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26

PRESENT TO PAST

Ethnoarchaeology

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Ethnoarchaeology is a sub-field of archaeological research concerned primarily with investigation of the role of material culture and the built environment within living societies, and the processes which effect and affect their transformation to archaeological contexts. The ultimate objective of such research is to improve methods and procedures of archaeological inference, and particularly the use of analogical reasoning. A wide range of subject matters has been examined by ethnoarchaeologists, including different technologies of artefact manufacture; the nature, meaning and spatial consequences of artefact discard; the social and symbolic structuring of space; the locus and meaning of artefact style; and processes of site maintenance, abandonment and decay. This chapter examines the origins and development of ethnoarchaeology as a distinct sub-discipline; the range, strengths and weaknesses of different theoretical perspectives within ethnoarchaeology; its contributions to more general theories of material culture; and past, present and future research priorities. Drawing on a wide range of case studies from different parts of the world, the chapter also discusses the contributions of ethnoarchaeology to the discipline of archaeology and broader studies of material culture. The chapter concludes with a discussion of the main ethical issues raised by ethnoarchaeology as currently conceived, and in an effort to address these will offer an alternative definition and research agenda which gives more credence and weight to indigenous, non-Western epistemologies of the material world than has been the case in previous formulations of the sub-field.

Ethnoarchaeology emerged as a distinct sub-field of archaeology (and some would even say it qualifies as a sub-discipline) in the 1960s, as part of broader changes in archaeological method and theory that were associated with what came to be known as 'processual' or 'new' archaeology. Archaeologists, and their antiquarian predecessors, however, had always made use of ethnographic data to assist their interpretation of archaeological remains. What was distinctive about the development of ethnoarchaeology as a concept was that it sought to transform the way in which archaeologists utilized ethnographic data in two fundamental ways. First, rather than relying on the published accounts of ethnographers and anthropologists, as had been the norm among previous generations (with some notable exceptions – such as the British field archaeologist O.G.S. Crawford, e.g. 1953: 218–31), archaeologists themselves became actively involved in the collection of pertinent ethnographic information through participant observation among living communities. Second, the unstructured and random selection of ethnographic 'parallels' that had tended to characterize earlier uses of ethnographic data in archaeological interpretations were challenged, and in their place efforts were made to establish robust analogies that could stand up to critical testing and had some validity across both time and space. (For discussion of the history of using ethnographic parallels, see Charlton 1981; Daniel 1950; Orme 1973, 1981. For discussions on the use of ethnographic analogy in archaeology see Ascher 1961; Binford 1967; David and Kramer 2001: 33–62; Gould

1980: 29–47; Gould and Watson 1982; Hodder 1982a: 11–27; Lane 1994/95; Lyman and O'Brien 2001; Poor 1999; Stahl 1993; Stiles 1977; Wobst 1978; Wylie 1982, 1985.)

THE ORIGINS AND GROWTH OF ETHNOARCHAEOLOGY

The precise origins of 'ethnoarchaeology', as is often the case with intellectual advances in any discipline, are diffuse. The term 'ethno-archaeologist' is known to have been used as early as 1900, by Jesse Fewkes in connection with the use of local traditions and knowledge dealing with Native American migrations so as to interpret remains in the south-western United States (see Hodder 1982a: 28; David and Kramer 2001: 6) – a tradition that subsequently became popular among archaeologists and ethnographers based in the Bureau of Ethnology in the United States. However, as discussed above, similar approaches were being used by Fewkes's predecessors as early as 1845, whereas systematic ethnoarchaeological research *with clearly defined objectives and methodology* did not begin until much later. Kleindienst and Watson's study of what they termed the 'archaeological inventory of a living community' (1956), also conducted among a group of Pueblo Indians, is often cited as the crucial turning point, since this aimed to illustrate the extent to which an archaeologist might be able to infer the non-material elements of a particular society from its material traces. This was followed soon afterwards by a similar study by Ascher among Seri Indians in Mexico (1962). Both studies were designed explicitly to test the validity and reliability of the inferential procedures then used in archaeology, and to try to account for the resultant biases and misinterpretations of the material evidence. David and Kramer, on the other hand, while recognizing the important contribution made by these authors, have suggested that Donald Thompson's study of the influence of seasonality on the material culture and adaptations of the Wik Monkan tribe of Australian Aborigines (Thompson 1939) may represent the first truly 'modern' ethnoarchaeological study (2001: 6). However, Wauchope's study of Maya houses, conducted explicitly for 'collecting data to facilitate interpretation of ancient dwelling sites' (1938: 1), would seem to be an equally deserving candidate. Irrespective of which study qualifies as the 'first' piece of ethnoarchaeological research, there is no doubt that its origins as a distinct sub-discipline are directly associated

with the rise of *anthropological* approaches to archaeology in North America during the late 1950s and early 1960s (e.g. Binford 1962; Willey and Phillips 1958), and the simultaneous concern to introduce 'scientific' procedures of analytical reasoning and explanation (e.g. Binford 1964; Clarke 1968; Watson et al. 1971). Both aspects lay at the heart of what became known as the 'new archaeology', which placed greater emphasis on the reconstruction of cultural processes in the past (hence the term 'processual archaeology') as opposed to earlier concerns with the reconstruction of cultural histories. Since processes cannot be directly observed in the static arrangement of archaeological materials, and different processes might well generate the same spatial and physical patterning of material culture, it seemed highly appropriate to investigate the operation of different dynamic processes and their material traces in the present in the hope that it might reveal ways of distinguishing between them.

This being said, precisely what constituted ethnoarchaeology, as opposed to more general studies of material culture in contemporary contexts, was still very much a matter of opinion and inclination. In their major review of much of the relevant literature in English, French and German, David and Kramer provide a variety of published definitions, out of the myriad available (2001: 6–13), and their own particular view on the issue. The variability reflects, in part, the diversity of research strategies, research objectives and ultimate goals of different ethnoarchaeologists. Nevertheless, many have a number of elements in common, that are listed in Table 26.1.

Undoubtedly other archaeologists and ethnoarchaeologists might want to add extra clauses or subtract certain elements from this. The point, however, is not to offer a 'comprehensive' definition but rather to highlight the main components of ethnoarchaeological research on which there is at least some broad if not entirely unified consensus. Far more important is the need to recognize different trends and the philosophies of material culture and human 'behaviour' that underlie them.

