When Individuals Do Not Stop at the Skin

Barnard, A 2010, 'When Individuals Do Not Stop at the Skin'. in R Dunbar, C Gamble & J Gowlett (eds), *Social Brain, Distributed Mind*. vol. 158, Proceedings of the British Academy, Oxford: Oxford University for The British Academy, pp. 253-272.

When individuals do not stop at the skin

ALAN BARNARD

Abstract

This paper examines contemporary hunter-gatherer societies in Africa and elsewhere in light of the social brain and the distributed mind hypotheses. One question asked is whether African hunter-gatherers offer the best model for societies at the dawn of symbolic culture, or whether societies elsewhere on globe offer better models. The paper argues for the former.

Theoretical notions touched on include sharing and exchange, universal kin classification, and the relation between group size and social networks. Reinterpretations are offered of classic anthropological notions such as Wissler's age-area hypothesis, Durkheim's collective consciousness and Lévi-Strauss's elementary structures of kinship. The author also discusses his theory of the co-evolution of language and kinship through three phases (signifying, syntactic and symbolic) and the subsequent breakdown of the principles of the symbolic phase across much of the globe in Neolithic times.

INTRODUCTION

'When individuals do not stop at the skin' has become a common notion in psychology, in sociology, in anthropology and even in archaeology. In the last instance, for example, Clive Gamble and Martin Porr have discussed the idea of an individual in an environment which includes both material objects and other individuals. They have argued for the definition of the individual as 'a social actor constituted by his/her relation to these other individuals' (Gamble & Porr 2005: 10). This notion of the individual, rather than individual as *agent*, is the one I want to explore in this paper.

I will examine this idea in ways that I think can throw light on human evolution, especially with regard to its relation to notions like culture, community, kinship, and communication. My examples are drawn mainly through my own experience of field research among southern African hunter-gatherers and semi-hunter-gatherers and their neighbours. I want to look too at what I see as an unattributed background to the distributed mind hypothesis which lies in social theory. I want to bring this together with aspects of Robin Dunbar's extended brain hypothesis (e.g. Dunbar 1998), which forms one of the two bases of my own recent theory of the co-evolution of language and kinship.

THE COHERENCE OF CULTURE-BEARING SOCIAL FORMATIONS

Boyd and Richerson on 'culture'

In *The Origin and Evolution of Cultures*, Robert Boyd and Peter Richerson have collected a wonderful set of their own papers, written over a thirty-year period but all arguing a single thesis. For Boyd and Richerson, culture is part of human biology, but

operates not only directly through biological mechanisms but also by analogy to them. Let me mention two of the papers in the volume.

In the first, they consider 'Why culture is common, but cultural evolution is rare' (Boyd & Richerson 2005 [1996]: 52-65). They point out that cultural variation and cultural learning occur in a number of animal species, from chimpanzees to pigeons, but that only in humans does accumulated cultural change regularly lead to the evolution of behaviour beyond that which could be invented by an individual. Their argument is short, but it is complex. If I may change their terminology slightly, they suggest that some form of socially-conscious learning, through observation, imitation and the deliberate transmission of ideas, is necessary to build culture. All this requires that individuals possess a *theory of mind*: the capacity to understand that others may have different ideas in their heads from oneself. From this, cultural evolution follows: the abilities to make a better tool, tell a story or elaborate on one, draw a picture or see a picture and understand. I agree with Boyd and Richerson, and would go further than they do. Because of the integrated nature of cultural domains (kinship, religion, and so on), after a certain stage of cultural sophistication, cultural accumulation makes cultural evolution virtually inevitable. What that stage of cultural accumulation is, must remain debateable. Presumably too, change may occur either gradually or in revolutionary transformations.

In the second paper, written with colleagues Monique Borgerhoff-Mulder and William Durham, Boyd and Richerson (2005 [1997]: 310-36) pose the question: 'Are cultural phylogenies possible?' Through analogies with biology, they propose four hypotheses relating to the possible reconstruction of such cultural phylogenies. (1) Cultures as 'species', either isolated from each other or so structurally coherent that the borrowing of traits is limited. (2) Cultures as integrated but hierarchical systems, with peripheral elements that may be borrowed and core elements that will not be. (3) Cultures as assemblages, each coherent, but none easily definable as a core domain

or a peripheral one. (4) Cultures as collections of things, operating without the functional coherence of a hierarchy of domains (Boyd & Richerson 2005: 317-19).

