‘Time perspectivism’: Time as a Methodological Tool in Archaeology

ARC4ICA

2015

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Synopsis

This paper examines the use of time as a methodological tool in archaeology, focussing on the feasibility of Geoff Bailey's time perspectivisim approach. The history of time theories will be explored, touching on the Pompeii Premise, Braudel and the Annales *School, and time-averaging. Alternative approaches to the use of timescales for identifying patterns of human action in the archaeological record will also be briefly discussed. The idea of the archaeological palimpsest and how time perspectivism relates to this concept will also be considered. Although time perspectivism shows promise, it will be argued that further work is required before it can be a viable solution to the problems archaeologists face regarding time and human behaviour.*

Time perspectivism is a coalescing archaeological approach which incorporates the dimension of time into the ontological study of past human behaviour (Wandsnider 2004, p. 54). The theory of time was originally a philosophical concern, as per the proposition of George Mead (1932, p. 1), whereby reality exists only in the present, and, although the future and the past are both implied, they do not currently exist. The past, which is of interest to archaeologists, is thus a reconstruction of historic actions imagined within the framework of the present moment (Mead 1932, p. 27). Time as a philosophy gained wide-spread interest after the advent of radiocarbon dating, when archaeologists of the 1950s, such as V Gordon Childe (1957, p. xiii) and Grahame Clark (1954, p. 9), started to look at archaeological timescales and humanity in a new light. Archaeological sub-disciplines use different timescales to infer behaviour from archaeological artefacts: historic archaeologists examine decades, classical archaeologists investigate centuries, whilst palaeoarchaeologists look at millennia or millions of years (Fletcher 1977, p. 36). As such, debate has proliferated within the field about this topic, and even today there is no firm consensus on the time perspectivist approach.

Archaeologists have been slow to apply the philosophy of time to their field (Altizer 2008, p. 62). In the late 1970s, geographer Brian Holly (1978, p. 14) noted that time was a multi-dimensional entity which could be viewed as a nested hierarchy of causation that encompassed political economy, environmental structure, behavioural activity, and socio-psychosocial patterns. A commonly accepted archaeology-specific hierarchy of logically independent levels of explanation is still lacking (Fletcher 1992, p. 40). Time is not only a hierarchy, but, as pointed out by sociologist Georges Gurvitch (1964, pp. 31-33, 61), it can also be enduring, cyclical, discontinuous, contiguous, real, perceived, unchanged, or even as frozen moments. It is also linear, like an arrow moving from the past into the present and future (Binford 1981, p. 196). Disagreements such as this lead to diverse opinions on how time should be applied to the archaeological record, resulting in disparate interpretations. As such, a well-defined methodology that incorporates the full range of archaeological timescales would be a useful tool for the discipline.

During the 1960s, the 'Pompeii Premise' was debated by archaeologists. The term was coined by Robert Ascher (1961, p. 324), who noted that what archaeologists disturb are not the preserved "remains of a once living community, stopped as it were, at a point in time", but a disturbance of the decomposition processes of the site. For example, living-floor assemblages are not representative of a frozen moment in history. Archaeological sites have all been affected by formational processes, including primary and secondary refuse types, post-abandonment use, and natural and cultural post-occupational disturbances (Schiffer 1985, pp. 24-30, 38). Despite methodological disagreements, Lewis Binford (1981, pp. 196, 205) and Michael Schiffer (1985, p. 38) both agreed with Ascher, recommending that archaeologists avoid the Pompeii Premise by reviewing their ideas about the archaeological record and its formation. Whilst challenging archaeologists' ideas about time, this does not address the issue of timescale.

An influential investigation of the philosophy of time occurred during the late 1960s by the French historians of the *Annales* School, founded in 1929 by Lucien Febvre and Marc Bloch (Lucas 2005, pp. 15-16). Fernand Braudel (1949 (2002), p. 122; 1969 (1982), pp. viii, 27) recommended viewing history as a long durational timespan, the *longue durée*, to examine long-term social structures and organisations. This sits in contrast with his *conjuncture*, medium-term structural events, and the short-term *l'histoire événementielle* of François Simiand (1932 (1987), pp. 11-12). Archaeologists have borrowed this model in an attempt to utilise timescales in their research. During the 1990s, Roland Fletcher (1992, pp. 36-39, 47) proposed that this *Annales* model could be used in archaeology, but it lacks a frame of reference especially in relation to the timespan faced by palaeoarchaeologists. He thus recommended that archaeologists create a "rigorous time perspective view" with a "methodological uniformitarian form" to accomplish this. The *Annales* framework could thus not be directly transferred from history to archaeology.