For instance, after an initial period of fairly diverse research philosophies and the use of a wide range of terms, that included 'living archaeology', 'action archaeology', 'actualistic research', 'archaeoethnography', 'ethnographic archaeology' and 'modern material culture studies', to describe what would now be simply categorized as ethnoarchaeology, from the mid-1960s until at least the mid-1980s, a great many ethnoarchaeological studies were essentially

Table 26.1 *An outline of the core characteristics of ethnoarchaeology based on commonalities of the majority of published definitions given in David & Kramer 2001*

Core Defining Characteristics of Ethnoarchaeology
• A research strategy, not a theory.
• Conducted among living societies by archaeologically-trained individuals.
• Involves the combined use of anthropological methods of participant observation and common archaeological procedures for recording sites, structural features and artefacts.
• General purpose is to gather information directly relevant to assisting the interpretation of archaeological remains and for answering archaeological questions.
• Developed in particular to investigate and document:
a) the processes whereby material culture and residues enter into and create archaeological records;
b) the causes of variability in material culture and its spatio-temporal organisation;
c) the relationships between such variability and human behaviour/action, systems of meaning, social organization, and/or patterns of belief.

concerned with establishing the various 'material correlates' of different categories of human behaviour (e.g. Gould 1980: 4; Kramer 1979a: 5; Rathje 1978: 49; Stanislawski 1978: 204). Ideally, such correlates need to be universal in nature, or at least common under certain cross-cultural conditions, if they are to have predictive value and to allow correct inference of meaning and significance from the static remains of the archaeological record (e.g. Binford 1980). Under these broad terms, the majority of ethnoarchaeologists subscribed to the belief that material culture and its patterning reflect behaviour, although they differed widely as to the specifics of this relationship. (See, for instance, the debate on whether the archaeological record represents a *distorted reflection* of past human activity, e.g. Schiffer 1985, or the *normal consequence* of the operation of behavioural systems, e.g. Binford 1981a.) Accordingly, during these two decades (c. 1965–85) considerable attention was given in particular to identifying and describing the various processes that contribute to the formation of archaeological records; the various mechanical and physical processes involved in the manufacture of different types of artefact, especially pottery and iron; and the nature, causes and social referents of stylistic variation in artefacts. Examples of some of the most significant of these studies and the debates they engendered are given below.

From the late 1970s and early 1980s, a contrary position began to be forwarded which posited that material culture stands in a recursive relationship to human agents. This stance is widely associated with, at least in the first instance, the work of Ian Hodder (1982b) and several of his students. Strongly influenced by the 'practice' or 'action' theories of Bourdieu (1977) and Giddens (1979, 1981), that emphasize the contingent nature of social structures and norms, along with various anthropological analyses, and especially structuralist and semiotics-oriented analyses, of material objects and the organization of space (e.g. Barthes 1973; Douglas 1966; Glassie 1975; Hugh-Jones 1979; Leach 1976; Lévi-Strauss 1968, 1970; Tambiah 1969), these researchers tended to see the relationship between material culture and human action as being essentially 'recursive'. By which, it was generally meant that while the patterning of material culture indubitably results from human activities and intentions and thus might be said to 'reflect' these, material culture (including architecture and 'constructed space') through its very materiality can also constrain, condition, generate and facilitate certain kinds of meaningfully informed behaviour and beliefs. While many of the early studies of this 'post-processual' approach to ethnoarchaeology (e.g. Braithwaite 1982; Crawford 1987; Donley 1982; Lane 1987; Miller 1985; Moore 1982; Parker Pearson 1982; Welbourn 1984) sought to illustrate in more detail how material culture and its spatial organization worked in a recursive fashion in particular ethnographic contexts, far less attention was given to how such a concept might be used to interpret specific archaeological contexts and materials other than in an fairly abstract way. Because of this lack of attention to how this theoretical perspective on material culture might be applied archaeologically, criticisms were commonly couched along the lines of 'So what?' Alongside such general reactions, other common criticisms of 'post-processual' ethnoarchaeology were that it lacked 'methodological rigour', that rather than offering cross-culturally valid analogies it was overly 'particularistic', and 'anti-scientific' (e.g. Stark 1993; Watson and Fotiadis 1990).

Since the early 1990s, there has been a certain diminishing of ethnoarchaeological research, and most particularly work conducted from a 'post-processual', 'post-structuralist' perspective – although some of the current work on *chaînes opératoires* and 'technological style' represents an emerging trend that has some intellectual affiliation with such studies. One reason for this may be increasing concern within archaeology with disciplinary ethics. Fewster (2001), for instance, has argued that ethnoarchaeologists face two particular ethical concerns in addition to those common to archaeology in general and those shared with social and cultural anthropologists. (For a review of these shared ethical concerns as they pertain to ethnoarchaeology, see David and Kramer 2001: 63–90.) The first dilemma, according to Fewster, concerns the issue of 'representation' and more particularly the morality of studying '"other" societies with the sole intention of making analogies to those of the past' (2001: 65) (Plate 26.1). Fewster's second concern relates to the role and responsibilities of ethnoarchaeologists to the communities among whom they work 'with regard to active participation in programmes of economic development' (*ibid.*). To resolve such dilemmas, Fewster argues, there is a need to develop a 'responsible epistemology' of the ethnoarchaeological subject centred on Giddens's (1979) notion of the role of agency in structural change in ways in which agency is 'neither relegated to the margins nor transliterated into symbolic material representations' (Fewster 2001: 67).

Another likely contributing factor has been the burgeoning of studies of material culture in contemporary contexts by scholars from other disciplines – including the revival of interest in, and concern with, material culture among anthropologists. Somewhat bucking this trend, to judge from David and Kramer's review, is the number of ethnoarchaeological studies being conducted by non-Western archaeologists, whose work may well open up new avenues of inquiry and different perspectives as to what constitutes material culture. Another feature of ethnoarchaeological research in recent years has been the increasing regionalization of approaches, whereby different themes and methodologies are increasingly being developed to address archaeological questions specific to a particular geographical area. (For reviews of

Plate 26.1   *Imagining the 'Other' – a journalist interviews a family group of Khomani from the Kagga Kamma Tourist Reserve, on the steps of the South African National Gallery, Cape Town at the opening of the Miscast: Negotiating Khoisan History and Material Culture exhibition, 1996 (see Buntman 1996; Lane 1996a); cf: Figure 26.3. Photo. P. Lane*

the history of ethnoarchaeological research on different continents see, for example, Atherton 1983, MacEachern 1996 and Schmidt 1983 on Africa, especially sub-Saharan Africa; Griffin and Solheim 1998/99 on Asia generally and Allchin 1985 and Sinopoli 1991 on South Asia; and Allen 1996 on Australia). This may well relate to the more general awareness of the need to establish the relevance of any particular ethnographic analogy on both the source (i.e. ethnographic) and subject (i.e. archaeological) sides of the equation. (For further discussion of the issue of relevance, see Wylie 1985.)