My own vision of culture, which I argued in *Hunters and Herders of Southern Africa* (Barnard 1992), is similar to the second of these, with core elements and peripheral, and in my view with core elements shared with related cultures. In other words, although I now question the degree to which it is useful to think of 'cultures' as countable units, I believe that entities such as Khoisan culture, Australian Aboriginal culture, or Lowland South American culture, or even Western culture, each have within them not only core elements but also underlying structural principles. These underlying structural principles, not random sets of traits, are what distinguish one culture complex, culture area, or ethnographic region, from another. Usually, there will be a point of common cultural origin, but convergence, with new shared core features, is also possible—as in what some linguists call a *Sprachbund* or linguistic area (e.g. Güldemann 1998).

Cultural structures in kinship

Two Khoisan individuals may live in different countries, thousands of miles apart, speak different languages, and practise different subsistence activities, but they may share the same understandings of how to classify each other and behave towards each other through shared kinship ideology and its principles, like the joking/avoidance dichotomy, the alternation of generations, the principle of universal kin classification, and the rule 'When in doubt, treat a friend as a "grandrelative"'. Among Khoe-speaking Central Bushmen or San, these are derived in part from common principles of Khoe kinship, but shared elements also figure typically in other hunter-gatherer societies and are found among non-Khoe Khoisan like Ju/'hoansi

and !Xóõ. (Khoe is a subset of Khoisan, and includes both Khoekhoe herders and Central Bushman or San hunter-gatherers.)

More subtly, structural convergence and the accumulation of peripheral features may alter the ways in which underlying principles are played out. I have argued, for example, that when some hundreds of years ago a Khoe system known as Naro (Nharo) borrowed Ju/'hoan (!Kung) personal naming practices, the relevant kinship term was slotted into the structurally-different Naro system to replace two previous Khoe terms (Barnard 1988). The naming practice, through which Ju'hoansi and Naro receive the names of senior grandrelatives (grandparents or, loosely, uncles/aunts) and trace kinship through names as if namesake equals 'self', renders the previous senior/junior distinction, still found in all other Khoe systems, irrelevant. I did fieldwork with Naro, and my Naro name is !A/e (in Nguni-based Naro orthography, spelled Qace). If I meet another !A/e, I call him 'grandfather' or 'grandchild'. It is immaterial whether he is simply a namesake, or (if I were a Naro) my real grandfather, cross-uncle, cross-cousin, cross-nephew or grandchild. These genealogical positions are terminologically all the same—the Naro category I refer to in English as 'grandrelative'.

At least one cultural domain apart from language, namely kinship, is so structured that it always forms a whole (cf. Bickerton 1998). You will never find, anywhere among *Homo sapiens*, half a kinship system. You will of course find systems in transition, but they always seek stabilization. Partly, this is due to the principle of uniform reciprocals. In any system, if I call someone, say, 'nephew' or 'niece', they will call me 'uncle' or 'aunt'. 'Father', 'brother', or 'son' (or their female equivalents) are not options. We are born into kinship structures, and these more than any other cultural realm both constrain our behaviour and define us as individuals.

This principle is even more true in hunter-gatherer societies than in others, because almost invariably such societies possess universal kin classification: every

member of society stands in a precise kin relationship to every other (Barnard 1978). The mechanisms will vary from place to place: egocentrically through friendship or name relationships in Africa, or socio-centrically through moiety and genealogical level in South America, or through moiety, section or subsection membership in Australia. But in such systems, there is no such thing as non-kin. The real test of universality is classification of outsiders. I am not Naro and therefore have no Naro genealogy, but through my name and my namesakes in their genealogies, every one of the 15,000 Naro can, and must, classify me individually as belonging to some category in relation to themselves. Particularly for opposite-sex people, this determines whether to behave in a formal way (e.g. parent/child or brother/sister), or informal way (e.g. grandrelative or husband/wife)–how close to sit, whether to tell rude jokes or not, and so on. If, for example, someone's father-in-law is called !A/e, the fact that I happen to bear that name, even though I am not really a Naro, means that they will classify me and treat me as if I were their father-in-law. (If I were actually a Naro and therefore had a Naro genealogy, and I were the older, I would do the classifying and they would reciprocate appropriately.)

