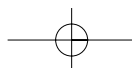
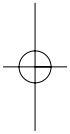


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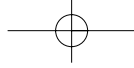
Where and When

The Archaeological Evidence for Early Social Life in Africa





Rustic Wedding: Pieter Bruegel the Younger, c. 1600 (Getty Images)



1

Kinship and Material Culture

Archaeological Implications of the Human Global Diaspora

Clive Gamble

Did Neanderthals marry? Did they possess avoidance rules and did they recognize inter-personal relationships, both vertically (descent) and horizontally (generation), that form the axes for kinship? The questions are more interesting than just speculating about the time-depth of human institutions. They raise the issue of how recognition and possession of rules and relationships might have occurred when opinion is still divided about the antiquity both of spoken language and of the symbolic codes that organized social life and its cultural transmission.

Currently it is much easier to argue that Neanderthals did not marry because we can then analyse them through links to wider systems of animal kinship. Here the language of the genes speaks volumes, at least in the mathematical demonstration of mate choice and sacrifice for close kin, but at the expense of socio-cultural phenomena such as symbolism. Anthropologists have generally resisted such approaches, arguing that kinship is culturally constructed and only in the blood because consanguinity is a cultural rather than biological concept. Kinship is about the setting up of categories of relatedness through mutually structured activities, both economic and 'symbolic', but, as James explains in the introduction above, 'crucially including a framework of approved and prohibited mating links into which newborn persons are accommodated' (p. 40). Incest taboos, for example, are less to do with preserving the integrity of the gene pool than starting at home with the principle of exogamy enunciated so clearly by Tylor, long before genetics was formalized, as 'marry out or die out'. Marriage is about social and economic relationships and kinship has to be reckoned accordingly. The importance of marriage lies less in the gaining of a wife than, as Mead (1935: 84) pointed out some seventy years ago, in the gaining of a brother-in-law. The recruitment of affines to alliances, both social and economic, is central to the process.

My purpose in this chapter is to raise interdisciplinary issues rather than provide an origins account of marriage and kinship rules. My vehicle is the social brain hypothesis (Dunbar 1998, 2003), which suggests our social lives

drove our evolutionary history as recorded both anatomically and culturally. The context in which this hypothesis is evaluated is the archaeological evidence for our emergence as a global species, which began some 60,000 years ago (Gamble 1993), associated with a recent Africa origin (Stringer and Mackie 1996). I will argue that this global human diaspora, which occurred late in human evolution, needed specifically human kinship as much as it required boats to get to Australia and the scattered islands of the Pacific. But I will also suggest that kinship structures, such as Allen's tetradic model (1998a; this volume), followed on from a gradual change over two and a half million years in the metaphorical use of material culture to express relationships and concepts grounded in the experiences of the body.

Kinship 'as-we-understand-it' was not the product of some revolution in human prehistory that produced either a Palaeolithic modern human (Klein 2000; Mellars and Stringer 1989) or, much later, a Neolithic farmer with a modern mind (Renfrew 1996; Watkins 2004). Instead, kinship emerged as a mode of establishing relatedness within the framework of a technology which was always social. Moreover, a different material basis for human identity, based on this social technology and eventually expressed as kinship, came to be recognized along a slow gradient of change.

Biological Kinship Is Not Kinship

Genealogy and kinship are currently in vogue thanks to routine Y chromosome (male-only inheritance) and mtDNA (female-only inheritance) testing to establish patterns of relatedness (<http://www.oxfordancestors.com/>), and to the Internet, which creates virtual sisterhoods and brotherhoods based on shared haplotypes. Such genetic kinship, as Nash (2004: 2) has shown, combines the security of the known and the excitement of the new. The result has been the geneticization of identity and the reduction of relatedness to a lottery of four letters, CGAT, so that 'genes are cast as keys to the essence of humanity in general and the uniqueness of each individual' (Nash 2004: 4). Our biological essence, as examined by Jones (1997), appeals to a primordial, ethnic identity contained 'in the blood' now supplemented by a genome that, we learn, 'underlies the fundamental unity of all members of the human family. . . . In a symbolic sense, it is *the heritage of humanity*' (UNESCO 1997: Article 1, emphasis added). According to Nash, this process of naturalization has been achieved by using the idiom of kinship and its components: generation, reproduction, ancestry, descent, offspring, maternity, paternity, and inheritance (2004: 25).