FORMATION OF ARCHAEOLOGICAL SITES AND ASSEMBLAGES

One of the most common concerns of ethnoarchaeologists during the heyday of processualist approaches was with the wide range of human activities and natural events and actions that can contribute to the formation of archaeological sites and deposits. Many of the earliest studies of this kind were simple 'cautionary tales', or 'spoilers' as Yellen termed them (1977a: 9–11). For instance, in his study of an abandoned camp in the Rocky Mountains that had been occupied by Native Canadians related to the Cree, Bonnischen found that his 'intuitively derived interpretations' of the observed patterning resulted in a combination of errors that included misidentification of items and their functions, false associations between objects and their users, and incorrect definition of activity areas and their relationship to one another (1973: 286). Comparable studies encompassed investigations of an abandoned Apache *wicikup* or living site in Arizona (Longacre and Ayers 1968), comparisons of the artefact assemblages found at occupied and abandoned camps used by Turkana pastoralists in northern Kenya (Robbins 1973), and study of the recycling of dwellings and other structures in a Fulani village in Cameroon (David 1971).

The object of such studies was essentially to observe the operation of particular processes and events in the present, so as to draw out broader implications of value to the interpretation of remains from the past. Aside from ethnocentric bias, other suggested reasons for why errors in interpretation might occur include the relative proportion of organic artefacts to inorganic ones in household inventories (the latter being more likely to survive and thus to be 'over-represented' in archaeological assemblages); the conditions under which a site was abandoned (for instance, a planned abandonment would be more likely to result in fewer artefacts being left behind than one which took place in response to some catastrophic event); the secondary use of buildings and other features, especially as locales for disposing of refuse; and the effects of various post-depositional process ranging from the activities of children to different natural weathering processes. (For a detailed summary of the literature, see Schiffer 1987.)

Another category of site-formation studies developed during the same period relied more on uniformitarian assumptions[1] pertaining to the natural world. A classic example of this kind is McIntosh's ethnographic study of house wall collapse and decay in Ghana near the archaeological site of Begho, and subsequent controlled excavation of a recently abandoned structure (1974, 1977). Additional examples of site-formation studies focusing on the operation and physical consequences of different processes governed by natural laws include Schmidt's investigation of iron-smelting furnaces in Buhaya, Tanzania (1980; Schmidt and Avery 1978; Schmidt and Childs 1996) and Friede and Steel's experimental burning of Nguni huts (1980; see also Plate 26.2). To some extent these cross-cut more strictly taphonomic[2] studies of natural formation processes such as the effects of fluvial activity on site assemblages, or the effects of dogs, hyenas and other scavengers on bone preservation. (For overviews, see Gifford 1981; Hudson 1993.) Some more recent approaches to the reconstruction of activities and activity areas (see below) have also begun to investigate various microscopic by-products of human activity, such as phytoliths, diatoms, spherulites, rock polish, soil micromorphology and micro-fauna, using a combination of ethnographic observation and various techniques of scientific analysis, with promising results (e.g. Boivin 2000; Brochier et al. 1992). The strength of the analogies developed in these cases also rests on the fact the various microscopic traces; although a consequence of human or humanly managed activities such as stock herding, are similarly governed by natural laws.

RECONSTRUCTING DISCARD, ACTIVITY PATTERNS, AND BUTCHERY PRACTICES

During the initial stages of the new archaeology, there was a widespread assumption that the spatial patterning of material on archaeological sites reflected the patterning of activities
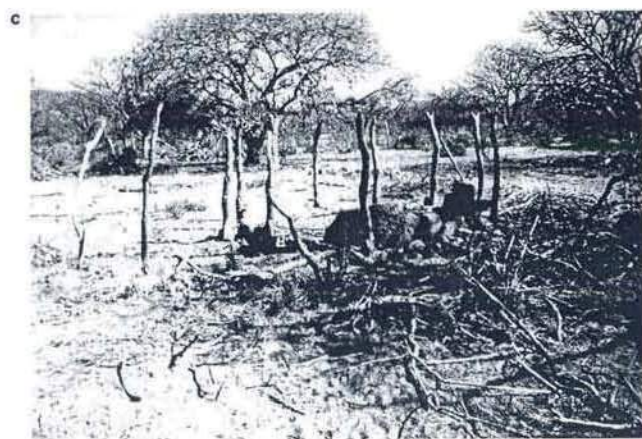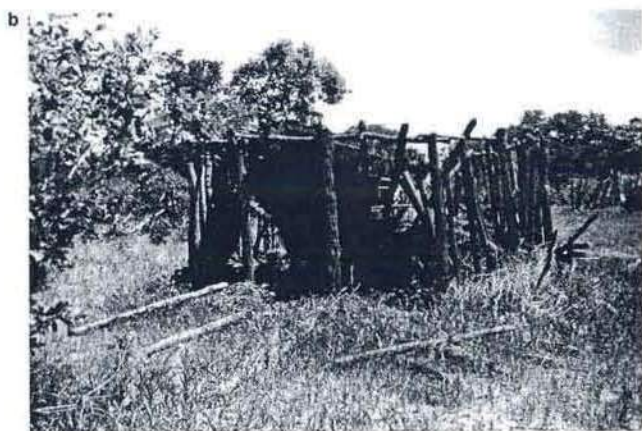
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Plate 26.2   *Stages in house collapse at Tswana farming (masimo) settlements – a) typical masimo compound and Tswana cone-on-cylinder rondavel, SE Botswana 1992; b) cone-on-cylinder rondavel in early stage of collapse, showing pattern of roof collapse, N Botswana 1994; c) Example of a Tswana rondavel after several years of abandonment, showing surviving residual wall stumps, SE Botswana 1992; d) House daub scatter marking remnants of a 17th century Tswana house, excavated near Ranaka, SE Botswana 1992. Photos: P. Lane*

and the use of space at the site during its period of occupation or use. By mapping the distribution of this material, it was believed, aspects of the organization of the society that produced these remains could be simply 'read off', thereby providing insights into such issues as room function (e.g. Longacre 1970), whether certain areas were associated with different social categories (e.g. Hill 1970; Clarke 1972), and even the prevailing rules of post-marital residence (e.g. Deetz 1968; Ember 1973). Largely as a consequence of ethnoarchaeological research in a variety of settings on discard behaviour, activity patterns and butchery practices, few archaeologists would now accept such one-to-one correspondences. Regarding discard practices, for example, at least three broad categories of 'refuse' need to be distinguished from one another – namely, 'primary refuse' discarded at its location of use or production, 'secondary refuse' discarded away from its use location, and *'de facto'* refuse that consists of material (often still usable) left behind when structures and sites are abandoned (see Schiffer 1976, 1987). A range of other processes may also account for the formation of particular deposits, including the caching, curation and recycling of materials and structures, accidental loss and deliberate deposition. Attempts have also been made, for example, to

distinguish between 'nuclear' and 'communal' areas (e.g. Yellen 1977a; Bartram et al. 1991), and animal 'kill sites' and 'processing sites' at hunter-gatherer sites (e.g. Binford 1978b; 1991; see also Plate 26.3).