Finally, it is worth recalling that where everyone is kin, possibly no-one is structurally privileged (in terms of social category) for the kind of sharing that we might think of as characterizing kin relations in other kinds of society. Of course, Khoisan hunter-gatherers, like anyone else, recognize the difference between close kin and distant, but they also have other mechanisms to enable the redistribution of resources. The best known, though not the only one, is the relationship of delayed balanced reciprocity known as *hxaro* (Wiessner 1982) which transcends kin category. It is, in a sense, quasi-kinship by choice. Ironically, *hxaro* (or //*aĩ*, as some groups call it) is not quite unique to hunter-gatherers, and not found among the majority of Bushman groups. Yet for those groups that practise it, it is a highly effective social and economic tool. Individuals choose their partners and define their place in the

world according to their partnerships, which in turn allow access to the resources which their partners own.

CULTURE, COMMUNITY AND LOCAL GROUPS

Ernest Gellner once defined ‘culture’, and defined it in two quite different ways. In its more abstract sense, he argued, culture is ‘a system of constraints’ analogous to language, which in turn is itself ‘a system of prohibitions’ (Gellner 1989: 515-519). In both cases, language and culture, our predisposition for acquiring and adhering to such limiting behaviours is part of what makes us human. In its more specific sense, Geller reasoned, culture is ‘what a population shares and what turns it into a community’ (1989: 515), while a community is simply ‘a population which shares a culture’.

Locality and community

The group that Robert Layton and Sean O’Hara (this volume) call the ‘community’ is possibly the most socially important unit for hunter-gatherers—in the present or in prehistoric times. Essentially, this is the unit which is often in the southern African literature called the ‘nexus’, or what I have called the ‘band cluster’. If it aggregates seasonally, it is what North Amerianists sometimes call the ‘maximal band’ or ‘macro-band’. It is larger than the ‘band’, ‘camp’ or what Australianists used to call the ‘horde’, but smaller than what is considered in traditional Australianist terminology a ‘tribe’, or elsewhere for hunter-gatherers a ‘society’ or ‘speech community’. The latter, larger unit is more akin to Gellner’s idea of a ‘community’. In my primary fieldwork area in central-western Botswana, the speech community is the people who speak

Naro. The band cluster, or community I worked in, is N//oa//xai, and the camp or band location I lived in for most of my early fieldwork was called ≠Aã. During my one-year stay at ≠Aã in 1974-75, the population varied from about 20 to 25. On return visits I found population size down to zero, in 1979, and then up to about 25 again in 1982. None of the people of ≠Aã in 1975 had returned in 1982, although I caught up with several of them in nearby locations. When I visited the area in 1995, ≠Aã had again been abandoned, but individuals who had lived there in the 1970s were located nearby.

In fact, ≠Aã was, and is, a specific location—more permanent in residence than what we might usually want to label a 'camp' but much more fluid in composition than what we tend to think of as a 'band'. Meyer Fortes's (1958) idea of the 'developmental cycle of domestic groups' comes to mind. Working with Ghanaian agriculturalists, Fortes deduced the temporal patterns that must lie behind what the fieldworker sees. The duration of the cycle, from nuclear family compound, to extended family compound, to death and division, and so on, might take 40 or 60 years. The ethnographer, though, might be there for just two years, and must recognise that the different observed social units in fact represent different points in a temporal sequence: that one over there will become like this one over here in 15 years, and then split to become two units like those over the hill. In other words, the dynamics of group structure in, say, a 60-year cycle cannot be observed in one or two years in the field, but must be inferred. Through deduction, then, the seemingly random movement of individuals on the ground becomes the temporal pattern in the ethnographer's mind.

One thing that interests me here is whether hunter-gatherers conceptualize their social units in terms of such temporal patterns. The evidence of ethnography, for example on the Ju/'hoansi (Marshall 1976: 156-200; Lee 1979: 333-369), suggests that they do. They know the history of their own individual movements between locations, and of others, and they explain their residence and use of

resources in terms of returning to where they lived, their parents lived, or their grandparents lived, and therefore where they retain rights in band territory and band membership.