However, Marks reminds us that

As anthropologists have known all along, kinship is constructed. . . . So in a literal, natural sense, relatedness is just a mathematical abstraction. It has no real, bracketable biological properties. In a cultural, meaningful sense, kinship is a way of defining social networks, establishing obligations, and organizing the transmission of property across generations. (2002: 251)

Ancestors who are invoked solely through genetic relatedness do not therefore represent a biologically determined, rather than a culturally constructed, kinship. The human genome may be a concept that we all share, but it does not relate us to each other through categories of kinship that social anthropologists such as Marks would recognize. However, his declaration that 'kinship is not a genetic property' (2002: 251) clearly goes too far. Kinship does have both biological and cultural aspects, and it is not possible to eliminate the difference between them. The problem, as Allen states (pers. comm.), is that kinship straddles the gap.

As a result, archaeologists cannot assume the existence of social kinship systems even though early hominins must have possessed genes and therefore biological kinship. But if we are looking for the thread of continuity from our earliest ancestors to the present, it will not be genes that establish such relationships, but rather the existence of a framework provided by socially based technologies that have consistently been used to manufacture relationships. These social technologies (Gamble 1999: 80–7; 2007) have ranged in sophistication from the workshops of the earliest stone tools, 2.5 million years ago (Semaw et al. 1997; Stout et al. 2005) to the workstations of the Internet. Consequently, human agency has always been implicated in networks of materiality through which categories of relatedness are revealed (Gell 1998; Knappett 2005). Kinship and material culture have therefore developed together.

Two Revolutions But No Kinship

But such hybrid networks are not usually part of human origins research. Here our evolving human endowment of genes, cognition, and culture is currently debated by archaeologists in terms of either a 'human revolution' that occurred sometime in the last 300,000 years, but with strong support for 40,000 years ago from the European evidence (Mellars 2005), or a 'Neolithic revolution' coincident with farming at the beginning of the Holocene (Gamble 2007). At issue is the understanding of when we became human. Supporters of a Neolithic revolution point to the much earlier appearance during the Palaeolithic of art, burials, language, and rituals and ask why, once these gifts had been acquired, did it take upwards of 30,000 years for anything decisive to happen (Cauvin 2000; Renfrew 2001: 127)? By 'decisive', they are referring to the cultural advances brought about by a sedentary life and the added richness and complexity of symbols that then flowed. Indeed, they argue for the importance of a sedentary revolution that predated, by a few millennia, the appearance of domesticated crops and animals in Southwest Asia (Bar-Yosef 2001; Rocek and Bar-Yosef 1998). Watkins, for example, concludes from his survey of the built environment of these early mud-brick and stone villages that 'the world's earliest village communities were also the first to develop fully modern minds and a fully symbolic culture' (2004: 19). If such an extreme view was accepted, it would mean that Australian Aboriginal cultures were not 'fully symbolic' just because they were predominantly mobile hunters and gatherers.

Set against this view that settled life and agriculture made us who we are is the human, or symbolic, revolution (Bar-Yosef 2002; Klein 1995, 2000; Mellars 1994; Mellars and Stringer 1989). When judged by the long sweep of human evolution, this is a statement about human recency (Proctor 2003) that marries modern anatomy (Stringer and Andrews 1988), including genetic data, with archaeological evidence for symboling: colour choice, art, ornament, burials, and long-distance exchange (Barham 1998; Knight 1991; Roebroeks et al. 1988; White 1997). This novel cultural package was first identified in Europe, where incoming populations of Cro-Magnons replaced the resident Neanderthals (Stringer and Gamble 1993: Figure 74).

There have, however, been recent criticisms by those working in Africa (Deacon and Deacon 1999; Henshilwood and Marean 2003; McBrearty and Brooks 2000; Wadley 2001) of the significance of the European Upper Palaeolithic revolution. The evidence is compelling for much earlier instances of artefacts and sites that point to symbolic and ritual activity that is regarded as a hallmark of the modern mind (d'Errico et al. 2003). However, both groups of Palaeolithic archaeologists are united in their opposition to the notion that we became human during the Neolithic. They would therefore refute Renfrew's (1996) 'sapient paradox', which broadly translates in material terms as 'all dressed up but going nowhere for 30,000 years'. As Mellars (1990: 246) has remarked in a comparable context, the sapient paradox could equally be applied to the millennia of the Neolithic because metallurgy and writing only appeared much later during the Bronze Age.

