OF THE DIVIDE

The internal diversity of these two schools of thought perhaps accounts for their dynamism as a product of theoretical debate within their respective boundaries. Crossing these boundaries might be even more productive, especially if engagement can build upon previous points of contact between antecedent approaches and at the same time overcome misunderstandings based upon old stereotypes. In tracing the origins of the relationship between evolutionary and interpretive archaeologies, we need to go back rather further than the obvious processual versus postprocessual debates and explore some connections and contrasts in the nineteenth century. Just as it is important to look into the context of Darwin's thought (Johnson, this volume), so is it salutary to look at the influence that Darwin had on other key thinkers of this period, many of whom read broad applicability into his conceptual framework. Karl Marx, for example, read *On the Origin of Species* in 1860 and likened its ideas to that of class struggle; he sent a copy of the first volume of *Capital* to Darwin in 1873 (and another to Herbert Spencer; Kamenka 1983:xxi, lxxx, xcvi; cf. Patterson 2003:14). Engels's speech at Marx's graveside compared the two thinkers: 'Just as Darwin discovered the law of development of organic nature, so Marx discovered the law of development of human history' (Kamenka 1983:69). The emphasis on the material struggle for survival was a clear point of contact, developed as Marxism progressed and integrated other forms of evolutionary theory (McGuire 2002:26). For others in this period, Darwin's chief influence was opening up a continuity between humans and the natural world and enabling both to be seen as dynamic and interactive rather than static; this was the case, for example, with Pragmatist thinkers like George Herbert Mead and John Dewey (Cohen 2000:85; Sandstrom et al. 2001:217).

Darwin's impact on nineteenth-century philosophy at a broad level was therefore quite profound (Collingwood 1946:129; Delanty 2000:30; Dunnell 1988; Rorty 1999:xx), and while succeeding developments in these and other traditions have hardly applied Darwinian principles to human culture in detail (see Dunbar 2007)—and indeed have criticised some attempts to do so (e.g., Callinicos 2004:xxxvii)—neither have they been afraid to acknowledge this impact. Indeed, Richard Rorty, a contemporary Pragmatist philosopher of some influence in postprocessual thought (Hodder 2003:5; e.g., Webmoor 2007), is clear about Darwin's significance (Rorty 1999:128), including him among the inspirational 'anti-Platonic, antiessentialist, historicizing, naturalizing writers of the last few centuries (people like Hegel, Darwin, Freud, Weber, Dewey and

Foucault)'. Neither interpretive nor evolutionary archaeologists seem to place him in the same company or recognise such connections (e.g., Leonard 2003:146–48; cf. Bintliff 2000:165). Rather than explore the tension between the philosophical implications of Darwinism and any more specific cultural applications, archaeologists have instead become mired in a century-long debate about Social Darwinism and the dangers thereof, which still colours many perceptions today. The first significant wave of evolutionary archaeology in the late nineteenth century was shaped more by Spencer, Morgan and Tylor than Darwin, and supplanted by the more particularist cultural history of the early twentieth century under the influence of Boas in the US and Montelius in Europe (Eriksen and Neilsen 2001:39–41; Leonard 2001:65–66; Trigger 2006:227–30). The second wave of post-WWII evolutionary anthropology, bound up in the New Archaeology, was more genuinely materialist—in a way not dissimilar to classical Marxism (McGuire 2002:89)—and it was primarily to this that postprocessual archaeologists reacted, as well as to the burgeoning manifestations of sociobiology and evolutionary psychology in the 1970s (Shanks and Tilley 1987:137–65; 1992:56). Contemporary Darwinian archaeology as explored in this volume is distinct from both of these earlier phases (Dunnell 1980), but still tends to be tarred with the brushes of determinism, reductionism and ethnocentrism (Leonard 2001:67–68). This is one of the chief obstacles to debate.

From the other side, there are also misconceptions to be overcome concerning interpretive traditions. Though influenced by Darwin, some of the nineteenth-century thinkers held dear by postprocessual archaeologists developed critical views on the problems of behaviourism that foreshadow more recent attacks on evolutionary approaches to culture (De Waal 2002:9–15; Joas 2001:89–90; Patterson 2003:14–15; cf. also Collingwood 1946:115, 129, 211–12, 332). Furthermore, subsequent developments have moved Marxism, for example, away from some of its evolutionary foundations. For the same reasons that postprocessualists rejected elements of evolutionary theory, they rejected classical Marxism's attempt to fit human cultural diversity within universal laws and favoured instead the neo-Marxist and structurationist emphasis on contingent contexts of praxis (e.g., Shanks and Tilley 1987:165–85). These reasons are complex, and they are not all to be ascribed to wrong-headed or lazy intellectual nihilism or misunderstanding of Darwinian theory, as has sometimes been asserted (e.g. Leonard 2001:67–68; cf. Shanks and Tilley 1992:55). Darwinian critics of interpretive archaeology often neglect to acknowledge the range of social theories and attendant analytical tools that are deployed within Marxist, phenomenological or structurationist viewpoints (for example), or to debate the question of whether understanding emergent human social complexity

might require new sets of ideas that deal with this more adequately than does evolutionary theory. Nor are interpretive archaeologists generally extreme relativists; they do openly deploy qualified cultural universals (e.g. Hodder 1985:6, 13; cf. Mithen 1989:485) and certainly do not reject Darwinian accounts of human evolution (creationism tends to be notably absent from the multiple narratives tolerated by postprocessualists, providing an interesting example of the contextual limits of relativism; cf. Geertz 1984; Schultz 2009). To equate postprocessualism with medieval scholasticism (Kohl 1993) is therefore just as hobbling to discussion as accusing evolutionary archaeologists of being Social Darwinists. Many of the differences between the two schools of thought may simply be due to terminological divergences over the last century and a half (Bentley and Maschner 2008:5) and to alternative readings of hallowed texts (McGuire 2002:18), or they may reflect genuine disagreements over understandings of human societies and what archaeology might reveal about these. We will not discover which of these possibilities is most accurate unless debate moves forward informed by the context of intellectual history, but unhindered by outmoded stereotypes.