Are hunter-gatherers different?

Are hunter-gatherers different from non-hunter-gatherers? Recent perspectives in archaeology suggest that there was no Neolithic revolution. Clive Gamble (2007), for example, in *Origins and Revolutions* argues that human cultural evolution is gradual and marked by an uneven gradient of development from instruments to containers. Its timescale covers the period before symbolic culture up until the Neolithic and the times after. In his view, there was no Neolithic Revolution and no Human or Symbolic Revolution either. Yet, widely-accepted notions in social anthropology distinguish between hunter-gatherer and non-hunter-gatherer ways of life. The most influential of these is James Woodburn's (e.g. 1980) distinction between immediate and delayed-return economies. Woodburn argues that once a people have made this economic transition, their way of thinking is altered. Immediate-return peoples do not plan for the future in their economic activities and are reluctant to invest time in making complex hunting equipment, let alone spending the time required to grow crops or look after livestock. Even Australian Aborigines, in Woodburn's words, 'farm out' their women through complex kinship arrangements, thus denying themselves the status of an immediate-return economic ideology.

However, in my view both Gamble and Woodburn go too far in making their respective points. There was a 'Neolithic Revolution'—in the sense that the transition from food-gathering and hunting to food production was, ultimately, revolutionary. There is no doubt that it was slow and gradual, taking perhaps about 1500 years according to estimates for both Europe and southern Africa (see Barnard 2007: 17).

The revolutionary point, if it can be dated, occurred not at the beginning (as Woodburn's distinction would imply), but rather at the end of the long Neolithic transition. I have suggested this indirectly in several papers on what I have called the foraging or hunting-and-gathering mode of thought (e.g. Barnard 2002; 2007). Neolithic and post-Neolithic thinking involve permanent settlement and planning for the future. For example, a number of things change with the acquisition of livestock: the need for herding skills, the search for grazing, the possession of a guaranteed supply of meat, the practice of trading it as opposed to just sharing it, the longer work hours required for herding over hunting and gathering, the possibility of increasing the number of possessions though sale or trade of livestock, greater worries over the supply of water, and above all the necessity to plan for the future of the herd and the human social group. A similar set of attributes is applicable to the acquisition of cultivating practices (Barnard 2007: 16-17).

Figure 1 shows an example from my paper on modes of thought through the Neolithic transition. It illustrates just one of several changes in perception required when one moves from hunting and gathering, to herding or horticulture. An individual's relations with the group change with regard to the contrast between accumulation and immediate consumption. Accumulation, which was in hunter-gatherer times anti-social, becomes social through the ability to pass possessions, including livestock, through the generations. This is contrasted with immediate consumption, which is not a purely individual act for hunter-gatherers, but a social one, as it is equated with sharing. One can think of the model as 'hunter-gatherers consume' or 'hunter-gatherers share', but I find it more meaningful to think of it as 'non-hunter-gatherers accumulate (but manage to do this in a socially acceptable way)'.

FIGURE 1

THE DISTRIBUTED MIND IN SOCIAL THEORY

The distributed mind hypothesis suggests mind beyond the self, broadly in the sense an individual's mind is located in his or her environment as much as it is within his or her brain. Particularly in archaeology, this is generally taken to imply that the material world, especially material culture, shapes the thinking of individuals just as much as an individual shapes the artefacts of that culture (see also Gamble's paper in this volume). Yet environments can be social as well as natural, and immaterial as well as material. In this sense, earlier ideas in the social sciences, as well as in the biological sciences (cf. Wilson 2005), can also imply a distributed mind. Examples from the social sciences might include Durkheim's *conscience collective* (or 'collective consciousness'), Bateson's version of the early twentieth-century idea of a cultural 'configuration', and Lévi-Strauss's *esprit humaine* (often translated as 'collective unconscious').