Kinship rarely figures in discussions of either the human or the Neolithic revolution. It is not a symbolic category structuring social life that archaeologists regard as either amenable to investigation through the material evidence, or significant for understanding change in these early periods. However, along with language and symbolic representation, they would assume, if pressed, that kinship of a kind we would recognize as such did exist as soon as one or other of these revolutions ushered in the modern mind (Mithen 1996; Watkins 2004).

It therefore seems that kinship, as defined by James (see above), will never figure prominently if the main debate continues to centre on which revolution produced people like ourselves. The closest archaeologists are likely to get is through investigating concepts such as family and household, summed up, for example, in Hodder's (1990: 294) invocation of *domus*, and where in the Neolithic, the house, hearth, and pot became material metaphors for the domestication of society.

A Diasporic Species and Social Extension

There is, however, an alternative narrative concerning the archaeology of human evolution which does make space for a consideration of kinship as establishing categories of relatedness. This narrative concerns our emergence as a diasporic species with a global distribution (Cavalli-Sforza and Cavalli-Sforza 1995). It is less concerned with issues either of where we first came from, although

inescapably that was somewhere in Africa as revealed genetically (Cann et al. 1987) and chronologically (McDougall et al. 2005), or when we first settled down in Southwest Asia (Bar-Yosef 1998; Bar-Yosef and Belfer-Cohen 1989). Instead it challenges the way we conceive of ourselves and how we marshal the evidence of the past to support that view.

Cresswell (2006), for example, has pointed out that contemporary values favour the city dweller to the nomad, the resident to the refugee, and the homeowner to the tramp. He summarizes these preferences as a sedentarist metaphysics that has a long history in Western ideology. Against this background it is therefore unsurprising that the sedentary revolution has been championed in human origins research. Childe (1942: 55), for example, spoke of agriculture as an 'escape from the impasse of savagery' precisely because it allowed a sedentary life, while Braidwood (1957 [1948]: 122) dismissed Palaeolithic hunting as a time when people lived 'just like an animal' because they were peripatetic. If culture is to develop, then mobility must be tamed, a view that lies at the heart of the supposed sapient paradox (Renfrew 2001).

However, with a powerful sedentarist metaphysics it is easy to forget the singular discovery of the Age of Exploration that the entire globe, save for a few islands and Antarctica, was already populated before its rediscovery by Europeans. Moreover, the subsequent demonstration by archaeologists that this occurred late in human prehistory (Gamble 1993), but often long before farmers sent down roots, is downplayed. For example, according to Renfrew (2001: 127), the diasporas of hunters and gatherers that peopled the globe are described as nothing more than adaptive radiations.

The interesting point about the varied mobilities on land and sea that started with a global human diaspora 60,000 years ago is that it was not an immediate consequence of either a modern-looking anatomy with a large brain, dated to between 190,000 to 160,000 years ago (Clark et al. 2003; McDougall et al. 2005; White et al. 2003), or even symbolic representations, as seen, for example, in the surface alteration and use of ochre 80,000 years ago at Blombos Cave, South Africa (Henshilwood et al. 2002). Both of these instances of innovation and change occurred when *Homo sapiens* was still an Old World species and, moreover, limited within it by latitude, altitude, sea level, and landmass size. Moreover, the geographical distribution of the genus *Homo* was essentially the same over almost two million years of local speciation and multiple dispersals out of Africa and back again (Dennell 1998, 2003; Gamble 2001; Lahr and Foley 1994; Rightmire 2001).

The evidence that human mobilities had changed 60,000 years ago begins with the appearance of people in the Pleistocene continent of Sahul (Australia, New Guinea, and Tasmania linked by low sea levels) (Roberts et al. 1990; Smith et al. 1993). The 60,000 years that followed represents about one per cent of the time since the hominin/chimp split calculated using the molecular clock (Jones et al. 1993), or three per cent since the appearance of the genus *Homo*. Yet in that time some three-quarters of the earth's surface was inhabited for the first time. This included not only Sahul but also the interior of Siberia, the Arctic, North and South America as well as the islands and archipelagos of the Indian and Pacific oceans (Gamble 1993). Furthermore, when people

reached Australia, the evidence shows that they immediately settled the desert interiors at a time in the Pleistocene when the red centre was hyper-arid compared to today and population numbers were extremely low (Smith 1989, 2005).