### CARRYING FORWARD THE DEBATE: THEMES IN THIS VOLUME

To move forward we identify a number of key themes that emerge from both the chapters in this volume and related interpretive and evolutionary archaeological literature. These themes represent what we regard as the cornerstone for comparison of interpretive and evolutionary archaeologies and should therefore be kept in mind when reading the chapters in this volume. They are not, however, always explicitly considered by evolutionary and interpretive archaeologists when writing for their colleagues and collaborators, or when attempting to engage archaeologists who adhere to a different framework (e.g., Kristiansen 2004). These themes do not necessarily highlight areas of agreement, but rather areas of, perhaps unnoticed, mutual concern. We are trying here to distil the debate down to its most basic components.

Our first theme is a simple question: what is it that archaeologists study? The answer to this question greatly shapes many characteristics of the evolutionary and interpretive programmes. While for archaeologists of any theoretical stripe, artefacts and other archaeologically relevant physical materials are contemporary phenomena, the focus of study—what archaeologists seek to understand—differs. Although this is an oversimplification (e.g., compare O'Brien and Lyman 2000 and Shennan 2002), evolutionary archaeologists attempt to explain variation in the physical and relative spatial characteristics of artefacts and archaeological features, not the past as such (cf. Binford 1981). In the final

chapter of this volume, Shennan suggests that archaeology should play to its strength, and this is examining the empirical patterns of stability and change in the material record of human existence, and not, by way of contrast, a past lived experience. He argues that evolutionary theory, with concepts such as cultural transmission, lineage and selection, and with a focus upon explaining variation and change, is the most likely framework to produce convincing and rigorous accounts. The concern with explaining variation within a contemporary empirical phenomenon is related to the scientific epistemological standard or scientific method employed by Darwinian evolutionists. Alternative possible explanations are evaluated using generally agreed, and often quantitative, criteria for how well they account for variation in the empirical world (for diverse examples see Allen 1996; Buchanan and Collard 2008; Glatz et al., this volume). In this volume, Collier and Mace focus on the use of scientific method as a defining feature of evolutionary archaeology and anthropology. They argue that by adopting the philosophical tenets of scientific method, primarily the explicit evaluation of competing hypotheses, interpretive archaeology and anthropology might be more compatible with evolutionary research (cf. Johnson, this volume).

This will, undoubtedly, be undesirable to many, as interpretive archaeologists are more interested in the past *per se* as experienced and understood by people, both then and now, than the empirical record, though again this is a simplification (e.g., Barrett 2001; Shanks and Tilley 1992:172–240; Thomas 1996:55–64; Hamilton, Sillar, both this volume). This is not to say that interpretive archaeologists are unconcerned with the material record. The material record does shape what is said about the past (e.g., Shanks and Tilley 1989:48–49). Moreover, Johnson in his chapter argues that within interpretive archaeology one can understand the past through the material record in a way that is as empirical and rigorous as the evolutionary programme described by Shennan. Johnson notes that many evolutionary accounts in archaeology are narratives, not much different in terms of ‘testability’ to interpretive archaeological research. In general, however, it is fair to say that interpretive research recasts, describes and theorises the past, a decidedly non-empirical entity, and therefore we might not expect interpretive archaeological theory to be constrained by empirical sufficiency to the same degree as evolutionary theory, which has been expanded and retooled to apply to the archaeological record (cf. Cochrane 2009). This certainly has engendered, in part, the substantial development of diverse theoretical approaches within interpretive archaeology (Hodder 2003; Thomas 2000). Finally, regardless of one’s particular specialization, it should go without saying that both the past and the contemporary archaeological record are legitimate subjects of study.

Undoubtedly related to the issue of what it is that archaeologists study, the different emphasis placed on methods in interpretive and evolutionary archaeologies is a second theme in this volume and related literature. To be clear, we regard theory as the set of explicit assumptions and processes we articulate to supplant our common-sense understanding of the past and the archaeological record. For our purposes here, methods may be differentiated from theory as sets of goal-related procedures for examining phenomena. A short-hand way to think about methods is as the procedures we use to make observations that are explained and understood by theory. Compared to evolutionary archaeology, there is a much smaller body of methodological or 'how-to' literature for interpretive archaeology, although notable exceptions include recent phenomenological literature (e.g., David and Thomas 2009; Hamilton, Whitehouse, both this volume) and discussions of excavation methods (e.g. Chadwick 2003; Hodder 1997; Lucas 2001); the latter, perhaps surprisingly, is not well considered in the methodological literature of evolutionary archaeology. The relatively small role for method in interpretive archaeology may be partly explained as a reaction to processualism, itself largely characterised as a methodological revolution (Meltzer 1979), one focused on scientific method (e.g., Plog 1973), archaeological classification through middle range research (e.g., Binford 1981), the identification of site formation processes (e.g., Schiffer 1987) and abundant methods for generating environmental data (e.g., Butzer 1982). Interpretive archaeologists have often rejected scientific method and have shown little interest in or need of methods associated with middle range research (e.g., Thomas 2004:55–77), preferring to generate observational classes or types from emic categories of ethnography and from documents and personal experience (i.e., phenomenology) (e.g., Hodder 1982a). Processual-associated methods focused on environments and site formation have often provided more useful observations for all archaeologists, including those in the interpretive tradition.

