

This is a repository copy of *Time perspectivism: origins and consequences*.

White Rose Research Online URL for this paper:
<https://eprints.whiterose.ac.uk/11187/>

Book Section:

Bailey, Geoff orcid.org/0000-0003-2656-830X (2008) Time perspectivism: origins and consequences. In: Holdaway, Simon and Wandsnider, LuAnn, (eds.) Time in Archaeology: Time Perspectivism Revisited. Utah University Press , Utah , pp. 13-30.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

promoting access to White Rose research papers



Universities of Leeds, Sheffield and York
<http://eprints.whiterose.ac.uk/>

White Rose Research Online URL for this chapter:
<http://eprints.whiterose.ac.uk/11187/>

Published chapter

Bailey, Geoff (2008) *Time perspectivism: origins and consequences*. In: *Time in Archaeology: Time Perspectivism Revisited*. Utah University Press , Utah, pp. 13-30. ISBN 978-0-87480-929-9

Time Perspectivism: Origins and Consequences

GEOFF BAILEY

University of York

Time perspectivism is an idea that was born of the intellectual ferment in the archaeology of the late 1960s and 1970s and specifically the challenge posed in Cambridge during that period by the rapid succession and overlap of a very diverse array of “older” and “newer” archaeologies. The purpose of this chapter is threefold: to summarize what I mean by *time perspectivism*, drawing on another recently written article (Bailey 2007); to consider the historical context in which the ideas arose as a way of illuminating their wider meaning and significance; and to consider some of the difficulties that have inhibited their acceptance and their practical implementation, as well as the consequences that must follow from fully embracing a time perspective view of the world. The historical section offers a personal view of the events that unfolded over 30 years ago and in which I was involved.

WHAT IS TIME PERSPECTIVISM?

In its original formulation (Bailey 1981), time perspectivism was based on two principal ideas. The first was an emphasis on differences of scale, especially differences of time scale, and how such differences affect our understanding of events and processes—whether past or present ones. The idea here is that changes in the time scale at which we make observations change what we see and that varying time scales bring into focus different variables and processes that are not visible, or not so easily visible, at other time scales, thus requiring different sorts of concepts and explanatory princi-

ples. This corresponds to the notion of time as process (Bailey 1983:168) or what I (2007:201) have recently described as the substantive definition of time perspectivism, a definition in terms of how the world “out there” is supposed to work.

The second foundation was the emphasis on the structure of the archaeological record, especially the palimpsest nature of material data, the variable but generally coarse resolution that usually accompanies it, and how that affects what we can or cannot know about the past. In common with others writing at the same time (notably Binford 1981a; Foley 1981a), I saw in this apparent loss of resolution an opportunity to focus on a different scale of phenomena not accessible to the student of recent and present-day events and processes, rather than a limitation. I (2007:202) have described this as the methodological definition of time perspectivism, a definition in terms of how we study the past and how the questions we ask and the way we go about answering them are conditioned by our time scales of observation.

The original conception of palimpsest is worth some further elaboration in the words of the 1981 publications:

A sample of archaeological...data often represents a palimpsest of activities ranging over a period of at least a hundred years to several thousand or more. It refers not to the activities of individuals, or even individual societies, but to larger aggregates of behaviour, reflecting

average tendencies... over long periods of time ... with a coarseness of resolution... further accentuated by the margins of error inherent in radiometric dating.... [Such a] record refers, by definition, to long term trends. While this may seem a severe limitation, it also offers an opportunity to focus on a different scale of behaviour and imposes a requirement to adjust one's conceptual framework accordingly. [Bailey 1981: 109–110]

Similarly, Binford refers to

a massive palimpsest of derivatives from many separate episodes... a different order of reality, the patterned structure of which represents not a simple accumulation of little events... not a poor or distorted manifestation of ethnographic reality, but most likely a structured consequence of the operation of a level of organization difficult, if not impossible, for an ethnographer to observe directly. [1981a:197]

For Foley, archaeological data relate

primarily to long term, gross characteristics... the prolonged accumulation of repeated events... a blurring of the spatial patterns and... a richer but less resolved pattern... the accumulated residue of long periods of time... relating to those aspects of behaviour that are maintained over longer periods, and... [which] may in fact be serving the useful purpose of filtering out the ephemeral.... Long term trends may be of greater significance to the prehistorian than the understanding of a few short events.... Thus archaeologists must perforce deal with accumulated, palimpsest residues of prehistoric behaviour... [and this] significantly affects the scale of analysis and interpretation. [1981a:1–16]

I have quoted at length from these early essays not least because all three of us writing in 1981 appear to have published similar views independently but also because nearly 30 years on it is pertinent to ask how far any of us has been able to realize that original vision, a point I return to later. This con-

ception of the archaeological record contrasts with the more widely held view that the materials recovered by archaeologists are inherently incomplete and second-rate data, data that stand, rather inadequately, for something else—human behaviors, actions, and thoughts as we are used to describing those entities in our day-to-day lives and in the records of social anthropologists, sociologists, and historians. On this conventional view, progressive loss of evidence and loss of resolution, especially as one goes further back in time, result in progressively worse data, by definition inadequate to answer the questions we really want to ask about the past or in need of conversion into some other intellectual currency by means of clever theories or clever techniques before they can be used to say anything useful or interesting.

These ideas about differences of scale and the varying resolution of the archaeological record remain the two most important and fundamental ideas in time perspective thinking, though they have been variously expanded, modified, refined, and critiqued subsequently. In particular, they embody what are really two distinct aspects of time scale: time depth or time span, longer or shorter as the case may be, essentially the sense in which *time scale* was used in my 1981 article; and time resolution, coarser or finer according to the available dating methods and the temporal resolution and size of the samples of material available for study, the meaning implied in the use of the term *palimpsest*. In a general sense these two different aspects of time scale are closely correlated in archaeology. Detailed and accurate dating methods and chronologies are typically associated with large samples of data resulting in high-resolution records that both permit and encourage a focus on shorter spans of time. Conversely, as we move further back in time, so the dating methods become less accurate; the margins of error, wider; and the time span within which data have to be aggregated to form meaningful samples, larger. Nevertheless, these different meanings of scale—size and resolution—should be recognized as distinct in order to avoid confusion.

This correlation between high-resolution records and short time spans, and between coarse-resolution records and long time spans, is not

absolute. There are exceptions, or examples that are claimed as exceptions, and we should take the evidence as we find it. Nevertheless the correlation is typical and may indeed have a basis in the physical laws of our universe and the inevitable and progressive decay and loss of material with the increased passage of time. Moreover, this contrast between higher-resolution shorter-time depth records, on the one hand, and lower-resolution longer-time depth records, on the other, also tends to correspond to whether we are looking at more recent or more distant parts of the record. This introduces another meaning implicit in *time perspectivism*, and identified in the 1981 essay, the notion that what we can see and understand of the world changes according to whether we are closer in time to the phenomena we are observing or more distant. Closeness in time allows observation of higher-definition detail but within a narrower field of view; remoteness in time results in loss of local definition but the potential to observe a bigger pattern (cf. Renfrew 1981). This meaning corresponds to the way in which we use the concept of perspective when interpreting spatial phenomena and to what I (2007:202) have described as the strict definition of *time perspectivism*. As in the spatial dimension so in the temporal dimension, increasing the distance (in space or time) between the observer and what is observed not only creates distortions that require correction but also places particulars in a wider perspective that can introduce new understandings and perception of new relationships.

The article that followed (Bailey 1983) expanded on these themes and developed the idea of differences in the way different observers conceive of time, whether from cognitive, conceptual, psychological, cultural, or cosmological differences—time as representation rather than time as process (Bailey 1983:169), or what I (2007:202) have called the subjective definition of *time perspectivism*, how different observers both present and past, including archaeologists, have incorporated the time dimension into their experience of the world and developed varying “time structures” (Bailey 1983:186). This idea drew on anthropological ideas about time, which have been the topic of an expanding literature (summarized in James and Mills 2005

and references therein) and a fertile and popular source of inspiration for archaeological studies that have sought to use material culture to throw light on past people’s sense of time (Bradley 2002; Clark 1992; Lucas 2005).

The 1983 article is notable also for framing the discussion about time scales in terms of a contrast between “environmentalist” (ecological and environmental) schools of thought in archaeology and “internalist” ones (social and symbolic) and relating the former to long time scales and the latter to short time scales. This has caused immense difficulties for subsequent commentators. Most have assumed, either from an incomplete reading of the article or from deducing my views from my reputation as a practicing paleoeconomist without reference to the words of the text, that I was advocating such a polarity (Hull 2005 is a notable exception). This problem of misunderstanding has undoubtedly been a major reason why many have rejected time perspectivism or viewed it with suspicion, and I shall return to this point later.