The mobilities that resulted in a global diaspora were assisted by new social technologies, including boats to cross oceans and domestic animals to pull sleds across Siberia. But these innovations (Fagan 2004; Troeng 1993), if indeed they were such, cannot be the only answer to the particularities of the process, just as labelling it an adaptive radiation explains neither the timing nor the sequence of landfall.

The global human diaspora that began as an African exodus was instead made possible by the extension of social life that depended on concepts that related people when they were apart. Elsewhere (Gamble 1999) I have examined the process using ego-based networks that are differentiated in size (Table 1.1) by the variable use of three resources – emotional, material, and symbolic (Toren 1999: 111; Turner and Maryanski 1991) – for the negotiation of social relationships.

The point about the extended network is that it differentiates the human from the primate community by allowing a social life that is not dependent upon co-presence. Such immediate and usually frequent interaction is the hallmark of an individual’s intimate and effective networks (Table 1.1), and, in the case of the former, accounts for their very small size and the intense relationships that are constructed. By contrast, the extended network represents a release from proximity (Gamble 1998; Rodseth et al. 1991). By this phrase I mean that human trait of distributing our social selves across time

Table 1.1 Interactions and networks

<i>Ego-based network</i>	<i>Principal resource</i>	<i>Size</i>	<i>Sample descriptors of modal size</i>
Intimate	Emotional affect	3–7	Support clique Significant others Nuclear family
Effective	Material exchange	10–23	Sympathy group Colleagues and friends Minimum band, local group, clan
Extended	Symbolic ‘positive style’	100–400	Friends of friends Dialect tribe, connubium, maximum band
Global	Symbolic ‘negative style’	2500	Non-significant ‘Others’ Linguistic family

Sample descriptors for small-world societies are taken from the hunter-gatherer literature. The modal group sizes have recently been re-examined (Zhou et al. 2004) and a discrete hierarchy of modular group sizes has been recognized. A scaling ratio of three has been identified between these levels, but as yet is not explained, although it is possibly related to the processing of social proximity by the human brain.

Source: After Gamble 1999: Table 2.8 with references

and space, and where extended absence, the essence of ocean voyaging, does not necessarily result in the collapse of an individual's social networks. Absence is not only tolerated but encouraged (Helms 1988), and is increasingly celebrated as a nomadic metaphysics (Cresswell 2006).

Extension, however, would not be possible without social categories that were agreed, understood, and enacted. We may consider these in simple terms as 'friend', 'enemy', and 'stranger', and such categories, and the concepts that underpinned them, defined the appropriate response for those arriving and for those meeting the arrivals. Burch (1975: 25) provides a vivid, if extreme, example from the Arctic – one where failure to establish a prior relationship, however fictitious, could result in death when parties of hunters met.

The human global diaspora required novel technologies to cross oceans and inhabit deserts. But they also needed social categories such as friend, enemy, and stranger to overcome the requirements of co-presence by stretching relationships in time and space. Therefore, both the innovations, such as boats, and the relationships that made dispersal an intentional project were threads in well-spun networks of what I referred to earlier as a social technology. As a result, there would have been no substantial geographical dispersal 60,000 years ago without technical innovation and no social extension without the appropriate categories that related people when apart. Consequently, the change to our becoming a global species would not have happened at this time unless both aspects were involved. It is this closely entwined cable of technology and social categories that raises the question of what part kinship played in the human global diaspora.

The Social Brain, Language and Kinship Categories

The categories of friend, enemy, and stranger are not kinship terms. They do not carry the additional symbolic associations that give us aunts, cousins, and brothers-in-law, and which persist as categories irrespective of any friendship or enmity that might be felt towards individuals classified by such terms. As a result, such kinship terms will not necessarily coincide, as might be expected, with either an individual's intimate or effective network (Table 1.1) if they require either no, or little, emotional and material capital for their definition. The difference lies between a bottom-up approach to social interaction, outlined in Table 1.1, and the top-down categories of kinship, where, for example, a tetradic structure *precedes* the individual. These approaches can be further distinguished, and also resolved, by recognizing that the resource-based networks depend on negotiation to determine membership while kinship structures are determined by rules of recruitment. Negotiation to form alliances and cliques is a primate trait, and hence ancestral, while formal recruitment to pre-existing categories is not.