Regardless, we suggest that the relative dearth of explicitly interpretive methodological literature is related to the great diversity of interpretive theory. The many theoretical frameworks used by interpretive archaeologists can comprise radically different central assumptions and foreground quite different explanatory processes, and thus common methods may find little use. For example, Hamilton (this volume) discusses phenomenological methods that use the human senses to experience landscapes *in situ*. All senses are used, not just vision, when one is in an archaeological landscape to probe how a past person's understanding of a particular place may be related to their bodily experience of it. Hamilton suggests that phenomenologists not abandon perhaps more 'processual' approaches to measuring the landscape (total stations,

GIS and so forth), but that these analyses be deployed subsequent to or alongside phenomenological surveys. In her own work in Italy (Hamilton and Whitehouse 2006), Hamilton has combined phenomenological survey with processual site catchment analysis. In comparison with Hamilton, Sommer's research (this volume), also broadly interpretive, uses a different set of methods, largely unremarked and derived from culture historical and processual examinations of artefact style, to examine ethnogenesis. She argues that the processes leading to the formation of ethnicities, as we understand them in the contemporary world, also likely explain the formation of ethnic groups 7000 years ago in what is now western Germany. While both Hamilton's and Sommer's interpretive research have a common interest in the past individual's experience, their analytical methods are quite different.

In contrast, for evolutionary archaeologists working within a more unified theoretical framework, specific methods have gained widespread use and attention in the literature. Evolutionary archaeological methods include those for classifying artefacts and making observations relevant to evolutionary processes (e.g., Dunnell 1978; O'Brien et al. 2002). In this volume, Cochrane examines methods such as seriation and engineering analyses used to arrange and describe artefacts in terms relevant to cultural transmission and processes such as drift and selection. He compares this with work in memetics that seeks to define cultural transmission units. Other methods in the literature of evolutionary archaeology, for example, lay out the general steps in evolutionary analyses (e.g., Hunt et al. 2001; O'Brien and Lyman 2000) and describe how to generate and explain artefact distributional data (e.g., Lipo et al. 2006; Tehrani, Glatz et al., both this volume). Tehrani, in his chapter here, discusses the use of cladistics, a method for arranging artefact classes into branching trees of cultural relatedness, in evolutionary anthropology and archaeology. He notes that these evolutionary methods have a long history in archaeology and anthropology, stretching back to Pitt-Rivers.

A third theme arising in this volume and prevalent in the wider literature is the generalizing versus particularizing natures of evolutionary and interpretive research, respectively. The appropriateness of archaeology as either a generalizing or particularistic enterprise has been a flashpoint of debate for at least 25 years (e.g., Binford 1962; Hodder 1982b). This either-or characterization has never been particularly accurate (cf. Clarke 1973; Hodder 1985), and indeed we would not expect it to be if what it is that archaeologists study includes both the past and the contemporary archaeological record, understood at a range of scales. Evolutionary theory as used by archaeologists, biologists, behavioural ecologists and others comprises a set of processes used to explain variation across populations (Mayr 1976) and thus, by design, is generalizing to a degree.

Evolutionary explanations usually include a process accounting for the distribution of variants in a group, and even when evolutionary explanations are seemingly targeted at individuals, these explanations only make sense relative to other individuals in a population. For example, Bentley, in this volume, discusses how processes such as drift and selection are applicable to culture. In particular he notes that regardless of whether people consider themselves independent decision makers (or are so-considered by archaeologists) or purposeful copiers of other people, the results of their decisions about what dog breed to own, what to name their baby, how to decorate their pot, or other choices take on recognizable and explicable distributions across populations. Bentley also provocatively suggests that the distribution of different types of archaeological theory can be understood in a similar manner. Evolutionary explanations, like any scientific explanation, may also be considered generalizing because the processes used to generate explanations are mechanistic. A synonym for mechanistic in this case is external; evolutionary explanations refer to processes that are external to the phenomena under study. To take a behavioural example, evolutionists do not necessarily assume that people engage in a behaviour with the intent of maximizing their lifetime geometric mean fitness (cf. Boone and Smith 1998; Lyman and O'Brien 1998). In other words, irrespective of an individual's intent, the distribution of behavioural variants in a population may be explicable via an external or mechanistic process like selection.

The primacy given to population-level descriptions and external processes in evolutionary archaeology contrasts with interpretive archaeological explanations that more often focus on unique or particularistic details of an individual, or a group of individuals, and processes that are internalised within human minds. The concern with the unique contexts of a group of individuals derives from the interpretive principle that the meaning of material culture is actively produced by the makers, users and consumers of material culture, a key plank of early postprocessualism (e.g., Hodder 1985; cf. Johnson 1989; Gardner, this volume). The particularistic quality of much interpretive research comes, in part, from attempts to understand meanings and settings that are unique to an individual or group. Using examples from Peruvian archaeology, Sillar, in this volume, argues that we must understand the motivations and intentions that are unique to people and groups in particular times and places if we are to adequately explain technological change in the archaeological record. This, he argues, reflects the role of human decision making as a primary selection criterion. As suggested above, interpretive archaeological research also involves the use of generalised processes. For example, analyses of embodiment (Whitehouse, this volume) rely upon principles argued to have general applicability, while among theories of agency

and structure (Gardner, this volume), concepts like *habitus* are treated as relevant in many different contexts. James, in his chapter in this volume, discusses the interpretive archaeological treatment of violence and comments on a series of generalizations that archaeologists in this tradition have used to understand violence and warfare in the past. These include the interpretation of both Iron Age fortified settlements and medieval castles as symbolic manifestations of concepts of community and ideology (that also capture broader-scale social phenomena). Interpretive archaeologists often regard general principles as descriptions of thought processes, desires, intentions or subconscious motivations of individuals or groups, and thus produce explanations or understandings of the past that we might consider internalised. In contrast to some of the mechanistic explanations of evolutionary archaeology, the internalization of interpretive explanations also gives them a particularistic flavour.