The ethnoarchaeological literature on these topics is vast. The following example, however, illustrates some of the principles involved. Specifically, at the late Upper Palaeolithic open site of Pincevent in northern France, occupied between some 12,300–10,700 years ago, scatters of flaked stone tools and waste material with reindeer bones and fragments were found in association with three hearths in an area designated Section 36 by the excavators (Leroi-Gourhan and Brézillon 1966). In their interpretation of the site, Leroi-Gourhan and Brézillon suggested that each of the hearths lay within a circular hut constructed from skin and poles that overlapped with one another to form a larger structure with a common gallery and several entrances, and that the site probably represented a base camp. Drawing on his observations at Nunamiut hunting stands and base camps, Binford argued that only one hearth (hearth 1) may possibly have been situated within a tent, while the other two (hearths 2 and 3) were outside hearths, and that the site was a 'logistic' camp rather than a residential one (1978b, 1983: 144–60). Binford's principal

Plate 26.3   Elephant butchery and meat processing by a group of Bugakhwe (Northern Khoe Bushmen) in the Okavango Delta, Botswana 1996–a) Men butchering a juvenile elephant shot as part of a Government controlled culling programme; b) Bugakhwe woman hanging up strips of elephant meat on a wooden frame so as to make biltong (sun-dried meat): Photos. P. Lane

reasons for suggesting this were as follows. First, the patterning of debris around hearths 2 and 3, in his view, resembled the structure and size composition of 'toss' and 'drop' zones created by Nunamiut while seated around open hearths. 'Drop zones' are generally composed of small waste items that accumulate when people are seated around a hearth, while 'toss zones' (which can be either in front or behind the seated persons) typically comprise larger debris deliberately thrown away from the seating area so as not to interfere with the activities being performed there. After even a short period of hearth use, two concentric semicircles of size-sorted debris are created. This patterning of discarded material does not occur around hearths inside huts or tents, principally because people are inclined not to throw away large bits of rubbish within their dwelling and sleeping space. Instead, they are more likely (as in the case of the Nunamiut) to put these objects beside the hearth for subsequent disposal as 'secondary refuse' outside the structure. Open hearths occur on both base camps and temporary work and logistic stations among the Nunamiut. However, Binford noted that Nunamiut home bases could be differentiated from hunting stands owing to the absence of activities directed towards the maintenance (i.e. tidying up) of living space at hunting stands, with the result that whereas patterned 'toss' and 'drop' zones tend to survive at sites used for only a short period of time before being abandoned, at base camps further sweeping up and redeposition of items occur that effectively restructure the patterns initially created around open hearths. The fact that a pattern resembling 'toss and drop zones' survived archaeologically at Pincevent, therefore, suggested to Binford that hearths 2 and 3 were not inside a tent and that the site was not a base camp, but instead some form of logistic station (for alternative assessments, see Carr 1991; Johnson 1984).

Many other comparable studies have been conducted among mobile hunter-gathers (e.g. Binford 1981b, 1982; Gould 1968; Yellen 1977b, 1993; O'Connell 1987; O'Connell et al. 1991), pastoralists (e.g. Cribb 1991; Hole 1978; Mbae 1990) and agro-pastoralists (e.g. Kent 1984; Graham 1994; Nandris 1985) as well as settled fishing communities (e.g. Pétrequin and Pétrequin 1984) and agriculturalists (e.g. Deal 1985; Hayden and Cannon 1983; Gorecki 1985), and on task- or gender-specific groups (e.g. Chang 1993; Gallay 1981; Gifford 1978; Gifford and Behrensmeyer 1977; Stewart and Gifford-Gonzalez 1994; Tobert 1985; Vidale et al. 1993). Inevitably, these studies have been motivated by a wide range of specific research questions. Many of the studies among hunter-gatherers, for instance, have been ultimately concerned with how mixed assemblages of 'bones and stories' found in Plio-Pleistocene depositional contexts on the African continent may or may not have been related to the behaviour of early hominids. (See Binford 1983, Gallay 1999 and Isaac 1984 for synopses of this debate.) Whereas, for instance, parallel studies among pastoralists have been concerned with identifying various material 'signatures' that might be used to detect evidence of pastoralism in the archaeological record and to distinguish between sites occupied during different seasons.

The most obvious conclusion to be drawn is that the patterning of remains uncovered on an archaeological site is rarely the material equivalent of a snapshot taken while the site was in use. Instead, on most sites and in most contexts, there is progressive 'smearing and blending' of different depositional events (Stevenson 1991: 294). More significantly, these studies challenge the view that all sites experience a progressive reduction in the quantity and quality of information over time, culminating in a state of entropy (e.g. Ascher 1968; Binford 1981a: 200). Instead, it is now recognized that degradation is caused by specific *processes* rather than simply the passage of *time*, and as critically, archaeological site formation processes may add information as well as removing it. Consequently even the most degraded deposits still retain information about how they were formed. The real interpretive challenge, therefore, lies in trying to establish whether different modes of discard, uses of space, butchery events and so on leave sufficiently diagnostic physical 'signatures' that would enable archaeologists to distinguish between them. The only way of establishing this is through detailed comparative study of the operation of such processes in the present, where causes and effects can both be observed.

SOCIAL AND SYMBOLIC USE OF SPACE

One criticism that can be levelled at many, but by no means all, ethnoarchaeological studies of discard practices and activity areas is the lack of attention given to cultural context. Thus, although Binford's observations regarding the different intensity of maintenance activities at base camps and hunting stands provides a useful interpretive model for understanding hunter-gatherer sites, to imply, as he does, that patterns generated by discard at hunting

stands *in general* are not subjected to tidying up simply because they are non-residential introduces several ethnocentric assumptions about 'domestic space' and attitudes to discarded materials. It also fails to explain *why* this conceptual division is important to the Nunamiut. Moreover, even if it could be demonstrated that particular discard strategies are common to all modern mobile 'hunter-gatherer' groups, as has been suggested by some (e.g. Murray 1980), the possibility that hunter-gatherer groups in the past behaved differently must always be kept in mind (Wobst 1978).

Several of the early post-processual ethnoarchaeological studies were directed at addressing precisely these concerns over the lack of attention to cultural context. In her study of discard among the Marakwet in Kenya, for instance, Moore noted that they distinguished three types of 'refuse', namely ash from cooking fires, chaff produced during the winnowing of millet and sorghum, and dung from the goat pens found in most compounds (1982, 1986). As well as being conceptually and semantically distinguished, these categories of rubbish tended to be spatially segregated as well. Thus ash was normally thrown behind the woman's house, chaff and household sweepings dumped downslope from the compound, and goat dung also down-slope but behind the man's house. Care was taken to ensure that these different types, and especially ash and goat dung, did not become mixed deliberately. All three categories would constitute what processualist archaeologists might simply designate 'secondary refuse', and as Moore observed their spatial patterning did indeed 'reflect' the activities and uses of the various structures closest to them. However, although clearly influenced by functional requirements and the maintenance of living space, Moore found that these practices also related to a broader ordering of Marakwet society on age and gender lines, and that the different categories of refuse carried a number of symbolic associations that related in particular to the positive and negative values Marakwet placed on the roles of men and women within society. Following Bourdieu's analysis of the Kabyle Berber house (1977: 91, 1979), Moore argued that the symbolic loading of each category of refuse, the spaces where it accumulated and the gendered task with which it was associated acted as mnemonics for the wider cultural order. Thus, for instance, the practical separation of Marakwet women from tending goats has the effect of restricting access to, and control over, material wealth to men while simultaneously generating a particular symbolic capital

which men can deploy in various social and political strategies to their own advantage (Moore 1986: 91–120).