In fact, I was advocating almost exactly the opposite. While such a polarity might help to explain why archaeologists with more or less environmentalist or internalist interests tended to gravitate to different time scales of observation and hence to different parts of the archaeological record, we needed to move beyond a simple temporal categorization of environmental and internalist processes. Both might operate on both longer and shorter time scales, but their relative influence and the nature of their interaction might differ depending on the time scale of observation, and these differences were matters that needed to be investigated rather than assumed a priori: “If environmental factors can have an impact over short time spans [as well as long ones], the question naturally arises as to the impact of social and psychological factors over long time spans...a very poorly explored area” (Bailey 1983:182). I went on to consider the question of interaction between scales in terms of two notions, supported by a range of examples. “Hierarchical causation” refers to circumstances where the difference between scales is so large that the variables at each scale appear to have no relationship to each other, other than as boundary conditions,

and the processes under investigation at each scale and the causes considered appropriate in framing explanations are essentially independent of each other. “Interactive causation” refers to overlapping scales where the variables interact, resulting in mutual transformation. Many subsequent examples have been explored, though mostly of the interactive nature and in relation to shorter time spans and more recent periods, as in archaeological work inspired by the *Annales* tradition in history (Bintliff, ed. 1991; Knapp, ed. 1992) or in the sociologically inspired debate over the roles of individual agency and structure in the British Neolithic (Barrett 1994; Bradley 1993; Harding 2005; Hodder 1999).

Also notable in the 1983 article is the absence of the terms *time perspectivism* and *time perspective*, but I reintroduced these terms in the 1987 article, which was a short summary of existing themes along with some additional consideration of both the virtues of time perspectivism and the potential objections to it, issues also discussed at some length in the conclusion to the 1981 essay.¹

The final article in the sequence (Bailey 2007) returns to many of the existing themes and seeks to clarify much of the earlier thinking and to respond to criticisms of the earlier work. In this article I also explore the issue of implementation through a more detailed consideration of the concept of palimpsest and address the issue of what sorts of substantive longer-term processes might be illuminated by a focus on palimpsests, drawing on examples from the Klithi fieldwork project that had occupied much of the intervening period. This article offers a definition of *palimpsest* as “a superimposition of successive activities, the material traces of which are partially destroyed or reworked because of the process of superimposition” (Bailey 2007:203), and goes on to analyze different types of palimpsests defined by differences of temporal and spatial scale and resolution. I conclude that palimpsests are a universal phenomenon that we can never escape (cf. Olivier 2001); that there are no such phenomena as isolated events or moments in time, or none that is knowable from the archaeological record, because of the durational properties of the material world; and that through an analysis of the varying properties of different types of pa-

limpsests we might find a different and empirically better grounded way of writing about human history in deep time. This article also revisits the fundamental issue of the relationship between present and past and introduces the term *durational present*, defined as “the envelope of time within which phenomena of interest are accessible to study, and beyond which they appear to recede from view” (Bailey 2007:216), in order to give formal expression to the essentially arbitrary nature of the boundary between “the present” and “the past” and to highlight the ways in which the time span of the durational present varies according to the interests of the observers and their preferred techniques of observation.

This notion of where the boundary lies between the present and the past has been a prominent theme in all these essays and a key to understanding the theoretical basis of time perspectivism through a critical evaluation of the concept of uniformitarianism, which received explicit treatment in all three of the 1980s essays and particularly extensive treatment in the 1983 article.

In its most general form, uniformitarianism, a concept introduced by geologists in the nineteenth century and adopted in Darwinian evolutionary biology, is based on a belief in the uniformity of the world, an essential basis for developing an understanding of geological and biological history that does not depend on the arbitrary intervention of a divine power. In this sense uniformitarianism is contrasted with supernaturalism and is hardly a source of controversy in modern intellectual discourse except perhaps for Creationists.

In its more specific form, uniformitarianism entails a belief that events in the past should be explained in terms of processes observable in the present and hence that the present is the key to interpretation of the past. This, however, poses much greater difficulties, and both geologists and some biologists have abandoned this position on the grounds that it fails to allow for past events that have no present-day analogue or for larger-scale processes with longer temporal rhythms that are literally not visible in the present or visible only with the use of very sensitive instruments, as, for example, in the use of laser beams to measure tectonic

plate motions. Gould (1965) specifically labeled this variant of uniformitarianism “substantive uniformitarianism,” a belief in the uniformity and similarity of past and present processes. This he distinguished from methodological uniformitarianism, a concept that retains the notion of a past that is knowable through empirical investigation without resort to supernatural intervention but allows both for greater variability of behavior and variations of scale and hence for the discovery of new phenomena that we could not otherwise have learned about from our knowledge of processes that we can directly observe in the present. Gould argued that both terms should be scrapped, the former because it is demonstrably incorrect and the latter because it is simply a statement of scientific method by another name.

Ironically, archaeologists, who deal with the most variable type of data, the activities of humans, have been slowest to abandon the substantive position. Some have made a virtue of it, notably Trigger (1970), who claimed that archaeology is a historical discipline concerned with particular phenomena in the past, an idiographic discipline in his terms, and that general theory is the province of social scientists dealing with present-day phenomena. The 1983 article forcefully rejected that claim on the grounds that it presupposes where the boundary lies between present and past, closes off a priori any exploration of longer-term processes without investigating whether or not they may exist, and denies to archaeology the status of a fully autonomous discipline capable of generating new theoretical knowledge. To deny archaeology that opportunity seems to condemn it to the status of a second-rate discipline that attempts to study with imperfect data the past tense of phenomena that are better studied in the present and to the production of knowledge that at best does no more than add to the stock of particular instances of general phenomena that are already known about (see also Arnold, this volume). Most disciplines in the natural and human sciences have descriptive, historical, and theoretical elements and grapple in their own way with the relationship between ideas and observations and between the particular and the general. Why should archaeology be any different?

HISTORICAL CONTEXT

Cambridge in the late 1960s and early 1970s presented an extraordinarily stimulating and sometimes bewildering collection of different but strongly held views about archaeology, contrasting personalities, and a rapidly shifting landscape of intellectual leaders, cliques, affiliations, and fashions, all of this enlivened by frequent visitors from outside. Those of us who were undergraduates in the now defunct first-year course in archaeology and anthropology also learned something about social anthropology from Meyer Fortes, Jack Goody, and Edmund Leach, enough to appreciate that relationships between the two disciplines and their proponents are far from straightforward. The archaeologies on offer included the traditional and essentially “cultural-historical” and descriptive (but highly contrasting) approaches of the senior generation—Grahame Clark, John Coles, Glyn Daniel, and Charles McBurney; the varied and sometimes mutually contradictory expressions of “new” archaeology espoused in the paleoeconomy of Eric Higgs and the analytical archaeology of David Clarke; and the early development of postprocessual archaeology by Ian Hodder. It is impossible to do justice to the varied viewpoints and intellectual crosscurrents of this period or offer more than a very brief insight here into the genesis of my own views. Others, myself included, who were involved in the events of that period have written elsewhere about some of the key figures as well as their own involvement, which provide alternative viewpoints (see in particular Bailey 1999; Clark 1989; Fletcher 1999; Gamble 1999a; Gowlett 1999; Rowley-Conwy 1999).

My own pathway into time perspectivism stems from a variety of sources. I had already been out to Greece, before starting my university undergraduate career, on one of Higgs’s field expeditions in 1967 and continued as a student of Paleolithic archaeology with Charles McBurney and of paleoeconomy with Eric Higgs during the final period of Grahame Clark’s tenure as Disney Professor.² All three believed in the possibility of seeing in the long term a pattern and an order of reality not available on shorter time scales. More than 50 years ago, Clark, in his inaugural address as Disney Professor,

had prophetically and eloquently foreshadowed later thinking thus:

A word may usefully be said at this point about perspective. It is only natural that those who approach prehistory from the literary standpoint should tend to grade its various phases according to the degree in which they are illuminated by the light of historical records, be this never so feeble or so fitful. To such, the final moments of prehistory occupy the foreground and so take on an exaggerated scale, whereas the great formative stages of human history are diminished by perspective and fade into the distant horizon. Such an unhistorical way of viewing prehistory backwards, against the unfolding of evolutionary processes and the impact of events, is justified on the plea, which I believe to be specious, that it is a case of proceeding from the known to the unknown. [1954:9–10]³

Charles McBurney offered similar sentiments in his introduction to the monumental publication of his excavations at the cave site of Haua Fteah:

It is only just beginning to be realised that history itself, and a fortiori the study of living communities, are incapable of throwing light on... processes of long-term cultural accretion and decay.... These are accessible only to a discipline dealing with a different order of time-unit, and have been opened to archaeology mainly since the advent of viable methods of time-measurements... [w]hat is certain is that we are seeing for the first time important aspects of group behaviour in their proper perspective... with a new class of data which will ultimately require a new series of hypotheses. [1967:15]

For Eric Higgs, the archaeological record for all its inadequacies could “iron out the fluctuations of short periods and perceive the long-term trends which are lost in the short-term multitudinous variables of the terminal millennia” (1968:617).

In addition, both McBurney and Higgs, at that time the directors of active Paleolithic field programs, repeatedly emphasized the palimpsest

nature of the archaeological record. For the paleo-economic school that rapidly grew up around Higgs in the late 1960s and early 1970s, the belief that the archaeological record is necessarily a record of what had survived and therefore of what had worked “in the long run” became a mantra, but there was already some debate about what counted as “long” and how to deal with the short-run “failures.”