The way in which interpretive and evolutionary archaeologists use general principles also influences the understanding of determinism and the extent to which variation in past human behaviour and the results of human behaviour, namely artefacts and features of the archaeological record, can be explained within a deterministic or rule-bound framework. By determinism we mean the concept as it is normally understood by archaeologists (e.g., Hodder and Hutson 2003:7), that is, outcomes are predictable because a particular process is law-like, X causes Y. Determinism in archaeology is linked to processualism (O'Brien et al. 2005), and thus it is no surprise that evolutionary archaeological explanations are also often considered deterministic. Specifically, in evolutionary research the people whose behaviours created the archaeological record are sometimes seen as automata whose lives are forced along particular paths by deterministic processes (Hodder and Hutson 2003:40–41; Shanks and Tilley 1987:143–65; Thomas 1991). The contrary idea of free will and the ability to make choices unconstrained by external forces is often seen to describe interpretive archaeological research, and in particular the individuals in the past that are a focus of this research (see, e.g., Knapp and van Dommelen 2008; Kristiansen 2004:83–85).

Neither of these extremes is, of course, an accurate characterization of archaeological research in either school (Colleran and Mace, Gardner, both this volume). For interpretive archaeologists, it is not 'anything goes', as minimally, all human action is channelled by biological possibilities or by structural constraints. Whitehouse, for example, argues in her chapter in this volume that while human bodies can be understood from an interpretive perspective, that is as cultural 'things', these interpretations are almost always underpinned by biological research, sometimes within the same piece of work (though cf. Fowler 2002; Yates 1993). Interpretive work on human bodies often focuses on the social

and cultural ways that difference is constructed through the body. More prosaic perhaps, but no less true, interpretive archaeological theory provides a set of rules, or deterministic relationships, by which the behaviours, intentions, beliefs and meanings of past lives are reconstructed (Shanks 2008). For interpretive archaeologists there is, however, less concern that 'the correct' past life has been reconstructed, rather that the particular interpretive theory and biological or structural possibilities have been adhered to. Said in a more nuanced way, many interpretive archaeologists would not agree that there is a single 'correct' reconstruction of past life.

The caricature of evolutionary archaeology is similarly strained (e.g., Zeder 2009). Evolutionary archaeologists do not assume that humans in the past (or present) were mindless automata randomly moving through life seeking only to maximise their fitness. More to the point for determinism, evolutionary archaeologists have never suggested there are genes for certain artefact types (cf. Loney 2000), although terms like 'phenotype', referring to the physical expression of inherited information (genetic or cultural), have been sloppily used in the past (Bentley et al. 2008). Moreover, evolutionists do not deny that humans almost always act with intent and consistent with a set of culturally mediated and sanctioned beliefs. However, consistent with their view of evolution as a mechanistic or external explanatory system, evolutionists conduct research by examining behaviour and the results of behaviour to see if observed distributions conform to expectations outlined by evolutionary processes. In this kind of analysis, one could suppose that people were acting 'as if' they had evolutionary processes in mind, but this is unnecessary. This research agenda allows evolutionists to use simple and historically quite useful assumptions, such as those developed in game-theoretic models, to make predictions about the characteristics of the archaeological and behavioural records. One well-used model is the prisoner's dilemma as discussed by Layton (this volume). He notes that to appreciate under what conditions individuals will most likely engage in violence we can examine their possible decisions in terms of a cost-benefit analysis that considers the variable decisions of others, in this case whether to meet the individual's violent challenge with violence or acquiesce. Again, to be clear, research that employs mechanistic explanations such as Layton describes does not assume that people consciously think in game-theoretic terms using categories like 'pay-off', 'defection' and the like (although they might). Importantly for a discussion of determinism, when the predictions of game-theoretic or other evolutionary models such as optimal foraging are not met through observations of the behavioural or archaeological record, such results are also interesting and suggest that a process other than that first assumed may be worth

investigating. For example, Glatz et al., in this volume, examine late Bronze Age ceramics in Anatolia by comparing them to distributions expected by neutral theory as used in evolutionary archaeology. Neutral theory, developed from biological evolutionary theory and archaeology (Dunnell 1978; Neiman 1995; Bentley, this volume) predicts that some artefact types will be stochastically distributed in time and space in a manner that reflects aspects of demography. Glatz et al. find that this is not the case for some pottery phases and are able to suggest alternative processes to explain these distributions. One might argue that the use of simple or deterministic models makes evolutionary theory artificial and somehow unrealistic. All theory, however, is artificial and has different degrees of realism. To wit, few people go about their daily lives thinking of their behaviour in terms of kin selection or how their behaviour might reflect poststructuralist symbolic fluidity. We use theory, evolutionary and interpretive, to take the place of our default sense-making system, our implicit, largely cryptic common sense.