So where do kinship categories and the concepts they depend upon come from? Fox (1967: 31), for example, regards gestation, impregnation, domination, and the avoidance of incest as basic to all social organization and the base onto which systems of ideology, concerning true and proper relationships, are grafted.

More satisfying is James's discussion of the language and logic of the reproductive game. Using an analogy of section systems as dance teams (following Allen 1982), she makes the point that kinship categories are about recruitment through marriage and alliance (James 2003:159–60). Instead of either conjugal families or descent groups providing an inflexible model of affiliation, what exists are socially created teams of individual recruits. Moreover, it is the distinction between parent and offspring that generates these independent sections, or teams within each generation moiety. Such a recruitment model, as Allen (1998a) shows, presents the individual with a number of restricted choices because endogamous generation moieties reduce by half the choice of socially sanctioned mates in a society. Furthermore, it suggests that social life might once have been organized according to clear game-playing principles, as exemplified in the performance of dance and other ceremonies that embody exchange.

But while these models recognize performance, they also emphasize how dependent kinship categories are on language. The position is well expressed by James, Allen, and Callan (2005):

The evidence strongly suggests that some specific rules of the kinship game based on give-and-take are very ancient. It is possible that kinship terminologies, reflecting such rules and patterns, may be rooted in the very beginnings of language. Out in those primeval forests, you need to be able to talk about your mother in law, and who your daughter might marry, as much as about the need to find more witchetty grubs.

It seems to make little difference if you are extolling either the propriety of the incest taboo or the logic of cross-cousin marriage: it is not easy to imagine how there could be social organization based on kinship without language (though see the arguments of Barnard, and of Callan, in this volume). It is undeniable that the variety of human social forms known today, across which kinship systems provide a measure of both their diversity and regularity, is reflected in linguistic form.

But how does this emphasis on language differ from the geneticization of identity discussed above? If some anthropologists are so emphatic that 'kinship is not a genetic property' (Marks 2002: 251), then what makes them so sure that it is primarily a linguistic one? Kinship has many aspects: lexical, jural, statistical, and behavioural. Which, if any of them, has primacy is relevant only when questions are asked about origins (compare Allen and Barnard in this volume, for example). As an archaeologist, I feel more comfortable with the proposition that kinship was never simply linguistic or genetic in origin, but also material.

The alternatives can be evaluated, rather than asserted from different disciplinary perspectives, by examining the timing of the 60,000-year-old human global diaspora. Was such a recent date in human evolution dependent on the late appearance of language (e.g. Noble and Davidson 1996) that produced kinship categories which permitted social extension? Or were technological innovations required to make geographical separation possible?

Table 1.2 Community size predictions and language outcomes

<i>Age in millions of years</i>	<i>Representative taxon</i>	<i>Community size</i>	<i>Communication</i>
<0.1	Modern humans	150	Metaphor and technical
0.3	Neanderthals	120	Socially focused 'gossip'
<2	<i>Homo ergaster</i>	100	Vocal chorusing
5	Australopithecines	70	Primate grooming

Source: After Aiello and Dunbar 1993; Dunbar 2003

It is here that the social brain model can be brought into play. While it does not deal with the forms of social organization, it does address the consequences of changes in community numbers as predicted from a primate sample comparing brain and group size (Table 1.2).

The assumptions behind this developing pattern are that hominins benefited from living in larger communities, and that the benefits of community expansion selected for encephalization. These benefits might have been better defence against predators, increased foraging opportunities and reproductive success as measured against other smaller hominin communities. But we can go further, as argued by Dunbar (1993, 1996a, 2003), if we identify some principles for the regulation of these communities.

The consequence of increasing community size is that the primate mechanism of grooming which traditionally regulated relationships was no longer possible due to severe time constraints. With such strong selection for increasingly dense and complex social communities, the development of language from vocal chorusing becomes a strong possibility (Table 1.2). Words now supplemented fingers as the means to create socially negotiated bonds.

But the categories of social life were not always constructed using resources based on language because, as the social brain model indicates, coalition and alliance did not always need language to proceed (Table 1.2). Furthermore, data on hominin and primate encephalization appear to point to the presence of language long before the 60,000-year-old human global diaspora. Half a million years ago, group sizes show a dramatic increase in the numbers of people to be socially integrated (Figure 1.1) and selection for language would have occurred (Aiello and Dunbar 1993).