Another powerful stimulus for the young at that time was David Clarke, whose *Analytical Archaeology* published in 1968 marked the call to arms of the New Archaeology in Britain and who was beginning to attract his own group of students, mostly younger than the paleo-economists. Clarke had no proper lecturing position in the department until 1975, but as a tutorial fellow of his college, Peterhouse, appointed in 1966 under Grahame Clark's patronage, he gave undergraduate lectures and supervisions (critical discussions of student essays) to small groups of undergraduate students (the normal mode of education in the Cambridge system). In some respects, of course, Clarke's emphasis on artifact taxonomy and sociocultural processes and Higgs's emphasis on bones and seeds and ecological processes set them poles apart. But Clarke, like Higgs, was very emphatic that archaeology needed to develop its own concepts and theories to deal with the peculiarities of its own data, to avoid the meaningless accumulation of data, and to give up the pretence that the archaeological record could be interpreted in terms of a faded history of peoples and civilizations. As Clarke put it: “The data studied is so inherently unlike that of other disciplines that archaeology must erect its own systematic approach or perish as a separate study” (1968:20). Again, “although archaeological data was generated by people and societies the peculiar nature of the archaeological record has erased their precise identification. Consequently, archaeology is a discipline with its own peculiar data, its own frame of reference and its own conceptual entities and processes” (Clarke 1968:41).

Clarke had also recognized that there was a problem of differences of scale between different sorts of archaeological entities that were usually ignored. That received expression in his development

of a hierarchical framework for artifact taxonomies and also led to an explicit recognition of the far-reaching consequences of radiometric dating for archaeology, the scale dependence of different sorts of concepts and explanations, and the need to transform thinking to cope with larger spatio-temporal scales and novel behavior patterns not encompassed by social theories applied to modern societies (see Clarke 1973).

However, Clarke had scarcely begun to explore these ideas before the developing creative tension between his own thinking and that of his contemporaries was stopped in its tracks in June 1976 by his unexpectedly early death at the age of 38. Three months later, on the very eve of his retirement, Higgs died at the age of 67 after a long illness. Clarke and Higgs were both highly influential teachers and had tended to attract the largest number of research students. Their near-simultaneous departure represented a traumatic rupture in the intellectual life of the time, left more than a dozen research students and a much wider circle of students and colleagues bereft of their intellectual guidance and stimulation, and in my case removed the prospect as a recently appointed lecturer in the department of working with David Clarke as a colleague rather than as a student.

I had already been appointed in early summer 1976 as Higgs's successor to begin my lecturing career the following October. But it took another year before Ian Hodder, who had been an undergraduate at the Institute of Archaeology in London before coming to Cambridge as a research student to work with David Clarke in 1971, and then briefly a lecturer at Leeds University, arrived to fill the vacant post, a move that marked the beginning of his conversion from the positivist pattern seeker of spatial archaeology (Hodder and Orton 1976) to founder of the postprocessual movement.

A new group of research students rapidly formed around the new ideas and, as had been true of their paleoeconomic predecessors, formed the shock troops to advance the cause, adopting an evangelical style dismissive or disregarding of those outside the charmed circle of true believers. Paleoeconomy, which had openly treated the small scale of individual action and interaction as largely

an epiphenomenon, bound to be overridden in the longer run by considerations of economic viability, was dismissed as a functionalist paradigm. Indeed, the equally extreme insistence of the first generation of postprocessualists on the priority of the individual and the small scale, and the epiphenomenal nature of the long term, was perhaps an only too predictable reaction to the extremes of paleoeconomy. Colin Renfrew, still a distant voice in Southampton, was invited to give a seminar in Cambridge and was duly taken apart for the error of his processualist ways. Lewis Binford was given much the same treatment soon afterward in a celebrated confrontation in the South Lecture Room of the Cambridge faculty building. It was precisely the desire to sidestep this rather unproductive factionalism between such apparently irreconcilable opposites, and to come to terms with the tidal wave of new and mutually contradictory theories, both ecological and sociological, that was beginning to flood archaeological interpretation in the 1970s, that provided the added spur to thinking about time perspectivism.

Initial reactions came mainly from informal conversations in Cambridge with colleagues, visitors, and research students and varied enormously. Some people were interested and understood that time was a conceptual issue that had been largely taken for granted and needed exploring, even if they did not agree with my particular view of the issues. One or two understood what I was driving at and shared my conviction that differences of time scale are fundamental to the development of archaeological theory. Roland Fletcher was an early ally, because of our common intellectual roots as student contemporaries and as students of both Clarke and Higgs, and had already begun to develop his distinctive approach to the analysis of scale differences in the built environment (see Fletcher 1977, 1995). Tim Murray immediately saw the point on his first visit to Cambridge in 1981 and went on to develop the ideas during the 1990s (see Murray 1992, 1993, 1997, 1999a, 2001; Murray, ed. 1999). Many thought time perspectivism was incomprehensible or at best irrelevant and too abstract to have much bearing on the real business of exploring new theories, collecting new data, or developing new techniques.

Many more thought it was absolutely wrong, especially those interested in some form of social archaeology, which was then gaining momentum from a variety of sources, not least from the arrival in Cambridge of Colin Renfrew in 1981. For them, what I was articulating seemed no more than a rearguard defense of paleoeconomy, an advocacy of economic or environmental determinism by another name and a justification for the disregard of social organization, individual agency, or beliefs as powerful motivating forces in human life (or at any rate an unwarranted pessimism about the possibility of investigating such factors with archaeological data), relevant at best in the short run but not in the long-term archaeological record. An even worse error from the postprocessual point of view was my apparent failure to appreciate the inherent subjectivities of knowledge and perception, whether our own as archaeologists, often unrecognized as such, or those of the past people we study.

The 1981 and 1983 essays were duly interpreted as an attack on the postprocessualists and as an attempt to desocialize or dehumanize the past (see, e.g., Moore 1981; Shanks and Tilley 1987; Tilley 1981a). Whether the former charge is correct is open to interpretation, and the latter charge is demonstrably wrong. That reaction is understandable given my interests in paleoeconomy and the language in which the early ideas were expressed, but it is absolutely wrong, being based on a misunderstanding of some of my published statements (see Bailey 2007:200). The 1983 article has given particular difficulties as noted earlier (Knapp [1992:12] refers to all three essays as “somewhat recondite”). The fact that I work with subsistence data and the physical landscape setting of archaeological sites, rather than material culture as conventionally defined, is irrelevant. These are as much imbued with information about human action and initiative, sociality, and meaning, and as challenging to investigate from the point of view of their human significance, as any other sort of material data.

My own position is and has always been that time perspectivism is not “antisocial” or “asocial” at all. Rather, my objection is that many of the social explanations preferred by archaeologists have all too often involved an inappropriate translation

from the very different contexts, scales, and types of observation employed by social anthropologists and sociologists to an archaeological context where the theories are immune to empirical challenge. Often this has seemed to involve little more than the use of empty rhetoric, a search for legitimation from outside the discipline of archaeology, or an exercise in intellectual one-upmanship and sometimes, so it seemed, a never-ending competition to see who could find the most arcane source of higher authority, as yet unread by any other archaeologist, from within the Franco-Prussian axis of European social philosophy (cf. Gellner 1985). It also results in the delusion that archaeological data need to be translated into a different and more readable form before they can be interpreted, and for those outside the discipline it reinforces the status of archaeology as a second-class intellectual discipline that works with intrinsically poor quality data that can never sustain worthwhile or verifiable conclusions. Having worked in a university environment that included at various times such figures as Jack Goody, Edmund Leach, Ernest Gellner, Anthony Giddens, and Tim Ingold, names that are often quoted as ultimate authorities by archaeologists, and having frequently sat around committee tables with many of them arguing about the allocation of scarce resources, I am certain that the generality of social anthropologists and sociologists, though mildly flattered that the archaeological community wishes to use their theories and defer to their authority, are quite unimpressed with the results, not least because archaeologists usually lack access to participant-observations that would provide both a deeper understanding of social anthropologists’ theories and an independent evaluation of explanations derived from them.⁴

As for objections to postprocessualism, this is not the time or place for an evaluation or a weighing in the balance of the positives and negatives (but see Murray 1999a). Postprocessualism has in any case evolved and diversified to the extent that it is probably mistaken to regard it as representative of a homogeneous body of ideas or beliefs. My principal difficulties in this context are with the persistent unwillingness of many postprocessualists to engage with the problem of scale differences except

over a very narrow spectrum; the tendency to collapse all interpretation to the level of subjective, individual experience; and the frequent adoption of a somewhat Orwellian rhetoric that while all opinions are equal, some, so it seems, are always going to be more equal than others. It is symptomatic of the problem that Gavin Lucas (2005), in his stimulating and anthropologically well-informed treatment of the archaeology of time, largely ignores the problems posed by differences of time scale, mainly, it seems, on the grounds of their political incorrectness (Bailey 2006), and that the most popular aspect of time in archaeology over the past decade has been the attempt to reconstruct past people's subjective experience of time—the “past in the past” of Richard Bradley (2002), even though the empirical basis for such reconstructions is open to question (Bailey 2007:219).

My original motivations in developing the idea of time perspectivism were thus primarily to create an intellectual space in which diversity of opinion and interpretation could coexist without abandoning the aspiration to systematic empirical evaluation inherited from processual trends in archaeology and to show how quite different and apparently irreconcilable ideas about human existence arise in large part from different time perspectives. A second motivation was to work at the development of archaeology as an independent discipline grounded in the distinctive properties of its own data and creating its own ideas and theories, rather than one that constantly looks over its shoulder for theoretical inspiration and approval from other disciplines, seeking legitimation through deference to authority or intellectual fashion.