Similar arguments about the intersection of agency, relations of power and symbolic meanings in the material world featured prominently in other post-processual studies of discard practices (e.g. Hodder 1982b: 125–63, 1987) and the use and production of space (e.g. Crawford 1987; Donley 1982; Herbich and Dietler 1993; Kus 1982; Lane 1994; Smith and David 1995). More generally, post-processual approaches tend to emphasize the recursive nature of material culture and architectural forms in the constitution and reconstitution of meaning that is derived, in part, from their central role in the routinization of daily practice. Thus, for instance, in her study of Swahili town houses in Lamu, Kenya, Donley noted that newly born infants are taken on a tour of their parental home and 'told who is to use each item of furniture and on what occasions' (1982: 70), thereby establishing the 'ground rules' of a symbolic scheme that are re-enacted through the temporal and spatial ordering of daily activities during the course of their lives.

Envisaging how such meanings might change, however, requires recognition of the potential for different 'readings' of the material world and the symbolic schemes associated with it, by individuals who occupy different positions of power, status and authority. In this sense, it can be argued that the spatial and formal qualities of the material world exhibit certain text-like properties, and like conventional texts are 'open to a multiplicity of different interpretations' (Moore 1986: 86; see also Hodder 1986). This polysemic quality, by virtue of the power of meaning to guide, stimulate and condition everyday practice ensures that spatial arenas become a nexus of ideological discourse and concern, and as a cultural representation, any spatial order is 'completely bound up with the conduct of a continual process of argumentation' (*ibid.*). To offer one reading out of many, or to challenge a dominant reading, thus requires not simply a rhetorical, but also a *practical* autonomy over the formulation and articulation of the spatial order. In such formulations individuals are seen to be not merely passive observers of rules (as was the case in many processualist approaches) but active creators, through their agency, of a world imbued with meaning.

Alongside these symbolically oriented studies of the use of space, other ethnoarchaeologists have been more concerned with investigating the possibility of accurately inferring the

principles of social organization, population size and/or variations in wealth and status from such variables as settlement layout, room size, architectural features and house floor artefact inventories. By and large, despite an initial optimism that robust material correlates might be identified (often inspired by cross-cultural studies based on the Human Resources Area files), many of the correlates that have been proposed (e.g. Jacobs 1979; Smith 1987; Sumner 1979; Watson 1979; Wilk 1983), have all been found to be generally context- or culturally specific, and as open to symbolic manipulation as any other element of the material world.

The complexity of the relationships between compound or room area, wealth and household size are drawn out, for example, by Kramer (1979b, 1982) with reference to the architectural space of a Kurdish village. Accepting the premise that 'residential space reflects variation in both compound population and economic status' (1979b: 158), Kramer, nevertheless, noted that certain architectural features were of relevance to different socio-economic variables. Specifically, the number of dwelling rooms provided a good indication of the number of co-residing married couples, whereas estimates of household size were more adequately derived from the metric area of dwelling space, although the number and/or volume of facilities such as ovens and grain bins also provided a coarser indication. Finally, compound size, rather than the area of the dwelling space, correlated positively with the economic prosperity of the principal resident (1979b: 153–8, 1982: 104–36). Watson, on the other hand, in a comparable study of another village in the Iranian Zagros, with a much lower total population, found that, along with its size, the furnishings and condition of the living room were also good indicators of family size and relative wealth or poverty (1979). In fact, Kramer also noted that across south-west Asia the relationship between settlement size and population density exhibits considerable variation (1982: 160–8). Also of relevance are the observations by Audoze and Jarrige (1980) that in Baluchistan compound size was determined by the types of domestic animals that were kept rather than wealth, and by Horne (1994), who found, also for an Iranian village, that such relationships were further complicated by the system of inheritance, which allowed members of the same kin group to occupy several spatially dispersed compounds simultaneously, while Friedl and Loeffler (1994) have drawn attention to the need to also consider the life histories of individual rooms and buildings. (See also Lane 1994 for an African illustration of this.)

ARTEFACT TECHNOLOGIES AND CRAFT ORGANIZATION

A third cluster of ethnoarchaeological studies concern those that deal with issues relating to the manufacture of objects, their formal properties, the meanings of their stylistic variation and the social context of their production. As with the other main themes of ethnoarchaeological research, such issues have been addressed from a combination of broadly processual and post-processual perspectives, and are reviewed below along these lines. That said, such categorization masks considerable variation in the overall theoretical perspectives of the different researchers involved.

By far the largest number of artefact-focused ethnoarchaeological studies have been concerned with documenting the techniques and processes of their manufacture, with the bulk of these being concerned with potting (for a synopsis, see Kramer 1985) metalworking, especially iron (for summaries concerning Africa see, e.g. Childs and Killick 1993; Schmidt 1996) or stone working (e.g. Brandt 1996; Clark 1991; Gould 1980; White 1967), with other crafts being rarely investigated (Plate 26.4). The principal value of these studies is the information they provide on variations in techniques of artefact manufacture, the processes involved, and the range of physical, chemical and mineralogical characteristics that can be used to distinguish between the use of different techniques in a particular craft. However, given the pace of social change and the growing impact of globalization on non-Western cultures (a subject that has also received some ethnoarchaeological investigation, e.g. Moore 1987; Rowlands 1996; Sargent and Friedel 1986), such that even seemingly robust craft traditions are now rapidly dying out, these studies are also useful pieces of historical ethnography.