From the perspective of the individual, if we accept the social brain model, there would have been very different opportunities in hominin evolution for the recruitment of partners to those constructed kinship categories as championed by Allen (1998a, 2005) and James (2003). Using the analogy of the dance with its partners drawn from discrete categories, we see that the impact of language on recruitment to kinship categories will in the first instance be directed at the extended and global networks (Table 1.1) that an individual constructs.

Once language was present, it transformed negotiation in the smaller scale intimate and effective networks. However, even though language was selected

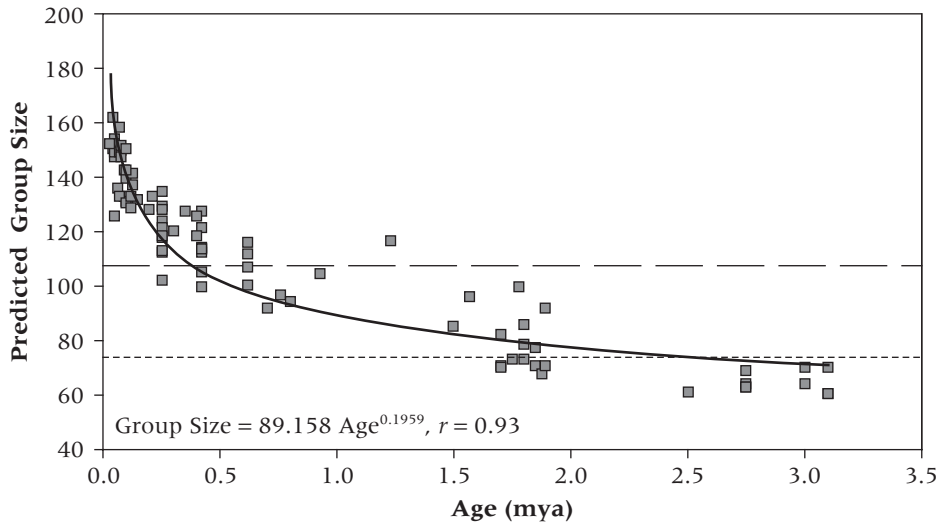


Figure 1.1 Fossil data on increasing brain size and group size during hominin evolution. Data reworked from Aiello and Dunbar (1993) with additions by Grove and used with permission. The implications of the data are assessed against primate grooming times, and where a limit of 30% (dashed line) is regarded as a daily maximum. This threshold was reached at least half a million years ago and hence indicates the appearance of novel forms of integration of which language is the most likely (Dunbar 1992b, 1993). The 20% threshold (dotted line) represents most primate grooming times. Using Aiello and Dunbar’s (1993) equation, the lower grooming time threshold corresponds to a group size of 72 and the higher to 107

for by larger groups, the tiny intimate network continued to exert influence disproportionate to its size. As Milardo comments, the intimate network with a cross-cultural average size of five has a significant impact on an individual’s decisions, psychological security, and network building in comparison to ‘the sheer number of people contacted in the routine business of daily living and the breadth of opportunities they present or deny in terms of opportunities for social comparison, companionship and access to scarce resources’ (1992: 455).

However, estimates of group size from the social brain model (Table 1.2) suggest that during earlier periods, recruitment, either to negotiated networks or to kinship categories, was from much smaller community sizes of hominins than are found today. In network terms (Table 1.1), these correspond to the intimate and effective networks and only to the lower end of the extended network (Gamble 1999). My point is that recruitment to some social categories, whether network- (Table 1.1) or kinship-based, was an ancestral trait and not necessarily dependent on the appearance of language. Neither does the appearance of language account for the global human diaspora 60,000 years ago since its presence is indicated at much earlier times. The question is whether formal recruitment to kinship categories represents a form of social extension that led to a global diaspora.

Material Kinship

If early hominin categories of kinship were not primarily linguistic, then what was their conceptual basis? Elsewhere (Gamble 2004a, 2004b) I have argued that the archaeological evidence which informs us about human evolution was structured by the use of material metaphors derived from the body. In particular the solid metaphors of *containers* and *instruments* (Table 1.3) derive their symbolic force from the head/trunk and limbs, respectively.

Anthropologists have consistently stressed the metaphorical use of material culture, and the house has proved an especially potent form that embodies social relations in architectural form (Bloch 1998; Carsten and Hugh-Jones 1995; Gell 1998: 252–3). By contrast, archaeologists have been more reticent in exploring the metaphorical connections between artefacts and social forms (but see Chapman 2000; Hodder 1990; Tilley 1999; Wengrow 1998), preferring instead the more familiar language of analogy and homology (Wylie 2002).