John Bintliff (1991, pp. 2, 18) noted that, while the *Annales*' approach had "immense potential" for the field of archaeology, its application in palaeoarchaeology is limited due to the extreme timespan and constraining nature of the archaeological record. He illustrated how the *Annaliste* problems can be overcome with an example of intercity relationship events within the ancient Greek district of Boeotia, medium-term Greece-wide trends, and long durational waves in patterns found within the archaeological record (Bintliff 1991, pp. 19-26). Michael Smith (1992, pp. 23, 31) also encouraged archaeologists to use Braudel's model to incorporate different temporal scales into archaeological research design, data collection and interpretation. However, Simon Holdaway and LuAnn Wandsnider (2008, p. 7) warn that this methodology can produce false patterns in the medium-term due to the palimpsestic nature of the archaeological record. While the *Annales* methodology suits historic archaeology, it cannot reliably be used for the wide range of applications archaeologists require.

'Palimpsest', a term borrowed from the Greek word πάλιν ('again'), refers to the medieval tradition of scraping old text from parchment to allow for reuse (Bailey 2007, p. 203). In archaeology, it refers to the deposition of the remains of multiple activities which overlap, mix or disappear over time as taphonomic processes create a layer of the archaeological record which constrains archaeological research (Lucas 2005, p. 37). Sites, features and artefacts are thus complex, multi-temporal deposits, far removed from the idea of living-floors (Holdaway & Wandsnider 2008, pp. 8-9). Geoff Bailey (2007, p. 204) uses the example of Palaeolithic stone tools, being accumulations of multiple knapping events, which have become compacted into an intermixed single layer, so they "cannot be resolved back into the individual episodes of activity". This is an oversimplification of palimpsests, which, for the palaeoarchaeological record, have greater temporal and spatial complexity, and are often lacking stratigraphic integrity (Bailey 2007, pp. 205-206).

In their case study of the late Holocene lithic record in east-central Argentina, Argentinian archaeologists Gustavo Barrientos, Luciana Catella and Fernando Oliva (2014) created short- and medium-term scale models of lithic attributes and spatial distribution patterns. They postulated that this, alongside long-term research, is required to create explanatory models to take advantage of the palimpsestic nature of the lithic record. The datasets of such temporospatial patterns do not show the rapid motion of ethnographic time, which is limited to a decade, but rather numerous events over a much longer term (Barrientos, Catella & Oliva 2014). As with Braudel (1979 (1992), p. 135) and his graph of wheat prices over time, a long-term trend, like a decline in wheat production over decades, may not be noticed by individuals who are more likely to see short-term trends, such as good or bad harvests. This mismatch in scales makes applying ethnographic models to the archaeological record problematic (Binford 1981, p. 197). Archaeological timescale methodologies which are less reliant on ethnographic or social theories are thus required.

Such an approach is that of time perspectivism, a multi-temporal system, alternative to Braudel's model, which encompasses the long timescales required by archaeologists (Bailey 2007, p. 201). Bailey (1981, p. 103; 1987, p. 7), who coined the term in the early 1980s, submitted a model for an archaeology-based theory: that differing timescales can be used to focus on specific features of human behaviour that are not necessarily evident in all scales. The range of timescales used is not limited to the Braudel model, but covers anywhere from millions of years to milliseconds. Each view would thus require different explanatory models, so, whilst the timescales are relative and can overlap, they are not interchangeable (Bailey 1983, pp. 166-167). Although short-term activity can be identified at finer resolutions of time, Bailey (1981, pp. 109-110) felt that the time perspectivism framework would be especially useful for investigating coarse resolutions, represented by prehistoric palimpsests, and longer behavioural trends, as it deals with processes of all timescales. For example, Oldowan and Acheulean stone tool assemblages can be viewed at a coarse resolution, revealing a general level of mental ability over millions of years, while a finer resolution will uncover the days or weeks taken to source the raw materials and indicative of human anticipation of future events, and the finest resolution shows both the skills and moments it took to knap the tools (Bailey 1983, p. 188). This is a sliding timescale, which has no set levels.