Nevertheless, it is true that the development of the postprocessual program has been a continuing point of provocation and point of reference for the development of my own thinking, as well as a source of resistance to time perspective ideas. It could hardly have been otherwise, given that Ian Hodder and I were colleagues in the same department for 19 years and that I along with other staff members had as one of our various duties the task of reading the progress reports on all of Ian's research students, beginning with Henrietta Moore and Chris Tilley.

DIFFICULTIES AND CONSEQUENCES

Why has it taken so long for time perspective ideas to develop, other than from disciplinary inertia and the slowly turning spiral of intellectual fashion? I suggest that three problems are paramount: the problem of the individual, the problem of narrative, and the problem of empirical implementation.

The Problem of the Individual

The first and perhaps most formidable obstacle to an understanding of time perspectivism is a belief in the importance of the individual. A necessary consequence of time perspective ideas and the palimpsest nature of the archaeological record is that individuals and even recognizable social groupings very quickly disappear from view, and we are left with what Benjamin has described as “shadowy organizational themes or clusters of ideas” (1985:223). In fact, we may not even have any coherent large-scale entities at all but, rather, the accumulated fragments of many different such entities that we are tempted to stitch together to form a pseudo-entity that never existed (Holdaway et al., this volume). We may suspect that individuals and individual societies are hidden away in the palimpsests of the long-term record, and indeed are responsible for some of its patterning, even if we cannot see the evidence of the individuals or even the individual societies, any more than we can lay bare the specific genes that contribute to the paleontological record of biological evolution. Yet, however hard we try to leave our individual selves out of the equation, a story without individuals somehow seems incomplete, abnormal, and dehumanized.

Various strategies have been employed to try and put the individual back into the archaeological picture. One strategy of course is to ignore the problem and to continue to explain patterning in the archaeological record in the traditional way, in terms of individuals, societies, and historical movements, as those terms might be used by sociologists or historians. But this is scarcely sustainable when the mismatch between such concepts and the scale and resolution of the archaeological record, and the time-averaged nature of so much archaeological material, has become so obvious.

Another strategy is to focus on the occasional windows into deep time (Hodder 1999) or evidence of real-time experiences (Lucas 2005) that provide a flash of insight into small-scale phenomena: the Austrian Ice Man caught and buried in a snowstorm complete with his clothing and toolkit, the Boxgrove knapping floor and horse butchery site, and other so-called moments in time. The difficulty here is that these examples, even if they are genuine “moments in time,” are absolutely rare and tell us little about how we are to deal with the vast bulk of the remaining record of archaeology.

A third strategy is to incorporate some generic concept of individual agency, but the difficulties of such a concept let alone their implementation have been well rehearsed (Hodder 1999:136–137; Johnson 1989). Yet another strategy is to focus on the biography of individual artifacts (Gosden and Marshall 1999; Lucas 2005). The biographical analogy is itself telling, and although such studies may illuminate in interesting ways the structure of the archaeological record, they sidestep the more challenging problem of how different artifacts are to be related to each other (Bailey 2007:218). Another possibility is to people archaeological texts with imaginary observers, who provide an individual commentary on what it might have been like to stand in front of the bison frieze at Lascaux or huddle round the campfire on the Siberian steppe waiting for the mammoth (Mithen 2000). Some of these strategies are more convincing than others, and one sometimes feels that it would be better to let the imagination have full play and write convincing fiction!

Let me be absolutely clear about this. I am not opposed in principle to looking for individuality or viewing the world through the lens of an individual's eye or to any of the strategies outlined above, many of which have the potential to offer new insight and understanding and, if nothing else, a source of entertainment and communication for a wider audience. My point is that this is only one source of inspiration, one point of view, and one that should not become an obsession in disregard of others and especially not a tool with which to dismiss other points of view.

Many, of course, see in the appeal to larger-scale

processes the threat of determinism and an unpalatable notion of individuals so overwhelmed by larger-scale phenomena over which they have no control that their role as conscious agents seems quite irrelevant. It is not clear who or what is threatened by such a notion, and such fears in my view are in any case quite groundless. The archaeology of the large scale provides an opportunity for us to enlarge our understanding of our humanity rather than a compulsion to reduce it, a “megascop” with which to view ourselves from a different point of view. There may well be some very interesting questions to be asked about how individual actions and small-scale social interactions generate pattern at a larger scale (cf. Hopkinson and White 2005), as well as some equally interesting and important questions to be asked about how those larger-scale patterns and processes then react back on behavior and human thought and action at the smaller scale. There is every reason to suppose that larger-scale processes—conceptual, social, political, biological, environmental, and climatic as the case may be—were at work beneath the surface of everyday events in the world of our distant predecessors, just as they are today, some of them working over very long time scales well beyond human lifetimes or living memory and probably well beyond the conscious recognition of the individuals who lived through them. Archaeology provides access to a wider range of scales than any other discipline concerned with human affairs, and especially those at the larger-scale end of the spectrum, and insight into how and to what extent those processes intermesh with each other and with individual lives. Rather than ignoring the larger scale on the grounds that to do otherwise is to succumb to determinism, we might do better to embrace the archaeology of the large scale in order to learn in what ways such processes are continuing to affect the world we live in, lest we suffer the very fate that opponents of determinism most fear, that we will indeed be determined by forces that we neglected to investigate and which are therefore beyond our control.

Much of what has happened in the development of archaeological thinking over the past three decades can, I think, be seen as an attempt to deal with the two-sided problem of studying the past

revealed by time perspectivism in its strict sense, the problem of distorted perspective, on the one side, and the interest in exploring relationships at a larger scale, on the other. The first problem has been tackled by trying to work out how the world appeared from the individual perspective of someone living in, say, the Bronze Age or the Upper Paleolithic period and showing that their world was characterized by the same sort of cognitive and social complexity as our own is, through a process of “normalization” (Bailey 2007:218, see also Murray 1993, 2001, this volume). That has been the dominant focus of attention and source of inspiration for many of the most prominent trends in theoretical archaeology in the past 30 years and, indeed, a prominent theme in archaeological reconstruction long before that.

My own interest in time perspectivism has always been much more in the second aspect. My view remains not only that this latter approach is better suited to the archaeological palimpsests from the remoter past but that this larger-scale perspective may actually tell us something new about ourselves that we cannot otherwise gain from any other source of knowledge. Conversely, the attempt to reconstruct small-scale phenomena and the world as interpreted and acted on by the prehistoric individual, for all that it may help to correct the tendency to simplify the past because of a distorted time perspective, must ultimately fail in many cases, except perhaps as an exercise in literary imagination, not because prehistoric people did not think and act in the complex ways that we would like to believe but because in all too many cases we simply do not have access to the variety and resolution of data that would enable us to investigate such a fine level of detail (Murray 1997).

It would be rather surprising if prehistoric people did not experience the same sorts of small-scale phenomena that we are familiar with when we take a close-up view of ourselves and our contemporaries. It would be equally surprising if they did not have lives enriched and no doubt at times oppressed by sources of social convention, myth, and symbolism. But that does not require us to attempt to try and reconstruct everything in the remoter past that might conceivably have taken place. The

attempt to reconstruct past worlds as they might have been perceived and experienced by past individuals should not be dismissed where the material record offers opportunities for developing such an approach. But to assert that this is the only worthwhile mode of interpretation, and that any attempt to explore other layers of meaning at a larger scale dehumanizes the past, is at best narrow-minded. It is rather as if one were to complain that to study the vegetational history of, say, the Pliocene period without first demonstrating that Pliocene plants obtained their primary source of energy from photosynthesis is to “de-botanize” the study of ancient plant life or that to ignore processes of fluvial sedimentation and erosion when studying the geological history of the Scottish highlands is a threat to the autonomy and sense of identity of sedimentary particles.

The Problem of Narrative

The problem of narrative follows from the problem of the individual. Indeed, Lucas (2005) refers to real time, the individual experience of lived time, also as narrative time. As a historical discipline, we usually expect the primary output of archaeological research to be some sort of history, a story with a narrative structure. It may be the history of a particular place, a particular time, or a particular people, or it may be a history of the world. It may be the history of a particular artifact, a history of ideas, or a history of archaeologists. The structure may be couched in terms of a linear story with a beginning, a middle, and an end; it may be multilineal or even nonlinear; and it is often cumulative, involving some measure of progress or at any rate of development and increasing complexity over time. Or it may be a narrative of cyclical change or even of underlying continuity. It is frequently a story of ultimate origins, of humanity, of language, of agriculture, or of civilization. It may be one or many of these things, but in every case we expect a story line that says something about trajectory, preferably a trajectory that explains how we have come to be as we are as individuals in the world we presently inhabit.

With time perspectivism, however, we have a problem. The first is the problem of scale. If

different processes and phenomena become apparent at different scales of observation, there can be no single unified history of the world or even of some restricted place or period, only a multiscalar history written from many different points of view. How are we to narrate such a multiscalar history? The answer to that question is further complicated by the palimpsest problem. Consider the long-standing conventions of world prehistory.