Durkheim's 'collective consciousness' is a social mind exerting its collective will on individuals. In his statistical study of suicide in France, Durkheim (1951 [1897]) showed that even this seemingly ultimate individual act is in part socially-determined. There is a correlation between religion and the incidence of suicide. Protestants and Jews in nineteenth-century France were more prone to kill themselves than were Catholics. Similarly, Gregory Bateson (1980 [1936]: 30-31) described the 'configuration' of a culture as a combination of its 'ethos', or emotional emphases, and its 'eidos', or system of cognitive processes. Lévi-Strauss's 'human spirit' or 'collective unconscious' is a mind distributed not among members of a single culture

or society, but one distributed throughout humankind as a whole. This is most obvious to me in Lévi-Strauss's early work on kinship (Lévi-Strauss 1969 [1949]), in which he suggests that every kinship system in the world can be defined according to the way it utilises the generating principles that underlie all human kinship structures. Other anthropologists, no doubt, would point to Lévi-Strauss's writings on the savage mind, totemism, or mythology, in all of which the seemingly culturally-specific is explained as part of deeper and universal cultural determinants.

A somewhat more mystical and much more extreme version is found too in anthropology, in A.L. Kroeber's (1917) theory of 'the superorganic'. In Kroeber's 1917 article of that title, the individual was pushed to the side in favour of cultural forces which drive human invention. Kroeber points to the fact that the telescope, the telephone, photography, the phonograph and so on were each simultaneously invented by two or more people; and oxygen, Neptune and the North and South Poles similarly discovered almost simultaneously by more than one individual. His article brought immediate criticism though, from Edward Sapir (1917), who attacked Kroeber for overemphasizing material aspects of culture. Sapir attributed invention in philosophical, religious and aesthetic activities to autonomous individual activity, albeit activity by culture-bearing individuals in social contexts.

Let me sum up this brief excursion into social theory with three points. First, notions resembling the present-day concepts of 'distributed mind' are not all recent. They have been around in sociological and anthropological thought for some time, and I know that psychologists can cite examples from their discipline as well. Secondly, as the earlier ideas suggest, there are different levels of collective consciousness or mind distribution. They need not be confined to countable 'cultures', but may be present at any level: from family, community or society to a deeper configuration comprising 'culture' as a whole, in the abstract. Thirdly, there have been serious disagreements, even among close colleagues of the same intellectual school, about fundamental things like the locus of culture, the relation

between biological, psychological and social phenomena, and whether or not to see individuals as embodying culture to such a degree that they cease to be able to act as individuals at all.

The evolutionary question that comes to mind is less how 'deep' cultural universals may be, but how old. Let me again set aside our current knowledge and examine this question of time-depth with reference to a debate from a few decades ago. At the 'Man the Hunter' conference in 1966, there was a heated exchange between Claude Lévi-Strauss and L.R. Hiatt, over the historical and evolutionary interpretation of Gidjingali marriage arrangements and of Australian kinship structures more broadly (see Hiatt 1968; Lévi-Strauss 1968; Hiatt & Lévi-Strauss 1968). Let me quote from the post-conference, edited version of Lévi-Strauss's paper.

Lévi-Strauss (1968: 351) writes: 'Hiatt has suggested two possible explanations for the discrepancy between model and reality in Australian society ….' Lévi-Strauss refers here to Hiatt's comment that, in order to salvage Lévi-Strauss's idealist interpretation of present-day Australian systems, we might envisage the imperfect systems that we see today, either as survivals from a time when behaviour did conform to reality, or as 'a chronologically unrealized unconscious model' (Hiatt 1968: 172). 'However', Lévi-Strauss continues,

> … there is also a third worth considering—that at one time, all this completed theory was clearly conceived and invented by native sociologists or philosophers. Thus, what we are doing is not building a theory with which to interpret the facts, but rather trying to get back to the older native theory at the origin of the facts we are trying to explain. After all, we know that mankind is about one or two million years old, but while we are ready to grant man this great antiquity, we are not ready to grant man a continuous thinking capacity during this enormous length of time. I see no reason why mankind should

> have waited until recent times to produce minds of the caliber of a Plato or an Einstein. Already, over two or three hundred thousand years ago, there were probably men of a similar capacity, who were probably not applying their intelligence to the solution of the same problems as these more recent thinkers; instead, they were probably more interested in kinship! (Lévi-Strauss 1968: 351)

It is worth recalling too Richard Lee and Irven DeVore's words in the preface to *Man the Hunter*:

> We cannot avoid the suspicion that many of us were led to live and work among hunters [or hunter-gatherers] because of a feeling that the human condition was likely to be more clearly drawn here than among other kinds of societies. (Lee & DeVore 1968: ix)

In other words, through the study of contemporary hunter-gatherers we can hope to uncover something of an earlier time, when perhaps, if Lévi-Strauss is right, we might have seen kinship coming to be debated, or practices being modelled and models being practised.