This idea caused debate within the archaeological community. Postprocessualists Michael Shanks and Christopher Tilley (1988, pp. 121-126) criticised Bailey for his focus on the long-term, which they saw as removing individuals and social structures from the past, for replacing "reality" with "scales", and for separating the past and present. Yet Michael Smith, who believed that archaeology should be a scientific discipline, noted that Bailey's work was important in its ability to scientifically investigate archaeological change through time (Smith 1992, pp. 26, 31). Similarly, Fletcher (1992, pp. 46-47) noted that whilst time perspectivism was a promising approach, as it could both show how long-term material structures could control human social life and how short-term artefacts reflected rapid social change, it required further development to become a useful

tool. However, Robert Squair (1994, pp. 93-94, 102) accused Bailey of manipulating the concept of time to separate "absolute time", "social temporalities", the past and present, and argued that such non-chronological notions of time could bring about "the demise of archaeology". Tim Murray (1999, pp. 12-15), in turn, criticised Shanks, Tilley and Squair for failing to clarify how social theory could be adapted to deal with the temporal issues surrounding time perspectivism. Such on-going debates suggested that Bailey's approach was not yet a viable tool.

Since the 2000s, archaeologists have investigated, utilised and transformed time perspectivism in an attempt to make it practicable. Wandsnider (2004, pp. 55-56) noted that the first steps, measurement decisions, were critical to its success. She suggested archaeologists focus on time measurements by selecting items from the material record that originate from a narrow point in time, looking at multiple changes in time on long-term structures, or investigating the overall characteristics of an assemblage that has accumulated over time. If the correct timescale for the task was not selected, little could be achieved. Kathleen Hull (2005, p. 357), in her study of a 6000-year sequence of hunter-gatherer remains from the Yosemite Valley in California, showed how processes affecting culture operate at different timescales, another important factor in the time perspectivism framework. She also recommended that the addition of cultural and environmental data would help clarify the patterns discovered by this approach (Hull 2005, pp. 363, 373-374). Jan Harding (2005, pp. 88-89) recommended that the system include the influences of temporality on human behaviour in order to reconnect the data to its original social context. His solution involved adding a layer of sequential genealogies which can trace the "particular institutions, practices and material culture" that created social systems through time (Harding 2005, p. 97). While interesting, this idea is not applicable to all forms of archaeological research, especially multi-geographical or multi-temporal studies (Bailey 2007, p. 201).

Other suggestions have been less useful in transforming the methodology. Gavin Lucas (2005, pp. 48-49), critical of time perspectivism, asserted that it only utilises chronological time in its application, and thus misses the opportunity for 'real' time explanations. He proposed that the time taken to create an Acheulian hand-axe from a horse butchery site at Boxgrove is no different to that of an eighteenth century gunflint, and thus timescale resolution does not add additional context (Lucas 2005, pp. 48-49). Bailey (2006, p. 719) countered this by arguing that, to give context to the hand-axe, it must first be compared to other hand-axes at the same site which may be separated in time by millennia – a task eminently suited to his methodology. William Altizer (2008, pp. 63-64) utilised time perspectivism for his investigation of the 1898 battlefield of EI Caney, Cuba, which covered a "palimpsest of temporalities": the geological time of the Cuban landscape, Taino prehistory, Spanish colonial history, and the archaeological battlefield itself. Unfortunately, without access to the archaeological record, his application of this approach is historical rather than archaeological (Altizer 2008, p. 75). Philosopher-archaeologist Sandra Wallace (2012, pp. 1-3, 147-148) recommended combining time perspectivism and a Heideggerian "scalar depth ontological approach" with which to investigate the "underlying reality" of a site through ontological connections rather than through human experience. For example, small-scale human activities interact with, and rely upon, large-scale physical ontological-temporal processes, such as plate tectonics, but the smaller scale cannot be merged with the larger. As of yet, few archaeologists have investigated these ideas.

Time perspectivism, although coalescing, still has challenges to overcome. Bailey (2007, pp. 201-202) continued to clarify his time perspectivism framework by defining four important ideas: different phenomena operate at individual timespans and resolutions; these phenomena should be viewed at their own timescale; differential time has a distorting effect on perspectives which an awareness of perspective corrects; and observations of time are subjective. Bailey (2008, pp. 21, 23-26) also addressed the issue of the loss of the individual and 'real time' to the palimpsestic