If we examine the general textbook approach to “World Prehistory,” the themes and the general structure of the narrative have scarcely changed from the first edition of Grahame Clark’s *World Prehistory* published in 1961 to the eighth edition of Brian Fagan’s *People of the Earth* (2001) published 40 years later. The key developments remain the origins of humans, the origins of modern humans and the symbolic explosion that accompanied their development and geographical expansion, the origins and spread of agriculture, and the origins of urban civilizations, to which we might add the origins of empires and the origins of the modern world system (if we are prepared to regard later “historical” periods as falling within the purview of a prehistoric perspective, as many think we should if we are not to erect an entirely artificial barrier between prehistory and history). To be sure, the volume of data and the number and geographical range of examples have increased, and some of the dates have been pushed back in time. The narrative has also become a more richly branching multilinear narrative and occasionally a nonlinear one, rather than a simple linear progression, and one that has become subdivided and indeed fragmented into many regional prehistories, as more geographical regions have been brought into the picture and themes like art, language, religion, and economy have become more fully substantiated. There are also more varieties of explanation on offer for how these great transformations were brought about. But the basic structure and the main themes and highlights have changed remarkably little, as has the basic conception of what is there to be explained. What we have is a predominantly linear narrative, marked by episodic bursts of development. It is also a narrative that conveys a large measure of progression with time from simpler to more complex modes of orga-

nization and from slower to more rapid sequences of change, punctuated by “revolutions” that mark the ladder of human progress. Little has changed since Dunnell (1982) remarked on this phenomenon over 20 years ago.

In contrast, one of the most striking features of archaeological thinking and practice over the past 40 years, at least in the estimation of archaeologists themselves, is the huge changes and upheavals that have occurred in archaeological theory and archaeological method. Think of the great “paradigm shifts” associated with the New Archaeology, environmental archaeology, anthropological archaeology, ecological archaeology, processual archaeology, postprocessual archaeology, cognitive archaeology—I could go on. Or consider the huge range of new methods introduced by scientific developments, new methods of radiometric and cosmogenic dating, chemical and physical methods of characterizing materials, statistical and computing techniques, spatial analyses, biomolecular techniques—again the list could go on. Trunk loads of books have been produced on these themes and continue to be produced—witness the bookstalls at any large international conference. Add to that the vastly increased quantity of data that has been produced as a result of ongoing fieldwork and especially as a result of rescue excavations in many parts of the world.

The fact that what has been supposed to be the primary output of our discipline, the writing of large-scale history in a continental and global perspective, has changed so little in its basic structure amid an ongoing tumult of changing theoretical orientations and a torrent of new technical developments is a singular paradox. It is almost as if for much of the past few decades archaeologists have been living in two parallel universes, between which there has been very little communication and between which there appears to be a growing disjunction that must surely require some resolution before too long.

A time perspective examination of this paradox raises two questions about the conventional structure of world prehistory. The first is the degree of correspondence or otherwise between the narrative as interpreted and the material record. It is axio-

matic that the material record of prehistory on the global scale, as at every other scale of investigation, is a palimpsest, a huge palimpsest that encompasses the whole surface of the earth. Moreover, there are good reasons to suppose that large segments of this palimpsest are true palimpsests (Bailey 2007:203), in which the previous record has been wiped out and replaced by more recent material, or at any rate cumulative palimpsests (Bailey 2007:204) in which there has been substantial age-related loss of material. Thus the apparent growth of detail and complexity as the record of human history unfolds over time might have much to do with the selective loss of information and loss of resolution as we attempt to move back through the successive layers of this global palimpsest.

Moreover, it is clear that as with smaller-scale palimpsests, what are being sought after and highlighted in the narrative of world prehistory are the highest-resolution data sets, the hot spots of the record that provide the best detail of pattern and resolution of dating. This raises the suspicion that emphasis on the high-resolution episodes is often achieved only at the cost of disregarding the great bulk of the other available data. Clearly these are matters that require investigation, but analysis of very large-scale palimpsests is just as likely to subvert conventional wisdom as analysis of smaller-scale ones.

A second question has to do with the impact of time perspectivism in the strict sense of the term. The emphasis on “origins” research and the reality of “revolutions” are seriously called into question if we take account of the distortion of perspective that comes with tracing phenomena back in time until they disappear from view over a temporal horizon that lies beyond the interests of the observers or their preferred techniques of observation. That distortion of time perspective, like its equivalent in the spatial dimension, is bound to make events that are closer in time appear more detailed and more complex than those that are further away. This poses the challenge that the changes that we see as we move forward in time through the narrative of world prehistory may be no more than the result of successive increases in the scale and resolution of our powers of observation, rather than inherent changes in the

phenomena themselves. So-called revolutions tend on closer examination to reveal multiple strands of ongoing change as well as continuities that cross the supposed borderline. The notion of an agricultural revolution was deconstructed in that way over 30 years ago, and it is perhaps no surprise that the removal of that episode as a revolution has simply displaced the search, for those who want to mark the trajectory of human progress, to other parts of the record, such as the symbolic revolution of anatomically modern humans or the secondary products revolution of the European Bronze Age (Gamble 2007).

Just what a fully worked-out time perspective account of world prehistory might look like, or whether such an enterprise is possible, remains unclear. One can certainly take a global perspective, but that may be something quite different. For Grahame Clark the advent of radiocarbon dating was the key that made world prehistory possible by enabling events in disparate geographical regions to be brought into some chronological relationship. Now that we have a vastly increased number of radiocarbon dates from all over the world, added to by many new dating methods of varying range and precision, it may be that in a paradoxical sort of way, independently derived dating has now become an obstacle to further developments in understanding. By continuing to focus on issues of sequence and correlation and to emphasize the possibility of ever more refined chronologies that are necessarily always one step beyond our current technical abilities, absolute dating has rather diverted attention away from the analysis of things in themselves and especially away from the differential temporalities that are inherent in different sorts of palimpsests. Improved chronologies are constantly being sought as the indispensable prerequisite to do something else. But what is that “something else,” and what degree of chronological resolution is required to study it? One suspects that what is being sought is the holy grail of a universal high-resolution chronology that will enable us to write about the history of the Lower Paleolithic period in the same detail as the history of the medieval period or the twentieth century, something that a time perspective view of the world suggests is

a physical impossibility in the universe in which we happen to live.

I suspect that large-scale syntheses of prehistory will increasingly move away from the attempt to achieve a sort of large-scale history of everything, made possible and comprehensible only by being compressed and distorted into a linear narrative. What I suspect we will see in their place are histories that are more thematic in their approach and a conception of time in history not so much as a linear pathway but as something more akin to a sphere that surrounds us on all sides and into which we can reach in any direction, over any distance and at any scale, according to the themes that we wish to explore.

The Problem of Implementation

In some ways this is the most difficult problem of all, for even if we can see beyond all the obstacles and distractions outlined above, there remains the question of how we are to put a time perspective approach into practice. How are we to set about unraveling the structure of the archaeological record, the varying resolutions of different palimpsests, and their congruence or otherwise with different sorts of processes and different sorts of substantive questions about human life and human history? What are the longer-term processes that are supposed to come into focus at larger time scales, and what is the relationship between different scales of observation and the balance of advantage between “microscopic” and “macroscopic” (Bailey 2007:210) approaches to the material record? These are not questions that will admit of a quick answer, and the long interval between Bailey 1981 and Bailey 2007 is symptomatic.

Much of that time interval was for me taken up with a large-scale field project, the Klithi Project, a major undertaking that lasted without loss of momentum for 18 years from the very first visit to the Ioannina Museum in 1979 to the final publication in 1997 (Bailey, ed. 1997). That experience, however, provided a test bed for experimenting with the investigation of palimpsests, and from it emerged examples of time perspectivism and an understanding of longer-term processes that I have drawn on in more recent discussions (see Bailey 2007). There

remain many ambiguities in the interpretation of the Klithi data, as de Lange (this volume) observes, ambiguities in the relationship between the structure of the data and the particular interpretations preferred by different contributors to that project, particularly in the interpretation of the on-site data of stone artifacts and animal bones. This, perhaps, is no surprise given the number of participants in that project and their heterogeneous prior expectations and approaches to interpretation. Many of the examples of time perspectivism emerged most obviously at the larger scale of the Klithi site in its wider landscape setting rather than at the intrasite scale of analysis (Bailey et al. 1997; Bailey 2007; Galanidou 1997a, 1997b).

Tim Murray’s influence in Australia also strongly influenced field projects carried out in the 1980s and 1990s by his colleagues in the La Trobe department. Nicola Stern’s (1993, 1994a, this volume) work at Koobi Fora combined time perspective thinking with the strong tradition of paleontologically inspired taphonomic analysis developed in the investigation of early sites of the African Rift Valley and highlighted the time-averaged nature of archaeological deposits and the impossibility of applying an ethnographic scale of reconstruction to their interpretation. Jim Allen and Richard Cosgrove grappled with similar issues of how to reconcile fragments of individual action captured in archaeological palimpsests with large-scale low-resolution data in the Southern Forests Archaeological Project of southwest Tasmania (Cosgrove 1995; Cosgrove and Allen 1996). Here they devised strategies to deal with late Pleistocene cave sequences with an immense abundance of data but very low temporal resolution, concluding that the only satisfactory approach to investigation was to search for variability in the totality of the available archaeological data against an independently derived framework of environmental and climatic change, shorn of all ethnographic preconceptions. This work is of particular interest on a continent where a rich hunter-gatherer ethnographic record has often been extolled as a virtue for archaeological interpretation. The Southern Forests project highlighted the incongruity of an ethnographic approach to interpretation, not only because of the

almost total lack of overlap in scale and quality of the archaeological and ethnographic records but also because the late Pleistocene occupation of southern Tasmania took place in a glaciated landscape with no modern environmental analogue, let alone a behavioral one.