Only rarely have ethnoarchaeologists approached the investigation of a particular technology from a holistic perspective, incorporating the insights gained from ethnographic observation with those obtained from the use of material science, historical inquiry, anthropological analyses and archaeological excavation, best illustrated in the work by Schmidt and Childs on iron smelting, its symbolism and long-term history in the Buhaya region of north-western Tanzania (see Schmidt and Childs 1996; Schmidt 1997, and references therein). More specifically, by deploying a range of disciplinary approaches and by comparing their ethnographic data with the historical and archaeological record of iron
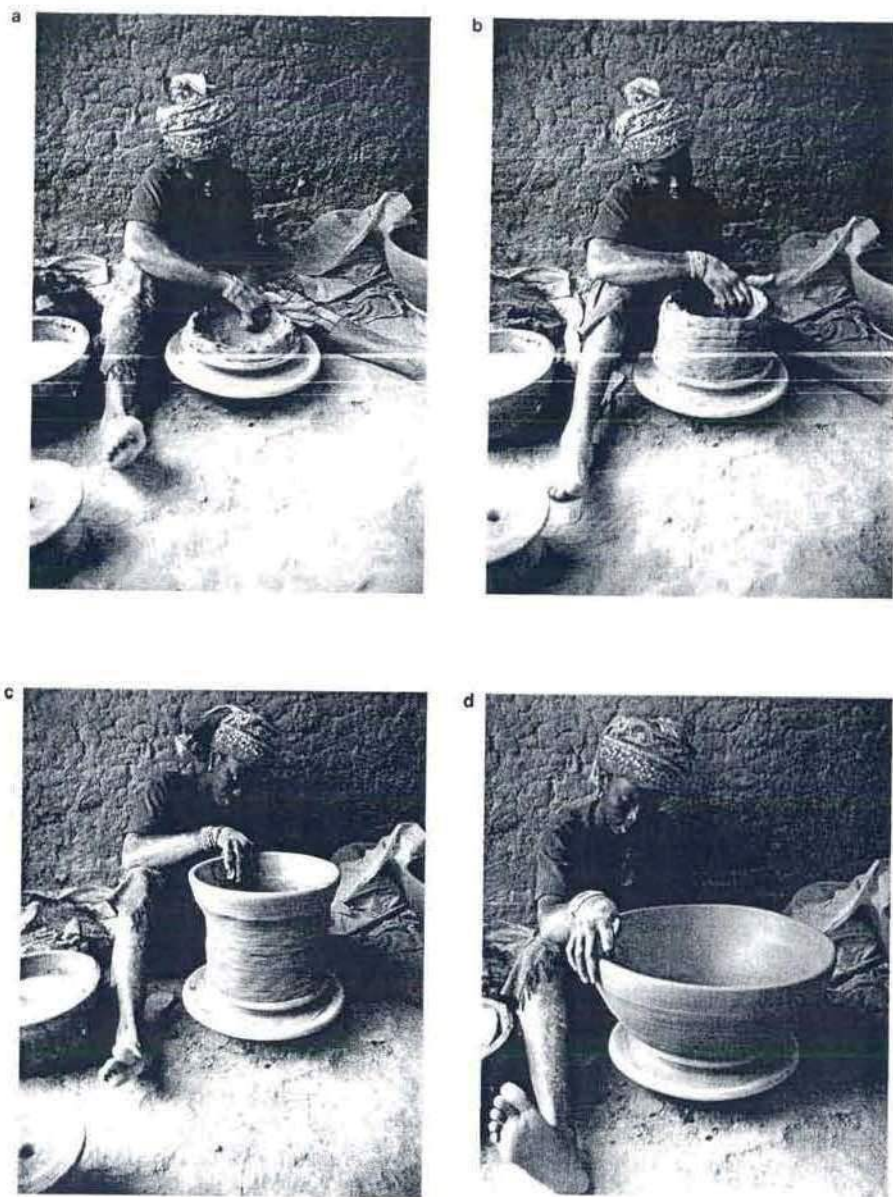
Plate 26.4 Different stages in the manufacture of a large, open bowl, using a combination of the coil-technique and a tournette (hand-operated potter's wheel), Dia, Mali 2001. a) placing of the first coil on a clay dish sitting on the tournette; b) the pot wall is then built up by the addition of further coils; c) once all the coils have been added, the vessel wall is drawn up with one hand while the tournette is operated with the other; d) the vessel walls are then drawn outwards during the final stages of the forming process. Photos: P. Lane

production in the same area, they were able to demonstrate, for instance, that the Haya and their ancestors possessed a sophisticated 'folk' understanding of the chemical and physical processes involved in iron smelting, that encompassed a knowledge of which clay sources produced the most suitable refractory ceramics, which types of reed provided the best carbon flux, how to raise the internal temperature of furnaces by 'pre-heating' the air being pumped in by bellows, and a host of other technical details. This knowledge, which on archaeological grounds has been shown to have been locally discovered rather than introduced from elsewhere, meant that the inhabitants of this part of the Lake Victoria basin invented techniques for producing low-grade carbon steel hundreds of years before similar capabilities were developed in Europe. Parallel studies conducted by Schmidt and Childs also demonstrated that the craft of iron smelting here, as elsewhere across much of sub-Saharan Africa (see Herbert 1993), was enmeshed within a complex web of symbols that focused on concerns about sex and gender, production and reproduction, power and authority.

Other predominantly processual ethnoarchaeological studies of artefact production and craft specialisation have considered such issues as the spatial and social organization of workshops (e.g. Annis 1988; Nicholson and Patterson 1985), patterns of household production and learning networks (e.g. DeBoer 1990; Hayden and Cannon 1984; Herbich 1987; Stanislawski 1977), the distribution and exchange of finished products (e.g. Mohr Chávez 1991), the causes of stylistic and technological innovation and standardization (e.g. Arnold 1985; Dietler and Herbich 1989; Longacre et al. 1988), among others. More recently, there have been productive attempts to examine the interplay between technical processes and requirements, cultural practices, and social context and meanings in the production of technical 'style' (e.g. Childs 1991; Dietler and Herbich 1998; Gosselain 1998; Hegmon 1998; Lechtman 1977).

At the core of these developments is the basic observation that objects which serve similar functions can take a variety of different forms. This suggests that while artefact form is partly constrained by functional considerations, the range of suitable forms is quite open-ended, with the result that the ultimate selection of one form out of many possible ones is a product of cultural or individual choice. Sackett (1977) has termed this type of variation 'isochrestic variation', meaning 'equivalent in use'. Careful examination of the manufacturing process involved in producing an object has the potential to reveal the logic to the sequence of decisions taken at each stage. Such sequences of technological choices are increasingly referred to as *chaînes opératoires* (Lemmonier 1986), or operational sequences. It has been suggested that cross-cultural comparisons of the different logics and operational sequences employed in a particular technique, such as potting, has the potential to reveal longer-term cultural and historical linkages between even geographically distant populations (e.g. Gosselain 1998, 1999). Moreover, as Lechtman demonstrated in her paper on Andean metallurgy which first introduced the notion of technological style (1977), the same stylistic logics to artefact production may be exhibited within several different crafts within a particular social context. Thus, in the Andean case, Lechtman noted that just as the incorporation of designs in gold and silver into the structure of metal objects is a defining aspect of local metallurgical traditions, the same principle also applies to cloth manufacture and may well relate to a wider set of cultural ideals (1993; for somewhat similar possibilities, see Collett's 1993 discussion of correspondences between the decoration of iron-smelting furnaces, pots and women's clothing in southern Africa). There is also a close similarity between these ideas and Connerton's (1989) concept of 'incorporation' as one of the primary means of social memory (the other being 'inscription'), and Bourdieu's (1977) more general notion of habitus (see Dietler and Herbich 1998). This latter concept, best described as a system of durable dispositions derived from active participation within a cultural tradition that result in members of the same social group acting in a particular way, was also at the core of most post-processual ethnoarchaeology studies of the use of space, artefact categorization and the social uses of artefact style conducted during the 1980s.