nature of the archaeological record, which results in a non-linear multi-scalar history. He suggested that these histories can be attached to linear long-term patterns and trends found in the material record. Three case studies have since been published utilising Bailey's methodology. Tayrah Epp (2010, pp. 53-71) studied Mennonite cemeteries in Nebraska dating c. 1870-1950, investigating stylistic change at a fine resolution suitable for short-term timescales. This revealed patterns of cultural change within the Mennonite community. In his case study of a Romano-British farmstead in Cotswold, Andrew Gardner (2012, pp. 148-162) used palimpsests and aggregates found within the archaeological record to find overarching patterns. He demonstrated that the community's "varied tempos and temporalities of action" across time formed both sporadic and continuous change events, due to outside economic and structural shifts through time. Seweryn Rzepecki (2014, pp. 11-18), re-evaluated two Polish megalithic tombs, one at Sarnowo 1 and one at Świerczynek, using Bailey's approach as an analytical tool. He analysed them as multi-phased, cumulative palimpsests which, although exhibiting style variations, had durable funerary meaning over the long-term. However, archaeologists have difficulties in putting time perspectivism into practice, due to its disconnection with traditional archaeological views and its underdeveloped state (Bailey 2008, pp. 26, 28-29). As such, it is not yet a feasible tool for archaeological use.

Alternative time perspective methodologies were also investigated. During the 1990s, Nicola Stern (1993, pp. 202, 205) applied the palaeontological time-averaging tool to her work to account for the influences of geomorphic processes on the behavioural events in the palaeotlithic record. Time-averaging refers to "assemblages that represent the mixing of fossils from different time intervals", as evidenced by artefact weathering stages (Stern 1993, p. 209). In her study of the Okote Member of the Koobi Fora Formation, Kenya, Stern (1993, pp. 202-222) showed that low-density artefact scatters and high-density patches were not results of different patterns of behaviour, but only looked different due to the deposition processes that created these

palimpsests. Such patterns can be found after archaeologists make similar adjustments. Likewise, Stern (1994, pp. 93-103) utilised time-averaging to the Okote Member of Karari Ridge, Kenya, to uncover distribution patterns across 80,000 years. She contended that both results could be applied to questions of early hominid behaviour. In the 2000s, Wandsnider (2008, pp. 64-93) utilised time-averaging and taphochronometric tools in her investigation of the hunter-gathers at the Wyoming Basin, America. She uncovered mid-resolution Palaeoindian occupational event patterns within the coarse resolution of the Early Archaic to Late Prehistoric periods using taphochronometric indicators, such as density data related to debitage, fire-cracked rocks, and hearths, alongside bone-weathering stages. Further work is yet required before archaeologists have a robust body of mid- to long-term datasets to utilise in matching such patterns to human behavioural models (Stern 1993, p. 221).

Other archaeologists have alternative time perspective methods to understand timescale, deep time and human behaviour. Richard Cosgrove (1995, pp. 85-100) focussed on patterns of artefact discard across Pleistocene sites in south-western Tasmania, to reveal that global biogeographic changes influenced long-term Aboriginal settlement patterns and behavioural variability. Despite a high artefact density and long timespan, these sites cannot be resolved into smaller timescales due to slow deposition rates. Phillip Edwards (2004, pp. 119-126) investigated hominid adaptation at the artefact-dense Palaeolithic 'megasites' of Wādī al-Ḥammah and Ṭabaqat Faḥl in Jordan, both of which incorporate long- and short-term timeframes within the same strata, resulting in difficulties deciphering the data. Spanish historians considered Neanderthal assemblages and events at Abric Romaní Level J in Spain, and determined that, as analytical resolution increases, high rates of short-term behavioural flexibility become visible within long-term trends, such as the wide selection of lithic material despite an overall preference for chert (Vaquero et al. 2012, pp. 163-179). In each case, interpreting these patterns must be done at a scale proportionate with the timescales and site size involved (Cosgrove & Allen 1996, pp. 24, 29). Furthermore, to clarify the

temporal and behavioural patterns found within the archaeological record, Edwards (1995, p. 61) recommended using both ancient and modern long-term, regional dispersal studies. The results of these studies can provide suitable data for the required behavioural datasets.

Despite archaeological interest in time, the inclusion of the concept of time in archaeological theory has had a problematic history. There is continued debate as to how time theory should be applied to archaeology, be it Bailey's time perspectivism or another theory. Unfortunately, this is no easy task as there is no current consensus within the archaeological community. However, for archaeologists who recognise that the archaeological record is comprised of palimpsests, common frameworks of timescale and resolution are necessities. Although different to the traditional methods typically employed, this is an opportunity to explore "alternative ways to describe an archaeologically-based past" (Holdaway & Wandsnider 2008, p. 12). As such, archaeologists should continue tackling the time perspectivist approach to produce a coherent multi-scalar methodology with robust mid- to long-term behavioural datasets. Temporally appropriate archaeological questions about human behaviour can then be investigated using the patterns of behaviour identified in the material record. Turning time perspectivism into a viable, discipline-wide tool is the next challenge.

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