The purpose of metaphor, whether linguistic or material, is to understand and experience one thing in terms of something else (Lakoff and Johnson 1980: 5). The important word in this definition is *experiencing*, since Lakoff and Johnson argue that linguistic metaphors are not derived from cognitive processes alone. Our experience of the world depends on our bodies and our senses as well as our minds, and any division is unhelpful.

The body is the ground or anchor by means of which we locate ourselves in the world, perceive and apprehend it. The centre of our own existence is always our body, as an axis from which spatiality and temporality are orientated: the human body *inhabits* space and time. Rather than mirroring the world, speech can be conceived as an extension of the human body in the world, a kind of artefact, by means of which we extend ourselves in the world, gain knowledge of it and alter it. Metaphor is an essential part of this process. Cognition is essentially a process of seeing something *as* something and this is the core of metaphorical understandings. (Tilley 1999: 34)

Metaphors allow us to express and categorize moods, emotions, relationships, and opinions through the physical experience that we have of the world, and this can be achieved through material culture as well as language and music.

Containers and instruments existed as solid, material metaphors, long before language elaborated on this manner of experiencing the world. Even without

Table 1.3 An embodied classification of material culture

Instruments (limbs, digits):	knives, sticks, pestles, spears, ploughs, arrows, drills, chisels, axes, shuttles, looms, needles, chop-sticks, jewellery, brushes, pens, wheels, long-bones
Containers (head and trunk):	bowls, pits, houses, barns, caves, pots, baskets, bags, quivers, mortars, blowpipes, rifles, clothes, moulds, jewellery, graves, tombs, masks, skulls

language, material culture, referenced to the body, supplied concepts for locating individuals in their social and physical worlds.

The reason for this is straightforward. Metaphors deal with relationships rather than rational assessments. For example, we cannot 'see' a concept such as the soul but that does not stop us from using an embodied metaphor to declare that 'the eyes are windows to the soul'. The metaphor is grounded originally in bodily experience rather than a rational judgement divorced from such an interpretive framework. I would argue in the same way that the cultural construction of kinship is metaphorically based on our bodily experiences rather than derived from any supposed rationality of the genes.

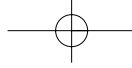
If, as discussed earlier, we focus on kinship as recruitment to culturally significant categories, then the metaphor of containment assumes particular significance for material culture. Many linguistic metaphors depend on the experience of being physically contained (Lakoff and Johnson 1980: 29–32), and the same cognitive approach to forming concepts can be extended to the material world.

For example, artefacts, in the form of either containers or instruments, acted metaphorically at times of community fusion to create social categories by referencing these material proxies, for example masks, rattles, drums, and percussion sticks, to the bodies of those engaged in the 'dance', and indeed to the organized shape of the dance space. It was at these gatherings that Durkheim's notion of 'effervescence' (Allen 1998b: 150) – forces that transcend the individual – emerged under the stimulation of rhythmic, coordinated action, dance, and music. Furthermore, containers and instruments can be traced through the social technologies of the past 2.5 million years since stone tools first appeared (Semaw et al. 1997; Stout et al. 2005).

But while containers and instruments have always existed as material metaphors, the artefactual record of the Palaeolithic is dominated by the latter. Containers are often made of perishable materials – bags, baskets, and clothing – and this has prejudiced archaeologists in their appreciation of the most ancient societies (Gamble 2004a). However, containers were always present in the form of bodily actions such as an embrace or an encircling dance that might leave nothing more than a well-stamped circle in the sand, and both examples can be described as an architecture without walls.

From this standpoint, we see how the long-run history of human technology records a changing emphasis regarding the use of social concepts to express relatedness. The metaphorical idiom in which these were most commonly articulated shifted over 2.5 million years from instruments to containers and with them changed the material basis of human identity (Gamble 2004a, 2004b). The gradient is most clearly seen in the move from implements to architecture.