A final theme emerging from the evolutionary and interpretive discussions in this volume, and further afield, is ontological; that is, how do different views on the nature of existence affect the characteristics of evolutionary and interpretive archaeology? Interpretive archaeologists view human culture as something different in kind from the rest of the natural world. The theories used to understand or articulate human action and belief, the human past and present are therefore unique to understanding humans and are not particularly appropriate to other animals or materials. Gardner, in his contribution to this volume, notes that 'agency theory' has been developed over almost three decades in archaeology (and longer in other disciplines) as a means to understand the relationships between acting individuals and societies' institutions. It goes without saying that agency theory is not much used to explain non-human animal behaviour (although see Gosden 2005). Evolutionary archaeologists, on the other hand, view humans as different from other animals, but this difference is one of quality, not kind. The same general principles used to explain behavioural and artefactual variation in non-human animals (e.g., Bonner 1980; Hunt and Gray 2003; Lycett et al. 2009) can be used to explain people as well (cf. Laland and Galef 2009).

## COMPETITION OR COLLABORATION? THE FUTURE OF ARCHAEOLOGICAL THEORY

The emergent themes in evolutionary and interpretive archaeology indicate that many differences in these research programmes are a product of the different objects of archaeological study and different views on the

nature of 'human' in relation to the rest of the world. As there is more than one legitimate answer to each of these questions, is the future of archaeology to be filled with competition between approaches or collaboration in research? Will the outcome of debate between advocates of these perspectives be cross-fertilisation or strengthening of individual standpoints? Will 'survival of the fittest' produce an eventual winner (cf. Bentley and Maschner 2008; Moss 2005; O'Brien et al. 2005) or will the 'dialectical struggle' lead to a new synthesis? We close this joint introduction with some individual points on the purpose and future direction of this important discussion.

AG writes: For me, the great benefit of the debate in our seminar series and in this volume has been the highlighting of taken-for-granted assumptions and modes of working within one tradition. The outcome of the comparison of interpretive and evolutionary perspectives is unlikely to be a unified field, but it should generate better scholarship on all sides. Defending some positions against quite reasonable alternatives, seeing others in new light as they look rather similar to the alternatives, and finding greater clarity in one's views on the goals of the discipline are all very positive experiences. Knowing as much as possible about what the different approaches to the archaeological enterprise are, and why one disagrees with some and agrees with others, is absolutely fundamental to the academic integrity of the individual, and the discipline. With respect to issues I am most concerned with (see further Gardner, this volume), delineating the distinctive features of a coherent approach to the action-structure problem requires not just evaluation of the competing ideas within the interpretive tradition, but close consideration of approaches adopted in the evolutionary paradigm, from methodological individualism to memetics. While I do not find myself persuaded to adopt elements of the latter, the same goes for some interpretive approaches, and I now know more about why this is the case. Above all, though, bringing these two traditions into a comparative perspective is good for debate; some of my most enjoyable academic discussions have come out of the work on this volume. I hope that this is the future that it will contribute to: one of continued, but actively constructed (and convivial), disagreement.

EC writes: I write this closing half a world away (literally and metaphorically) from where my serious thoughts on interpretive and evolutionary archaeologies began. In the course of editing this volume, participating in the original seminar series from which it originates (proposed, in truly collegial spirit, by AG), and through discussions with my interpretive archaeological colleagues, it has become clear to me that archaeology is an enormous, multistranded discipline and that to ensure its continued benefit to both practitioners and public we must support evolutionary, interpretive, and other kinds of research (e.g., classical

archaeology, materials science), teaching and public engagement. The research questions and interests of archaeology, particularly outside of North America, are far too varied to be adequately and satisfyingly understood by any one research tradition. For me, this is interpretive archaeology's greatest contribution—the recognition of multiple constituencies with their different and justifiable expectations for the shape of archaeological knowledge. Like AG, I do not see the discipline unified in the future. Not because of the specific differences between evolutionary, interpretive and other traditions, but particularly because archaeology contains both science-based and non-science programmes with very different epistemological standards. I do not agree with Johnson (this volume) that science is whatever we archaeologists do. However, I agree with him that some evolutionary research is as much a narrative, untestable story as some interpretive archaeology. Maybe herein lies a contribution of the following chapters: in both interpretive and evolutionary programmes there is excellent research and there is poor research, but we can only make this evaluation if we know about each programme's assumptions, methods and goals.

## REFERENCES

- Allen, M. S. 1996. Style and function in East-Polynesian fishhooks. *Antiquity* 70:97–116.
- Barrett, J. C. 2001. Agency, the duality of structure, and the problem of the archaeological record. In I. Hodder (ed.), *Archaeological Theory Today*, 141–64. Cambridge: Polity Press.
- Bentley, R. A., and H. D. G. Maschner. 2008. Introduction: On archaeological theories. In R. A. Bentley, H. D. G. Maschner and C. Chippindale (eds.), *Handbook of Archaeological Theories*, 1–8. Lanham: AltaMira Press.
- Bentley, R. A., C. P. Lipo, H. D. G. Maschner and B. Marler. 2008. Darwinian archaeologies. In R. A. Bentley, H. D. G. Maschner and C. Chippindale (eds.), *Handbook of Archaeological Theories*, 109–32. Plymouth: AltaMira Press.
- Binford, L. R. 1962. Archaeology as anthropology. *American Antiquity* 28:217–25.
- . 1981. *Bones: Ancient Men and Modern Myths*. New York: Academic Press.
- Bintliff, J. 2000. Archaeology and the philosophy of Wittgenstein (with a comment by J. Thomas). In C. Holtorf and H. Karlsson (eds.), *Philosophy and Archaeological Practice: Perspectives for the 21<sup>st</sup> Century*, 153–72. Göteborg: Bricoleur Press.
- Bonner, J. T. 1980. *The Evolution of Culture in Animals*. Princeton: Princeton University Press.
- Boone, J. L., and E. A. Smith. 1998. Is it evolution yet? A critique of Evolutionary Archaeology. *Current Anthropology* 39 (supplement):S141–74.
- Buchanan, B., and M. Collard. 2008. Phenetics, cladistics, and the search for the Alaskan ancestors of the Paleoindians: A reassessment of relationships among the Clovis, Nenana, and Denali archaeological complexes. *Journal of Archaeological Science* 35 (6):1683–94.
- Butzer, K. W. 1982. *Archaeology as Human Ecology*. Cambridge: Cambridge University Press.
- Callinicos, A. 2004. *Making History: Agency, Structure and Change in Social Theory*. Leiden: Brill.