ARTEFACT CATEGORIZATION AND STYLISTIC VARIATION

The definition of style, what it constitutes, how stylistic variation might differ from variation attributable to functional requirements (Plate 26.5), the implications this has for the classification of artefacts, and what style might signal have been extensively debated within archaeology (for overviews, see e.g. Boast 1997; Conkey and Hastorf 1990; Hegmon 1998; Shanks and Tilley 1987: 86–95). The results of various
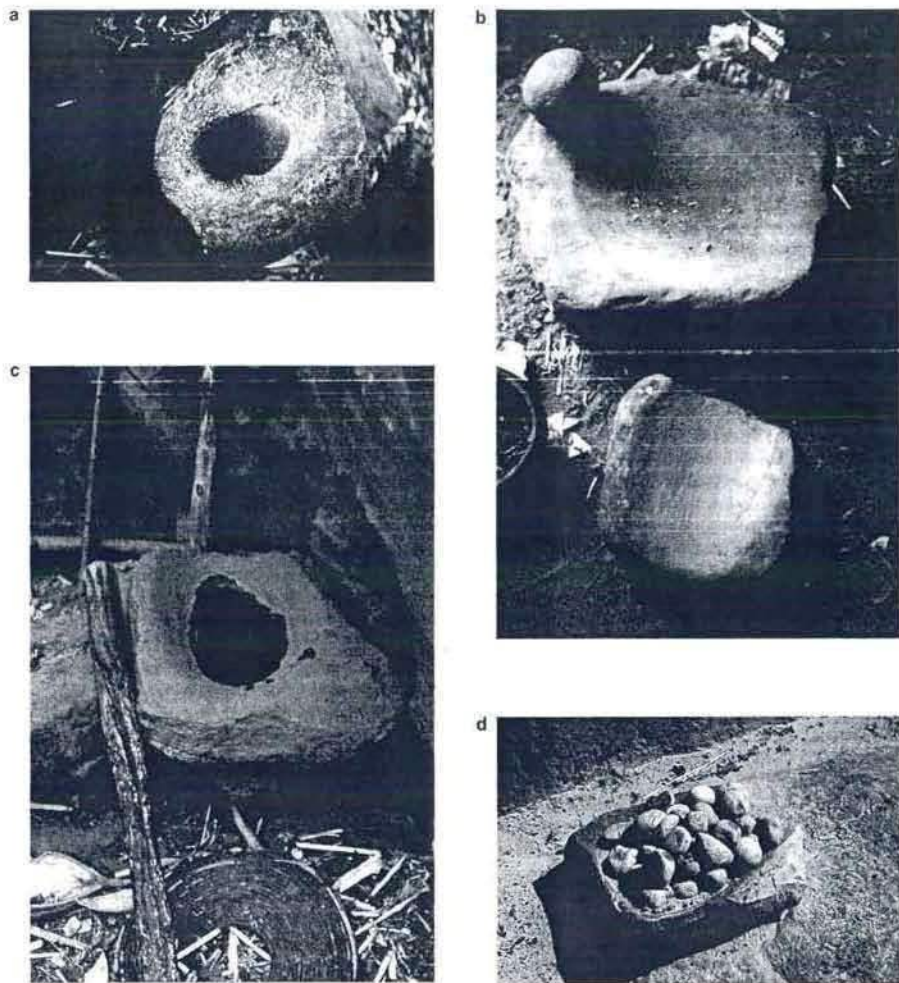
Plate 26.5 *The problems of inferring function from form alone – examples of five out of a possible eight stone Dogon artefacts with similar forms but different functions a) Upper & lower grinding stones for producing millet flour; b) top – stone anvil and hammer-stone used during potting, bottom – tobacco grinding stone; c) worn and abandoned grinding-stone for making gunpowder; d) rain-making altar. Photos. P. Lane: Banani Kokoro and Sanga, Mali, 1980–83*

ethnoarchaeological studies have contributed significantly to these debates.

Regarding artefact typology and systems of categorization, most studies have been concerned with testing the degree of correspondence between indigenous folk taxonomies and the typologies produced by archaeologists. This kind of contrast forms part of a broader etic: emic debate – the former term referring to the external observer's view and ordering of the world, the latter to the insider's own culturally constructed categories. The basic questions in this context centre on determining the extent to which the analytic categories used by

archaeologists, from which a wide range of functional and social inferences are often drawn, correspond with the lived 'reality' of the subjects of archaeological analysis, and whether it is necessary that the two should be closely similar (e.g. Arnold 1971; White et al. 1977). Miller's study of artefact categorization, specifically pot types, in a predominantly Hindu village community in Madhya Pradesh, India, also reviews the differences between his own predominantly symbolic framework for analysing the observed variation and that of the villagers among whom he worked (1985: 142–8). More significant, however, is his analysis of the role of emulation in the broader process of stylistic change. Specifically, Miller found that in this community of thirty Hindu castes plus some Muslim residents, with marked economic differences and occupational roles, the copying and appropriation of ceramic styles previously associated with higher-status groups was a particularly effective means for lower-status castes to effect upward movement within the caste hierarchy. Such copying, in turn, encouraged the elite to commission new styles for themselves from the village potters.

Similar concerns with the symbolic meanings of things and places, and how these contribute to the construction of age, gender, class and ethnic identities feature in numerous other ethnoarchaeological studies. Hodder's work on such issues among the Tugen, Pokot and Ilchamus (Njemps) around Lake Baringo, Kenya (1982b), was one of the first of this kind, and has been particularly influential. Two of his primary goals were to examine the degree of correspondence between the spatial distribution of specific ethnicities and material culture patterning, and to establish the conditions under which isomorphic correspondences occur. More specifically, whereas Wobst (1977) had argued that the greater the interaction between groups the greater the similarity in their material culture styles, Hodder found the converse to be the case in the Lake Baringo area. Thus, despite frequent interaction between the three groups, their material culture exhibited a number of distinct stylistic differences (1982b: 13–57). Rather than attributing such patterning simply to 'cultural' norms, Hodder argued that material culture styles were used strategically to maintain notions of difference between the three groups, and that in this sense material culture could be said to play an *active* role in the creation and recreation of identities. (For a contrasting example where a similarly long history of interaction between different ethnic and linguistic groups, in this case along the Sepik coast of northern New Guinea, *has* resulted in more

generalized and less sharply bounded stylistic distributions, see Welsch and Terrell 1998.)