In fact, a great deal of other research has been going on in the past 30 years that can be seen to have been moving toward a more critical exploration of the structure of the archaeological record. This includes Schiffer's (1976, 1987) focus on formation processes, the large literature on taphonomy (Lyman 1994), and Binford's (1983b) articulation of middle-range theory and the importance of actualistic studies (studies of the relationship between behavior and materials in the present). Some of this research was perhaps motivated by a desire to clean up the record and remove sources of potential bias, so that one could then proceed to interpretation of the humans that lie behind the materials according to existing interpretive conventions. Much of it was often viewed, and indeed can be criticized, as an exercise in "spoiler" arguments, the demonstration of what we cannot do with archaeological data rather than of what we can do and thus as the development of methodological tools in isolation from theories and interpretations, methodologies in search of a substantive problem worthy of attention. The same charge has been laid against the analysis of palimpsests and the focus on the time-averaged nature of many archaeological deposits (cf. Stern 1993 and comments, 1994a, this volume).

Others who have traveled the same road seem to have faced similar difficulties. Clarke (1973), who saw the problem very clearly, did not of course live to pursue it. Binford (1981a) and Foley (1981a), publishing in the same year as my first time perspective essay, likewise seem to have had variable success subsequently in realizing their original vision of investigating a different order of reality potentially revealed by archaeological palimpsests. The fact that they, like me, saw the most useful theoretical tools for investigating what was revealed by long-term palimpsests as lying in various sorts of ecological, adaptational, or economic thinking has been a huge barrier for that great swathe of archaeological opinion that wants to do social or

symbolic archaeology and suspects anything else of being a sort of crude materialism or environmental determinism.

Foley has moved far away from the investigation of archaeological palimpsests and into the study of human evolution, a really large-scale, long-term phenomenon, where there is also a reasonable degree of congruence between evolutionary theory and the analysis and interpretation of paleobiological data (e.g., Foley 1995). Binford, in concentrating on the methodology of palimpsests and the development of middle-range theory, seems to have moved away from conceptions of long-term processes to concentrate on an ethnographic scale of interpretation, albeit one that emphasizes the system rather than the individual (see Binford 1983b). His emphasis on using actualistic studies to develop techniques for converting the statics of the archaeological record into the dynamics of behavior also seems at times to be reverting to the view that the palimpsest material record is a sort of second-rate data set in need of some keys that can convert it into something else that is more easily interpretable. This seems paradoxical given the assertion of his 1981 article quoted earlier. Yet his more recent work suggests that his view of ethnography is quite distinctive, a "frame of reference" for investigating past phenomena, that is, a body of secure knowledge (source-side knowledge in Binford's terms) that can be used as a tool of investigation to provide new knowledge about a less well-known set of phenomena (subject-side phenomena [see Binford 2001a]). This is an approach that S. J. Gould would have recognized as a perfectly respectable application of methodological uniformitarianism, a means of acquiring new and empirically well-grounded knowledge. My only question is how far source-side knowledge derived from short-time span ethnographic data, albeit viewed on a global scale, can be applied to long-time span phenomena in the more distant archaeological past. If archaeological data are robust enough to provide an independent test of predictions derived from analysis of ethnographic data, they should be robust enough to provide a source side of knowledge in their own right or subject-side data that can be illuminated by other frames of reference that are more congruent

in scale and resolution with the archaeological record under investigation.

One very powerful frame of reference in Binford's sense is the geological and geomorphological history of the earth's surface, which provides the physical landscape setting within which people have made their living and within which archaeological data are embedded. Another frame of reference is the behavior of the plants and animals that have occupied those landscapes.

It is significant that the field investigations informed by a time perspective approach and referred to earlier, the Klithi Project in Greece, the Southern Forests Archaeological Project in Tasmania, and the work of Stern in Africa and of Holdaway in Australia, have made extensive use of both of these frames of reference. As Cosgrove and Allen (1996) put it, a paleoecological framework is intended to provide an independently derived record that can be used as a methodological tool for investigating variability in the archaeological data and generating testable hypotheses, rather than an interpretive tool that imposes deterministic explanations.

It is no surprise that archaeologists have often sought common ground with earth scientists in addressing issues of time, that the understanding of time scale embraced by earth scientists has been a significant source of inspiration for my own ideas, or that an understanding of geomorphological context is central to the work of others in this volume. On all but the very shortest time scales, the physical landscape is immensely unstable, whether from climatically driven processes of erosion, sedimentation, and sea level change or from geophysical processes that generate earthquakes, volcanic eruptions, and earth movements. If we pose the question of how such physical instabilities have affected the course of human history, we might assume that they have been essentially disruptive and destructive, a more or less frequent interruption of cultural processes of human development, and possibly even a determinant of them. Closer examination shows that prehistoric people, so far from being determined by such geological instabilities, turned them, and the characteristic landscapes of topographic complexity that result from such instability, to their advantage (Bailey et al. 1993; King

et al. 1997; Sturdy et al. 1997) and that this positive engagement with geological instability may have played a powerful role in our early evolution (Bailey et al. 1994; Bailey et al. 2000; King and Bailey 2006). In our research on the landscapes of Epirus, where we were able to talk to the people who live in such landscapes in the modern setting, they literally did not see the eroded surfaces, landslides, and other hazards that so impress visiting geologists and archaeologists or did not see them as relevant (Green 1997, 2005). They had long ago developed highly flexible economic and social structures that turned the features of a geologically unstable environment to positive effect while minimizing the hazards, in what might almost be called a process of coevolution between human activities and geological change (Bailey 1997c, 2007).

The reality is that time perspective thinking is not easy. It offers no quick fix, no simple code for transforming the incomprehensible into the familiar, no ready-made map for reinterpreting the past, no fully developed set of new principles. It cannot even in its present state of development be described as a new theory in the sense of a fully worked out and coherent system of ideas and principles that account for the way in which the world has come to be the way it is. Nor does it deal with "people," "culture," or "behavior" in the sense in which any of those concepts might be used in everyday usage or in the anthropology or sociology of contemporary and historically recent societies. Taken to its logical conclusion, time perspectivism requires us to abandon most of the conventional foundations of existing archaeological thinking, indeed of conventional thinking more generally about the human condition. Those who embrace time perspectivism will find themselves in an alien intellectual landscape where most of the familiar landmarks and signposts are missing. Such a landscape is full of liberating possibilities for new exploration and the discovery of new knowledge, but it requires us to work out the "maps" for ourselves. Nobody else can help us. Some may find the effort of abandoning so much inherited intellectual baggage too much. Others may find the prospect of moving into unknown territory too disturbing and turn the signposts around so that they point back

to the familiar world that we already know. Those who cannot accept this starting point for inquiry will find time perspectivism quite incomprehensible or quite irrelevant, and it is clear that during the past two decades many have.

CONCLUSION

In standing back from the development of time perspective ideas over the past 30 years, two factors stand out above all others as the key to understanding the slow development of ideas, the requirement to abandon familiar territory, and the need to work out a new way of thinking from the beginning. Those of us who first peered across the frontier into this new and alien landscape initially drew back again, because we simply were not sure how to proceed.

Progress in developing the ideas has been slow and is likely to remain so, with many halts, diversions, wrong turnings, and false trails. If this sounds daunting, we should remember one of the most important lessons of archaeological survey, the “sampling paradox” of the field archaeologist working in new territory, that usually we do not find anything until we know what we are looking for, and we do not know what we are looking for or even where to start looking until we find something. Our methods of inquiry and our understanding of what we are trying to investigate need to proceed together and interact with each other, and this process is likely to require many trials and errors and an engagement with archaeological material that, given the complexity, cost, and scale of modern fieldwork, must of necessity be a long-term one. Anyone hoping for a quick solution to archaeology’s problems will find no encouragement here. Above all it will require us to abandon a dependent relationship on sociological or ethnographic disciplines, even at the risk of overreacting against these popular sources of knowledge lest they entice us back into the old ways (cf. Sullivan, this volume), but not to ignore them so much as ultimately to better engage with them in a two-way process of communication. The other chapters in this volume show that many are now prepared to travel this route and to explore in new ways the structure of their archaeological records and how they should be interpreted, even if

the ultimate outcomes are yet to emerge with any clear definition.

Methodologically there is a need to expand the analysis of palimpsests into every domain of material phenomena and at every scale, ranging inward, microscopically, and outward, macroscopically, to establish where the limits of resolution and comparison are in different circumstances and to clarify just what is there in terms of the varying structural, spatial, and temporal properties of different sorts of records. This is a task that can and should be applied to every type of material record ranging from art and ceramics, as among the most malleable and obvious products of human imagination at one extreme, to mollusk shells and sediments, as among the most environmentally constrained at the other, and on every scale from the individual object at one extreme to the global palimpsest of world prehistory at the other.