- Chadwick, A. 2003. Post-processualism, professionalization and archaeological methodologies: Towards reflective and radical practice. *Archaeological Dialogues* 10(1):97–117.
- Chippindale, C. 1993. Ambition, deference, discrepancy, consumption: The intellectual background to a post-processual archaeology. In N. Yoffee and A. Sherratt (eds.), *Archaeological Theory: Who Sets the Agenda?*, 27–36. Cambridge: Cambridge University Press.
- Clarke, D. 1973. Archaeology: The loss of innocence. *Antiquity* 47:6–18.
- Cochrane, E. E. 2009. Evolutionary explanation and the record of interest: Using Evolutionary Archaeology and Dual-Inheritance Theory to explain the archaeological record. In S. Shennan (ed.), *Pattern and Process in Cultural Evolution*, 113–32. Berkeley: University of California Press.
- Cohen, I. J. 2000. Theories of action and praxis. In B. S. Turner (ed.), *The Blackwell Companion to Social Theory*, 73–111. 2nd edition. Oxford: Blackwell.
- Collingwood, R. G. 1946. *The Idea of History*. Oxford: Oxford University Press.
- David, B., and J. Thomas (eds.). 2009. *Handbook of Landscape Archaeology*. Walnut Creek: Left Coast Press, Inc.
- De Waal, C. 2002. *On Mead*. Belmont: Wadsworth.
- Delanty, G. 2000. The foundations of social theory: Origins and trajectories. In B. S. Turner (ed.), *The Blackwell Companion to Social Theory*, 21–46. 2nd edition. Oxford: Blackwell.
- Dunbar, R. I. M. 2007. Evolution and the social sciences. *History of the Human Sciences* 20(2):29–50.
- Dunnell, R. C. 1978. Style and function: A fundamental dichotomy. *American Antiquity* 43(2):192–202.
- . 1980. Evolutionary theory and archaeology. In M. B. Schiffer (ed.), *Advances in Archaeological Method and Theory*, vol. 3, 35–99. New York: Academic Press.
- . 1988. The concept of progress in cultural evolution. In M. H. Nitecki (ed.), *Evolutionary Progress*, 169–94. Chicago: University of Chicago Press.
- Eriksen, T. H., and F. S. Nielsen. 2001. *A History of Anthropology*. London: Pluto Press.
- Fearn, H. 2008. The great divide. *Times Higher Education* 1872 (20 November 2008):36–39.
- Fowler, C. 2002. Body parts: Personhood and materiality in the earlier Manx Neolithic. In Y. Hamilakis, M. Pluciennik and S. Tarlow (eds.), *Thinking through the Body: Archaeologies of Corporeality*, 47–69. New York: Kluwer Academic/Plenum Publishers.
- Geertz, C. 1984. Distinguished lecture: Anti anti-relativism. *American Anthropologist* 86(2):263–78.
- Gosden, C. 2005. What do objects want? *Journal of Archaeological Method and Theory* 12(3):193–211.
- Hamilton, S., and R. Whitehouse. 2006. Phenomenology in practice: Towards a methodology for a ‘subjective’ approach. *European Journal of Archaeology* 9:31–71.
- Hegmon, M. 2003. Setting theoretical egos aside: Issues and theory in North American archaeology. *American Antiquity* 68(2):213–43.
- . 2005. No more theory wars: A response to Moss. *American Antiquity* 70(3):588–90.
- Hodder, I. 1982a. *Symbols in Action*. Cambridge: Cambridge University Press.
- . 1982b. Theoretical archaeology: A reactionary view. In I. Hodder (ed.), *Symbolic and Structural Archaeology*, 92–121. Cambridge: Cambridge University Press.
- . 1985. Postprocessual archaeology. In M. B. Schiffer (ed.), *Advances in Archaeological Method and Theory*, vol. 8, 1–26. New York: Academic Press.
- . 1997. ‘Always momentary, fluid and flexible’: Towards a reflexive excavation methodology. *Antiquity* 71:691–700.
- . 2001. Introduction: A review of contemporary theoretical debates in archaeology. In I. Hodder (ed.), *Archaeological Theory Today*, 1–13. Cambridge: Polity.