Wiessner's study of the formal variations of arrowheads between different San groups in Botswana (1983) also examined the assumption that formal variation in material culture conveys information about personal and social identity. Whereas Wiessner found that this was indeed the case, she noted that artefact style communicated information about both individual identity – which she characterized as 'assertive style', and group identity – or 'emblemic style'. Thus, for instance, she found that !Kung projectile points differed from those made by !Xo and G/wi, and that members of all three groups could differentiate their arrows from those of others, suggesting that these items of material culture were recognized as emblems of the different socio-linguistic groups. However, informants from all three groups were typically unable to identify which linguistic groups had made the arrows they recognized as 'different'. Moreover, 'no single attribute carried information about linguistic group affiliation' (1983: 270). Among the !Kung the critical variable was size, whereas for G/wi and !Xo tip and body shape were more significant.

Larrick's analyses of spear forms and their social correlates among the Lokop section of the Samburu of northern Kenya (1985, 1986) is another useful illustration of similar issues. The focus here was on variations between different age sets within Lokop society rather than between different ethnic or language groupings. Spears are the pre-eminent symbol of warrior status and each age set has a preferred spear style. Typically, each newly initiated warrior age set adopts its own style of spear, and fashions change frequently, partly in response to changing technical needs and partly in response to more expressive concerns. As with San projectile points, Lokop 'spear style' can be read at a variety of social levels ranging from that of the individual to the entire ethnic group. However, spears alone cannot be used to define Lokop identity, not least because there is frequent borrowing of traits from other neighbouring groups for 'assertive' stylistic reasons. Contrary to commonsense expectations, these include the Turkana, who were once perceived by the Lokop to be their fiercest enemies. All of these studies, and numerous others, indicate that different artefact attributes can convey different types of meanings within any group, and that the significance and meaning content of a particular attribute can vary between groups and individuals, and across different social, spatial and temporal contexts.

CONCLUSION: HISTORICIZING AND INDIGENIZING ETHNOARCHAEOLOGY

The use of ethnographic analogies is an inescapable element of archaeology, and the past half-century of systematic ethnoarchaeological research has done much to strengthen how such analogies are formulated and applied. Their use nevertheless introduces a fundamental paradox. Specifically, by drawing on ethnographic data to aid the interpretation of archaeological remains, archaeologists necessarily transform 'the past' into something 'other' than their own world, from which they are removed not just in a temporal sense, *but also spatially*. In this way, to invoke L.P. Hartley's famous phrase, the past becomes 'a foreign country [where] they do things differently' (1953). This notion that 'the past' is somewhere from which we have escaped is further reinforced by the widespread tendency to categorize the disparate remains of past societies into some form of evolutionary framework. It is precisely such concerns that lie at the heart of the ethical dilemmas voiced by Fewster (2001). However, while her recommendation that the notion of human agency should be at the core of any ethnoarchaeological enquiry is certainly an apposite one, there needs to be a far more fundamental reassessment of what the ultimate goals of ethnoarchaeology should be.

Several possibilities suggest themselves. First, instead of searching the present for resemblances to the past, ethnoarchaeology, combined with some form of historical archaeology, could be used to examine why and how the present differs even from the most recent past. As Stahl has observed, far too often ethnoarchaeologists have assumed that the material practices they study are of considerable antiquity (Stahl 1993). Indeed, it was precisely such a belief in the time depth of so-called 'traditional' practices that initiated the growth of ethnoarchaeological research in the first place. Only rarely, however, have ethnoarchaeologists attempted to verify such a fundamental assumption, and as Stahl's recent work in the Banda region of Ghana illustrates there are good reasons as to why they need to do so, not least because of the considerable transformations effected in many parts of the non-Western world as a result of the encounter with European colonialism (Stahl 2001). Second, and in line with broader trends within anthropology, ethnoarchaeologists might aim to act more as enablers for their ethnographic subjects, rather than as interpreters of them. The narrative about iron-smelting practices given to Terry Childs by her principal Toro informant, Adyeri (Childs 2000), may well be the only example of its kind – but is surely a good precedent to follow.

Finally, an alternative (and more etymologically correct) type of 'ethnoarchaeology' concerned with how different societies ascribe historical values and meanings to the physical world and employ these material traces in their construction and representation of individual and collective memory could be developed (Lane 1996b). From this, two separate, but potentially highly connected, benefits might be derived. First, as is widely recognized within archaeology, historic landmarks, archaeological sites, monuments and individual artefacts are often used by various sections of society in their efforts to legitimize their social position or to support a particular view of the past (e.g. Gathercole and Lowenthal 1988; Meskell 1998). Such historical valuations can as easily result in the destruction of sites and monuments as in their conservation. Consequently, improved understanding of how contemporary communities in different parts of the world ascribe historical value to the physical remains of the past they encounter is of critical importance to developing appropriate cultural resources management (CRM) strategies that give due regard to local sensitivities and understandings of the past. Without such efforts, CRM policies will continue to be perceived by a great many non-Western people as yet further examples of state intervention in their affairs and the imposition of alien value systems (Miller 1980).

The second reason, only now being recognized by archaeologists working in various regions (e.g. Bradley 2002; Van Dyke and Alcock 2003; Williams 1998), is that all societies both past and present can be shown to have ascribed historical value to objects from the past. Moreover, the manner in which this is or was done has a direct consequence not only on *what* enters the archaeological record, but also *when* it enters that record, since some objects are conserved well beyond their use life precisely because they have historical value to either individuals or social groups. An obvious example is that of family heirlooms, which are curated partly as a means of sustaining the memory of an individual and so enter the archaeological record, if at all, well after other objects produced coevally with them have been discarded (Lillios 1999). Burials, hoards and storage facilities can also be considered integral aspects of the process of creating social memory, as can body ornamentation and other methods of inscribing identity (Hendon 2000).

Two further observations follow from this. First, archaeologists must begin to give due consideration to the effects the *historical* value of objects and structures can have on the formation of the archaeological record of an area. This is because decisions such as those entailing repair, modification, replacement, curation, preservation or discard are not just driven by the kind of utilitarian concerns generally emphasized by ethnoarchaeologists, but also draw on cultural understanding of the historical value of the object or building in question (Lane 1996b, 2005; Rowlands 1993). Second, archaeological study of continuities and changes in these mundane practices over the long term may well have the potential to provide insights into the nature of historical practice in past societies, and hence, if one accepts an aspect of archaeology to be 'the creation and representation of the past through material remains', how societies *in the past* practised their own kind of 'archaeology'.

NOTES

1 The term 'uniformitarian assumption' refers
* here to the premise that because past processes and events are unobservable, to learn about them we must compare their effects with those processes observable in the present that operate in comparable ways – an approach sometimes termed 'methodological uniformitarianism' (S.J. Gould 1965). However, whereas we can be confident that processes governed by the natural laws of physics, chemistry and biology operating in the past had identical consequences in the past to those observable in the present, defining universal laws of 'human behaviour' that go beyond broad generalities is far more problematic, and many would argue completely unachievable.

2 Taphonomy involves the study of the processes that affect the transformation of organic remains (bones, plants, etc.) from the biosphere to the lithosphere, with particular focus being placed on those which leave traces analogous to ones observable in the fossil record.

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