But where does this leave kinship? I would suggest that Allen's tetradic model with its rules that govern recruitment and marriage is in fact primarily a material rather than linguistically based metaphor. Tetradic kinship is a container with four compartments. The partitions may not have architectural form, although this is not impossible, but rather they depend upon the activities of the effervescent gathering (Allen 1998b), those dances and rituals, to divide in such a manner that social life persists away from the concentration



of community members. In other words, this was how the constraint of an individual's 'presence' for the *re-production* of social categories was transcended so that social relations could be stretched across time and space (Giddens 1984: 35): the release from proximity (Rodseth et al. 1991: 240) was achieved. Where social life was metaphorically expressed through instruments as material proxies for social categories, there was always a limit to the social and spatial extension of relationships. Since kinship categories are about definitions and rule-governed boundaries that rely on the idiom of the container, then it is expected that the global human diaspora after 60,000 years ago coincides with material metaphors expressing new relationships of boundedness. Boats and houses and well-dug graves now acquired importance, and, in time, sets of containers such as pots, baskets, villages, and towns came to dominate the metaphorical realization of the social landscape just as language now explained action.

Conclusion: Did Neanderthals Marry?

Social extension lies at the heart of the fundamental change that led to humans becoming a single hominin species with a global distribution and a language to order social relationships. But how did we become so culturally diasporic? As indicated by both the social brain hypothesis and the archaeological evidence for social technologies, we had language, a variety of visual displays, large communities, and environmental skills and knowledge from well before the start of the global journeys that began with the colonization of greater Australia 60,000 years ago. So why was the release from proximity delayed to such an extent? This is perhaps where a part is played by kinship, in the sense used by anthropologists with its recruitment to culturally determined categories, constrained by language.

I would suggest that Allen's (1998a) tetradic structure generates the rules not only for sociocentric kinship systems, but also for diasporic extension in a particular type of geographic space as well as time. The basic motor of demographic fission and fusion for hominin social organization seems inescapable, especially for Old World hominins who moved into northerly, seasonal latitudes. The key, as Allen (1998b) suggests, is the effervescence that comes from those moments of concentration and heightened interaction when emotional and material resources are literally fused into a social form. Since Durkheim's day, effervescence can be measured through the endorphin rush for those participating in the varied activities at such gatherings and where social behaviour is rewarded with emotional pleasure (Dunbar 2003). Any 'teams' that might have emerged at these times would not be random because what defined them was the distinction between parent and offspring. According to Allen, child-exchanging moieties were the first phase in building a tetradic structure, followed later by the splitting of each moiety into partner-exchanging sections. Allen's point is that this distinction provided the basis for the section system and was available for re-enforcement through ritual at social gatherings. However, the key concern is that 'identity and membership endure from one period of concentration to the next' (this volume, [p. 110]). Allen contrasts the effervescence

of community fusion with the ordinary life of the fission phase. For example, when gathered together, Neanderthals might have been social in the sense of marriage and descent according to the tetradic model but pre-social, in Allen's terms, when apart from each other. I would suggest that it was here that the line between a biologist's notion of pair-bonding and an anthropologist's understanding of marriage becomes blurred. In my terms, Neanderthals had effective networks (Table 1.2) with classifications such as in-laws, thereby satisfying Mead's (1935: 84) understanding of the purpose of marriage. But these categories did not vire to their extended networks, where only strangers were defined, and so pair-bonding is a more appropriate description.

If correct, this interpretation suggests strong selection to occupy those habitats with resources that allowed more opportunities for fusion and social interaction rather than environments that required frequent fission and relative isolation. Neither ocean voyaging, nor living at population densities of one person per 100 km² – whether in hot deserts such as the Sahara or cold ones like Siberia – were conditions under which people can have preferred to live, even though in the case of Neanderthals they had language (Table 1.2). But more important than either language or their physical anatomy that classifies them as a separate species are the material metaphors that structured their experience. Neanderthal worlds were dominated by instruments rather than containers. A concept such as organized mating, and the recruitment of children to social categories, was not prevented by the lack of language, but it was limited by the structure of extended inter-personal relationships mediated by a social technology. It was not that material categories such as containers did not yet exist, but rather that their authority, as the means by which concepts of relatedness were produced, still had to develop relative to instruments as a much older material proxy for embodied relationships.

Hence three-quarters of the globe remained unoccupied by hominins until the process of expansion began 60,000 years ago. Kinship, which structured this intentional social process, is therefore the product of both material and linguistic metaphors. This conjuncture explains the timing late in human prehistory and indicates ways of forming the categories of social life that rely neither on genetic advantage nor on an exclusive facility with words, but instead on the power of things.

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