Substantively there is a very clear need to explore and clarify what sorts of theories and questions work best with the structural properties of different sorts of material records at different scales of observation. This will not be an easy task, but it is one that needs to be conducted in concert with the analysis of palimpsests. The sources of inspiration for that task may come from many different directions, including induction from the structural properties of the records themselves and the problems they pose, deduction from models and theories drawn from elsewhere, combinations of different frames of reference, challenges to conventional assumptions and practices by the identification and exploration of alternatives, thoughtful and creative engagement with the empirical record, and above all the simple asking of questions free from the dictates of moral righteousness. A proper spirit of open scientific inquiry is one that should encourage the asking of different questions but should also be demanding in the standards of rigor and evidence that are applied in the search for answers—and above all should be open to the possibility of error.

ACKNOWLEDGMENTS

I am grateful to Simon Holdaway and LuAnn Wandsnider for their original invitation to talk in a session about time at the meeting of the Society

for American Archaeology in Milwaukee in 2003 and for their subsequent encouragement and comments and the comments of all those who took part in the original session and commented on earlier version of this chapter. I am also grateful to two anonymous assessors whose comments have helped me to clarify my own thinking on time and to Mark Edmonds for a critical reading of the text.

NOTES

1. At first I was not much enthused by the term *time perspectivism*, which sounds like a rather cumbersome piece of potentially unnecessary and intellectually pretentious jargon, and had considered using the term *time relativism* (see Bailey 1981:113n2). However, I wished to avoid the connotations of relativism, in particular the self-contradictory view then gaining ground within archaeology, and one that has remained popular ever since, that “all truth is relative” (including of course that statement), an extreme version of the so-called theory dependence of observations (perhaps better described as the theory dependence of questions), which has too often been misused as an excuse for intellectual laziness and armchair theorizing and for a misguided belief that scientific method can be dispensed with and that evidence does not matter. Perspectivism, so I thought, had no precedents, and I eventually decided for that reason alone that the term was appropriate to characterize the distinctiveness of intellectual discourse required in an archaeology that aspires to the status of an autonomous discipline with its own type of data and concepts. I also rather liked the concept of time perspective, if not the noun *perspectivism*, and the optical metaphors implied by perspective, which seem to me exactly appropriate to the ideas under discussion. In fact there is a precedent for the use of the term *perspectivism* in the philosophy of Ortega y Gasset and some of the writings of Nietzsche, where it refers to different systems of beliefs, the relative validity of which cannot be established by recourse to any independent criterion (Flew 1983). That, of course, is exactly the point of time perspectivism, that there is no one time perspective that is more valid than any other. There may be a hierarchy of time scales but not a hierarchy of significance or validity. Where

time perspectivism differs, I believe, from other relativist approaches is that it provides a means for understanding why different points of view differ, because of their basis in different time perspectives, rather than by recourse merely to differences of personal preference or social context.

2. Grahame Clark retired in 1974 but continued to publish and to be intellectually active for another 20 years. Glyn Daniel succeeded to the Disney Chair in that year, though both David Clarke and Colin Renfrew had been strongly tipped on that occasion. Colin Renfrew became Disney Professor following Glyn Daniel's retirement in 1981.
3. Grahame Clark's inaugural lecture contains a number of pointed attacks on his contemporaries, none of whom is mentioned by name but among which one can easily discern Gordon Childe, Glyn Daniel, Christopher Hawkes, and Stuart Piggott as particular targets. Hawkes in particular had advocated views almost exactly the reverse of those expressed here by Clark. It is clear that the tensions between generalization enforced on, or made possible in, earlier periods of prehistory by lack of data and the finer detail possible in text-aided archaeological studies of protohistoric and historic periods were a source of ongoing debate throughout much of twentieth-century British archaeological thinking (see Evans 1999).
4. Anthony Giddens was invited on an occasion in about 1980 to give a lecture to the Archaeology Department, shortly after the publication of his *Central Problems in Social Theory* (1979), in which he gave a characteristically lucid exposition of structuration theory, describing his theory as a logical theory and culminating with the statement that the Industrial Revolution represented for him the major discontinuity in human affairs. When it was pointed out to him that most of his audience were archaeologists working on periods long before the Industrial Revolution, which called into question the logic of translating principles that worked in a postindustrial world across such a discontinuity, he pleaded the usual excuse of a prior engagement and took his leave. It was not a problem that he had thought about or had any interest in. It was not his problem. It is, however, our problem as archaeologists, and it is up to us to find a solution. No one else can do it for us.

REFERENCES

- Bailey, G.N.
1981. Concepts, time-scales and explanations in economic prehistory. In A. Sheridan & G. Bailey (eds.) *Economic Archaeology*, pp. 97–117. Oxford: British Archaeological Reports International Series 96.
- Bailey, G.N.
1983. Concepts of time in Quaternary prehistory. *Annual Review of Anthropology* 12: 165–92.
- Bailey, G.N.
1987. Breaking the time barrier. *Archaeological Review from Cambridge* 6: 5–20.
- Bailey, G.N. (ed.)
1997a. *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. 2 vols. Cambridge: McDonald Institute for Archaeological Research.
- Bailey, G.N.
1997b. Klithi: a synthesis. In G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece: Volume 2: Klithi in its local and regional setting*, pp. 655–80. Cambridge: McDonald Institute for Archaeological Research.
- Bailey, G.N.
1999. Eric Higgs (1908–1976). In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 531–65. Santa Barbara: ABC-Clio.
- Bailey, G.N.
2006. Time's arrow: the measurement and theory of archaeological time. *Antiquity* 80 (309): 717–20.
- Bailey, G.N.
2007. Time perspectives, palimpsests, and the archaeology of time. *Journal of Anthropological Archaeology* 26: 198–223.
- Bailey, G.N., King, G.C.P., and Sturdy, D.A.
1993. Active tectonics and land-use strategies: a Palaeolithic example from northwest Greece *Antiquity* 67: 292–312.
- Bailey, G.N., King, G.C.P. & Sturdy, D.A.
1994. Active tectonics, complex topography and human survival strategies. *Journal of Geophysical Research* 99, B10: 20063–78.
- Bailey, G.N., King, G.C.P. and Manighetti, I.
2000. Tectonics, volcanism, landscape structure and human evolution in the African Rift. In G.N. Bailey, R. Charles & N. Winder (eds.) *Human Ecodynamics* pp. 31–46. Oxford: Oxbow.
- Bailey, G.N., Cadbury, T., Galanidou, N. and Kotjabopoulou, E.
1997. Open-air sites and rockshelters: survey strategies and regional site distributions. In: G.N. Bailey (ed.) *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece. Volume 2: Klithi in its Local and Regional Setting*. McDonald Institute for Archaeological Research, Cambridge, pp. 521–37.
- Barrett, J.
1994. *Fragments of Antiquity*. Oxford: Blackwell.
- Binford, L.R.
1981. Behavioral archaeology and the “Pompeii Premise”. *Journal of Anthropological Research* 37: 195–208.
- Binford, L.R.
1983. *In Pursuit of the Past*. London: Thames and Hudson.
- Binford, L.R.
2001. *Constructing Frames of Reference*. Berkeley and Los Angeles, California: University of California Press.
- Bintliff, J. (ed.)
1991. *The Annales School and Archaeology*. Leicester: Leicester University Press.
- Bradley, R.
1993. *Altering the Earth: the Origins of Monuments in Britain and Continental Europe*. Edinburgh: Society of Antiquaries of Scotland.
- Bradley, R.
2002. *The Past in Prehistoric Societies*. London & New York: Routledge.
- Clark, G.
1954. *The Study of Prehistory*. Cambridge: Cambridge University Press.
- Clark, G.
1961. *World Prehistory*. Cambridge: Cambridge University Press.
- Clark, G.
1989. *Prehistory at Cambridge and Beyond*. Cambridge: Cambridge University press.
- Clark, G.
1992. *Space, Time and Man*. Cambridge: Cambridge University Press.
- Clarke, D.L.
1968. *Analytical Archaeology*. London: Methuen.

- Clarke, D.L.
1973. Archaeology: the loss of innocence. *Antiquity* 47 (185): 6–18.
- Cosgrove, R.
1995. *The Illusion of Riches: Scale, Resolution and Explanation in Tasmanian Pleistocene Human Behaviour*. Oxford: British Archaeological Reports International Series 608.
- Cosgrove, R. and J. Allen
1996 Research strategies and theoretical perspectives. In *Report of the Southern Forests Archaeological Project Volume 1 Site Descriptions, Stratigraphies and Chronologies* J. Allen(ed) School of Archaeology, La Trobe University, Bundoora, pp. 21-30.
- Dunnell, R.C.
1982. Science, Social Science, and Common Sense: The Agonizing Dilemma of Modern Archaeology. *Journal of Anthropological Research* 38(1):1-25.
- Evans, C.
1999. Christopher Hawkes. In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 461–79. Santa Barbara: ABC-Clio.
- Fagan, B.
2001. *People of the Earth: an Introduction to World Prehistory*. New Jersey: Prentice Hall.
- Fletcher, R.J.
1977. Alternatives and differences. In M. Spriggs (ed.), *Archaeology and Anthropology: Areas of Mutual Interest*, pp. 49–68. Oxford: BAR Supplementary Series 19.
- Fletcher, R.J.
1995. *The Limits of Settlement Growth*. Cambridge: Cambridge University Press.
- Fletcher, R.
1999. David Clarke. In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 855–68. Santa Barbara: ABC-Clio.
- Flew, A.
1983. *A Dictionary of Philosophy* (2nd ed.) London: Macmillan.
- Foley, R.A.
1981. A model of regional archaeological structure. *Proceedings of the Prehistoric Society* 47: 1–17.
- Foley, R.A.
1995. *Humans before Humanity: an Evolutionary Perspective*. Oxford: Blackwells.
- Galanidou, N.
1997a. The spatial organization of Klithi. In G.N. Bailey (ed.) *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece. Volume 1: Klithi Excavations and Intra-site Analysis*, pp. 275–304. Cambridge: McDonald Institute for Archaeological Research.
- Galanidou, N.
1997b. Lithic refitting and site structure at Kastritsa. In G.N. Bailey (ed.) *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece. Volume 1: Klithi Excavations and Intra-site Analysis*, pp. 497–520. Cambridge: McDonald Institute for Archaeological Research.
- Gamble, C.S.
1999. Lewis Binford. In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 811–34. Santa Barbara: ABC-Clio.
- Gamble, C.S.
2007. *Origins and Revolutions*. Cambridge: Cambridge University Press.
- Gellner, E.
1985. Positivism against Hegelianism. In E. Gellner, *Relativism and the Social Sciences*, pp. 4–67. Cambridge: Cambridge University Press.
- Giddens, A.
1979. *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*. London: Macmillan.
- Gould, S.J.
1965. Is uniformitarianism necessary? *American Journal of Science* 263: 223–8.
- Gowlett, J.
1999. Charles McBurney. In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 713–26. Santa Barbara: ABC-Clio.
- Green, S.F.
1997. Interweaving landscapes: the relevance of ethnographic data on rural groups in Epirus for Palaeolithic research. In G.N. Bailey (ed.) *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece. Volume 2: Klithi in its Local and Regional Setting*, pp. 637–54. Cambridge: McDonald Institute for Archaeological Research.