- Hodder, I. 2002. Archaeological theory. In B. Cunliffe, W. Davies and C. Renfrew (eds.), *Archaeology: The Widening Debate*, 77–90. Oxford: O.U.P./The British Academy.
- . 2003. Archaeology as a discontinuous domain. In T. L. VanPool and C. S. VanPool (eds.), *Essential Tensions in Archaeological Method and Theory*, 5–9. Salt Lake City: University of Utah Press.
- Hodder, I., and S. Hutson. 2003. *Reading the Past*. 3rd edition. Cambridge: Cambridge University Press.
- Hodder, I., H. Karlsson and B. Olsen. 2008. 40 years of theoretical engagement: A conversation with Ian Hodder. *Norwegian Archaeological Review* 41(1):26–42.
- Hodder, I., and R. W. Preucel. 1996. Communicating present pasts. In R. W. Preucel and I. Hodder (eds.), *Contemporary Archaeology in Theory: A Reader*, 3–20. Oxford: Blackwell.
- Holtorf, C. 2005. *From Stonehenge to Las Vegas: Archaeology as Popular Culture*. Walnut Creek: AltaMira Press.
- Hunt, G. R., and R. D. Gray. 2003. Diversification and cumulative evolution in New Caledonian crow tool manufacture. *Proceedings of the Royal Society B* 270(1517):867.
- Hunt, T. L., C. P. Lipo and S. L. Sterling (eds.). 2001. *Posing Questions for a Scientific Archaeology*. Westport: Bergin and Garvey.
- Ingold, T. 2004. Introduction: Anthropology after Darwin. *Social Anthropology* 12(2):177–79.
- Joas, H. 2001. The emergence of the new: Mead's theory and its contemporary potential. In G. Ritzer and B. Smart (eds.), *Handbook of Social Theory*, 89–99. London: Sage.
- Johnson, M. H. 1989. Conceptions of agency in archaeological interpretation. *Journal of Anthropological Archaeology* 8:189–211.
- . 1999. *Archaeological Theory: An Introduction*. Oxford: Blackwell.
- . 2004. Agency, structure and archaeological practice. In A. Gardner (ed.), *Agency Uncovered: Archaeological Perspectives on Social Agency, Power and Being Human*, 241–47. London: UCL Press.
- . 2006. On the nature of theoretical archaeology and archaeological theory. *Archaeological Dialogues* 13(2):117–32 (plus comments).
- Kamenka, E. (ed.). 1983. *The Portable Karl Marx*. Harmondsworth: Penguin.
- Knapp, A. B., and P. van Dommelen. 2008. Past practices: Rethinking individuals and agents in archaeology. *Cambridge Archaeological Journal* 18(1):15–34.
- Kohl, P. L. 1993. Limits to a post-processual archaeology (or, the dangers of a new scholasticism). In N. Yoffee and A. Sherratt (eds.), *Archaeological Theory: Who Sets the Agenda?*, 13–19. Cambridge: Cambridge University Press.
- Kristiansen, K. 2004. Genes versus agents. A discussion of the widening theoretical gap in archaeology. *Archaeological Dialogues* 11(2):77–99.
- Laland, K. N., and B. G. Galef (eds.). 2009. *The Question of Animal Culture*. Cambridge: Harvard University Press.
- Leonard, R. D. 2001. Evolutionary archaeology. In I. Hodder (ed.), *Archaeological Theory Today*, 65–97. Cambridge: Polity.
- . 2003. Essential tensions. In T. L. VanPool and C. S. VanPool (eds.), *Essential Tensions in Archaeological Method and Theory*, 143–52. Salt Lake City: University of Utah Press.
- Lipo, C. P., M. J. O'Brien, M. Collard and S. Shennan (eds.). 2006. *Mapping Our Ancestors: Phylogenetic Methods in Anthropology and Prehistory*. New York: Aldine de Gruyter.
- Loney, H. L. 2000. Society and technological control: A critical review of models of technological change in ceramic studies. *American Antiquity* 65(4):646–68.
- Lucas, G. 2001. *Critical Approaches to Fieldwork*. London: Routledge.
- Lycett, S. J., M. Collard and W. C. McGrew. 2009. Cladistic analyses of behavioural variation in wild Pan troglodytes: Exploring the chimpanzee culture hypothesis. *Journal of Human Evolution* 57(4):337–49.