- Green, S.F.
2005. *Notes from the Balkans: Locating Marginality and Ambiguity on the Greek-Albanian Border*. Princeton, NJ: Princeton University Press.
- Harding, J.
2005. Rethinking the Great Divide: long-term structural history and the temporality of event. *Norwegian Archaeological Review* 38 (2): 88–101.
- Higgs, E.S.
1968. Archaeology — where now? *Mankind* 6: 617–20.
- Hodder, I.
1999. *The Archaeological Process: An Introduction*. Oxford: Blackwell.
- Hopkinson, T. and White, M.J.
2005. The Acheulean and the handaxe: structure and agency in the Palaeolithic. In C. Gamble and M. Porr (eds.) *The Hominid Individual in Context* pp. 13–28. London: Taylor and Francis.
- James, W. & Mills, D. (eds.)
2005. *The Qualities of Time: Anthropological Approaches*. Oxford: Berg.
- Johnson, M.
1989. Conceptions of agency in archaeological interpretation. *Journal of Anthropological Archaeology* 8: 189–211.
- King, G.C.P., Sturdy, D. and Bailey, G.N.
1997. The tectonic background to the Epirus landscape. In G.N. Bailey (ed.) *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece. Volume 2: Klithi in its Local and Regional Setting* pp. 541–59. Cambridge: McDonald Institute for Archaeological Research.
- Knapp, A.B. (ed.)
1992a. *Archaeology, Annales, and Ethnohistory*. Cambridge: Cambridge University Press.
- Knapp, A.B.
1992b. Archaeology and Annales: time, space, and change. In A.B. Knapp (ed.) *Archaeology, Annales, and Ethnohistory* pp. 1–21. Cambridge: Cambridge University Press.
- Lyman, R.L.
1994. *Vertebrate Taphonomy*. Cambridge: Cambridge University Press.
- McBurney, C.B.M.
1967. *The Haua Fteah (Cyrenaica) and the Stone Age of the South-east Mediterranean*. London: Cambridge University Press.
- Mithen, S.
2000. *After the Ice*. London: Methuen.
- Moore, H.
1981. Bone refuse — possibilities for the future. In A. Sheridan & G. Bailey (eds.) *Economic Archaeology*, pp. 87–94. Oxford, British Archaeological Reports International Series 96.
- Murray, T.
1992. Tasmania and the constitution of 'the dawn of humanity'. *Antiquity* 66(252): 730–43.
- Murray, T.
1993. Archaeology and the threat of the past: Sir Henry Rider Haggard and the acquisition of time. *World Archaeology* 25(2): 175–86.
- Murray, T. (ed.)
1999a. *Time and Archaeology*. London and New York: Routledge.
- Murray, T.
1999b. A return to the 'Pompeii premise'. In T. Murray (ed.) *Time and Archaeology*, pp. 8–27. London and New York: Routledge.
- Murray, T.
1997. Dynamic Modelling and New Social Theory of the Mid- to Long-Term. In S.E. Van der Leeuw and J. McGlade (eds.), *Time, Process and Structured Transformation in Archaeology*, pp.449–63. London: Routledge.
- Murray, T.
2001. On 'Normalizing' the Palaeolithic: an orthodoxy questioned. In R. Corbey and W. Roebroeks (eds.) *Studying Human Origins: Disciplinary History and Epistemology*, pp. 29–44. Amsterdam: University of Amsterdam Press.
- Murray, T.
2002. Evaluating evolutionary archaeology. *World Archaeology* 34(1): 47–59.
- Olivier, L.
2000. Duration, Memory, and the Nature of the Archaeological Record. In H. Karlsson (ed.) *It's About Time: The Concept of Time in Archaeology*, pp. 61–70. Göteborg: Bricoleur Press.
- Renfrew, C.
1981. Space, time and man. *Transactions of the Institute of British Geographers NS* 6: 257–78.

- Rowley-Conwy, P.
1999. Sir Grahame Clark. In T. Murray (ed.) *Encyclopedia of Archaeology: the Great Archaeologists*, pp. 507–29. Santa Barbara: ABC-Clio.
- Schiffer, M.B.
1976. *Behavioral Archeology*. New York: Academic Press.
- Schiffer, M.B.
1987. *Formation Processes of the Archaeological Record*. Albuquerque NM: University of New Mexico Press.
- Shanks, M. & Tilley, C.
1987. *Social Theory and Archaeology*. Cambridge: Polity Press.
- Stern, N.
1993. The structure of the Lower Pleistocene archaeological record: a case study from the Koobi Fora formation. *Current Anthropology* 34: 201–25.
- Stern, N.
1994. The implication of time-averaging for reconstructing the land-use patterns of early tool-using hominids. *Journal of Human Evolution* 27: 89–105.
- Tilley, C.
1981. Economy and society: what relationship? In A. Sheridan & G. Bailey (eds.) *Economic Archaeology*, pp. 131–48. Oxford: British Archaeological Reports International Series 96.
- Trigger, B.D.
1970. Aims in prehistoric archaeology. *Antiquity* 44 (173): 26–37.

Time in Archaeology:

Time Perspectivism Revisited

Edited by

SIMON HOLDAWAY AND LUANN WANDSNIDER

THE UNIVERSITY OF UTAH PRESS
Salt Lake City

© 2008 by The University of Utah Press. All rights reserved.



The Defiance House Man colophon is a registered trademark of the University of Utah Press. It is based on a four-foot-tall, Ancient Puebloan pictograph (late PIII) near Glen Canyon, Utah.

12 11 10 09 08

1 2 3 4 5

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

Time in archaeology : time perspectivism revisited / edited by Simon Holdaway and LuAnn Wandsnider.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-87480-929-9 (cloth : alk. paper) 1. Archaeology—Methodology—Philosophy. 2. Time. 3. Time perspective. 4. Archaeology and history. I. Holdaway, Simon. II. Wandsnider, LuAnn.

CC75.7:T558 2008

930.101—dc22

2008005214

Printed and bound by Sheridan Books, Inc., Ann Arbor, Michigan

Interior printed on recycled paper with 50% post-consumer content.

Contents

- List of Figures ix
List of Tables xi
Preface and Acknowledgments xiii
1. Time in Archaeology: An Introduction 1
SIMON HOLDAWAY AND LUANN WANDSNIDER
 2. Time Perspectivism: Origins and Consequences 13
GEOFF BAILEY
 3. Time Perspectivism and the Interpretive Potential of Palimpsests: Theoretical and Methodological Considerations of Assemblage Formation History and Contemporaneity 31
ALAN P. SULLIVAN III
 4. Lower Paleolithic Industries, Time, and the Meaning of Assemblage Variation 46
MICHAEL J. SHOTT
 5. Time-Averaged Deposits and Multitemporal Processes in the Wyoming Basin, Intermontane North America: A Preliminary Consideration of Land Tenure in Terms of Occupation Frequency and Integration 61
LUANN WANDSNIDER
 6. Investigating Persistent Places in the Northern Great Plains, Central North Dakota 94
MATHEW A. DOOLEY
 7. Assemblage Accumulation as a Time-Dependent Process in the Arid Zone of Western New South Wales, Australia 110
SIMON HOLDAWAY, PATRICIA FANNING, AND ED RHODES
 8. Time Averaging and the Structure of Late Pleistocene Archaeological Deposits in Southwest Tasmania 134
NICOLA STERN

9. Time Perspectivism and the Structure of Archaeological Records: A Case Study	149
JOSARA DE LANGE	
10. No Time like the Present	161
PHILIP J. ARNOLD III	
11. Paradigms and Metaphysics, or “Is This the End of Archaeology as We Know It?”	170
TIM MURRAY	
References Cited	181
Index	203