- Lyman, R. L., and M. J. O'Brien. 1998. The goals of Evolutionary Archaeology: History and explanation. *Current Anthropology* 39(5):615–52.
- Mayr, E. 1976. Typological versus population thinking. In E. Mayr (ed.), *Evolution and the Diversity of Life*, 26–29. Cambridge: Harvard University Press.
- McGuire, R. H. 2002. *A Marxist Archaeology*. Clinton Corners: Percheron Press/Eliot Werner Publications.
- Meltzer, D. J. 1979. Paradigms and the nature of change in American Archaeology. *American Antiquity* 44(4):644–57.
- Mithen, S. 1989. Evolutionary theory and post-processual archaeology. *Antiquity* 63:483–94.
- Moss, M. L. 2005. Rifts in the theoretical landscape of archaeology in the United States: A comment on Hegmon and Watkins. *American Antiquity* 70(3):581–87.
- Neiman, F. 1995. Stylistic variation in evolutionary perspective: Inferences from decorative diversity and interassemblage distance in Illinois Woodland ceramic assemblages. *American Antiquity* 60:7–36.
- Nettle, D. 2009. Beyond nature versus culture: Cultural variation as an evolved characteristic. *Journal of the Royal Anthropological Institute* (n.s.)15:223–40.
- Newman, M. 2009a. On the origin of sharing and its role in Tory view of a fairer society. *Times Higher Education*, 8 January 2009, <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=404905>, accessed 11 March 2010.
- . 2009b. Stone-age thinking. *Times Higher Education*, 12 March 2009, <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=405743>, accessed 11 March 2010.
- O'Brien, M. J., and R. L. Lyman. 2000. *Applying Evolutionary Archaeology: A Systematic Approach*. New York: Kluwer Academic/Plenum Publishers.
- O'Brien, M. J., R. L. Lyman, Y. Saab, E. Saab, J. Darwent and D. S. Glover. 2002. Two issues in archaeological phylogenetics: Taxon construction and outgroup selection. *Journal of Theoretical Biology* 215(2):133–50.
- O'Brien, M. J., R. L. Lyman and M. B. Schiffer. 2005. *Archaeology as a Process: Processualism and Its Progeny*. Salt Lake City: University of Utah Press.
- Patterson, T. C. 2003. *Marx's Ghost: Conversations with Archaeologists*. Oxford: Berg.
- Plog, F. 1973. Laws, systems of laws, and the explanation of observed variation. In C. Renfrew (ed.), *The Explanation of Culture Change: Models in Prehistory*, 649–61. London: Duckworth.
- Renfrew, C. 1994. Towards a cognitive archaeology. In C. Renfrew and E. B. W. Zubrow (eds.), *The Ancient Mind: Elements of a Cognitive Archaeology*, 3–12. Cambridge: Cambridge University Press.
- Renfrew, C., and P. Bahn. 2004. *Archaeology: Theories, Methods and Practice*. 4th edition. London: Thames and Hudson.
- Rorty, R. 1999. *Philosophy and Social Hope*. Harmondsworth: Penguin.
- Sandstrom, K. L., D. D. Martin and G. A. Fine. 2001. Symbolic interactionism at the end of the century. In G. Ritzer and B. Smart (eds.), *Handbook of Social Theory*, 217–31. London: Sage.
- Schiffer, M. B. 1987. *Formation Processes of the Archaeological Record*. Albuquerque: University of New Mexico Press.
- . 1988. The structure of archaeological theory. *American Antiquity* 53(3):461–85.
- Schultz, E. 2009. Resolving the anti-antievolution dilemma: A brief for relational evolutionary thinking in anthropology. *American Anthropologist* 111(2):224–37.
- Shanks, M. 2008. Post-processual archaeology and after. In R. A. Bentley, H. D. G. Maschner and C. Chippindale (eds.), *Handbook of Archaeological Theories*, 133–44. Lanham: AltaMira Press.
- Shanks, M., and I. Hodder. 1995. Processual, postprocessual and interpretive archaeologies. In I. Hodder, M. Shanks, A. Alexandri, V. Buchli, J. Carman, J. Last and

- G. Lucas (eds.), *Interpreting Archaeology: Finding Meaning in the Past*, 3–29. London: Routledge.
- Shanks, M., and C. Tilley. 1987. *Social Theory and Archaeology*. Cambridge: Polity.
- . 1989. Archaeology into the 1990s (with comments and reply). *Norwegian Archaeological Review* 22(1):1–54.
- . 1992. *Re-Constructing Archaeology: Theory and Practice*. 2nd edition. London: Routledge.
- Shennan, S. 2002. *Genes, Memes and Human History: Darwinian Archaeology and Cultural Evolution*. London: Thames and Hudson.
- . 2004. An evolutionary perspective on agency in archaeology. In A. Gardner (ed.), *Agency Uncovered: Archaeological Perspectives on Social Agency, Power and Being Human*, 19–31. London: UCL Press.
- Thomas, J. 1991. The hollow men? A reply to Steven Mithen. *Proceedings of the Prehistoric Society* 57(2):15–20.
- . 1996. *Time, Culture and Identity: An Interpretive Archaeology*. London: Routledge.
- . 2000. Introduction: The polarities of post-processual archaeology. In J. Thomas (ed.), *Interpretive Archaeology: A Reader*, 1–18. London: Leicester University Press.
- . 2004. *Archaeology and Modernity*. London: Routledge.
- Tilley, C. 1995. Archaeology: Theory, methods and practice. *Scottish Archaeological Review* 9/10:220–23.
- Trigger, B. G. 1991. Distinguished lecture in archaeology: Constraint and freedom – a new synthesis for archaeological explanation. *American Anthropologist* 93(3):551–69.
- . 1998. Archaeology and epistemology: Dialoguing across the Darwinian chasm. *American Journal of Archaeology* 102:1–34.
- . 2006. *A History of Archaeological Thought*. 2nd edition. Cambridge: Cambridge University Press.
- VanPool, C. S., and T. L. VanPool. 1999. The scientific nature of postprocessualism. *American Antiquity* 64(1):33–53.
- . 2003a. Introduction: Method, theory and the essential tension. In T. L. VanPool and C. S. VanPool (eds.), *Essential Tensions in Archaeological Method and Theory*, 1–4. Salt Lake City: University of Utah Press.
- . 2003b. Agency and evolution: The role of intended and unintended consequences of action. In T. L. VanPool and C. S. VanPool (eds.), *Essential Tensions in Archaeological Method and Theory*, 89–113. Salt Lake City: University of Utah Press.
- Webmoor, T. 2007. What about ‘one more turn after the social’ in archaeological reasoning? Taking things seriously. *World Archaeology* 39(4):563–78.
- Yates, T. 1993. Frameworks for an archaeology of the body. In C. Tilley (ed.), *Interpretative Archaeology*, 31–72. Oxford: Berg.
- Yoffee, N., and A. Sherratt (eds.). 1993. *Archaeological Theory: Who Sets the Agenda?* Cambridge: Cambridge University Press.
- Zeder, M. 2009. The Neolithic macro-(r)evolution: Macroevolutionary theory and the study of culture change. *Journal of Archaeological Research* 17(1):1–63.