Exactly when this was of course we do not know, but elsewhere I have suggested a trajectory, based in fact on the social brain hypothesis—to which I shall now turn.

THE SOCIAL BRAIN HYPOTHESIS, LANGUAGE AND KINSHIP

The social brain hypothesis suggests that the anthropoid primate brain evolved along with social complexity. In the brain, this involved the expansion of the neocortex, and

in society it involved, among other things, a parallel expansion in group size and consequent selection for language over grooming as basis of communication around the time of *Homo erectus* (e.g. Dunbar 2001: 190-191).

In recent papers, I have coupled this hypothesis with (a) a rough and not strictly essential trajectory in relation to fossils hominins, from *Homo habilis* or *Homo erectus* to *Homo heidelbergensis* to *Homo sapiens*, (b) Calvin and Bickerton's (2000) three-phase model of evolution of language: from proto-language (words and symbolic communication) to rudimentary language (simple and ambiguous sentences) to true language (with full syntax), and (c) a parallel model of the evolution of kinship. The last involves a proto-kinship phase of inclusive kinship and sharing, which is different from pre-linguistic kin patterns among chimpanzees, bonobos or (I speculate) australopithecines; then a rudimentary kinship phase of us/them kinship, incest avoidance and exchange of all kinds; and then a full kinship phase with universal kin categorization and explicit rules of sharing, exchange and kin behaviour. This third phase, which entails loosely Lévi-Straussian elementary structures (Lévi-Strauss 1969), eventually breaks down after Neolithization and the transition from universal to non-universal classification systems and the re-emergence of genealogical distance over category as the basis of kin relationships (Barnard 2008; 2009).

This theory is expressed in Figure 2. There is more to it, of course, but the relevance of it here is to suggest that the dawn of *Homo*, which is traditionally regarded as the dawn of tool-making (although this may now be in dispute), also marks the beginnings of linguistic communication, which is in turn coupled with the evolution of kinship structures. Leslie Aiello and Peter Wheeler (1995) have also argued a relation between brain size, gut size and a transition to intensive meat-eating, which in turn suggests larger group sizes and increasing intellectual abilities which are required not only to make tools but to teach tool-making skills. The evolution of kinships structures through the phases which I call the signifying,

syntactic and symbolic, and on to the destabilising Neolithic, involve until the Neolithic an ever-increasing concern with classification, as the basis of identity. An individual in human society is never isolated. In a universal system, he is also never without specific relationship to everyone else, for kinship does not stop at the family but at the very end of social interaction. No individual is non-kin, but always my joking partner (e.g. wife or grandmother) or my avoidance partner (e.g. usually a man's sister, or mother).

FIGURE 2

HUMAN NATURE?

Distributed mind and extended brain

The distributed mind hypothesis implies that humans are naturally cultural, and possibly that we are naturally cultural to an unlimited degree. Furthermore, culture has no bounds, in that at least certain aspects of culture are cumulative and can be amplified by the storage capacity of language, and beyond that, by the unnatural means of writing or computers. A further comparison with language may be relevant here. Marc Hauser, Noam Chomsky and Tecumseh Fitch (2002: 1570) note that there is a difference between language as 'a culturally specific communication system' and language as 'an internal component of the mind/brain'. The notion of culture, it seems to me, could similarly be divided into two forms, with analogous

meanings. Hauser, Chomsky and Fitch further discuss the distinction between the 'faculty of language in the broad sense' (FLB) and the 'faculty of language in the narrow sense' (FLN). The former includes sensory-motor and conceptual-intentional systems, whereas the latter includes specifically recursion—the embedding of a sentence within a sentence. And they argue that although other animals have FLB, only humans have FLN. Recursion, for them, is the single defining property of human, as opposed to animal, communication. But the most relevant point they make for our discussion here is that to find the mechanism required for the evolution of language to include recursion, we probably have to look beyond language itself: they suggest to numerical ability, navigation, and (unspecified) social relations.

The extended brain hypothesis implies that humans are naturally social, but only to a certain degree. More specifically, humans achieve maximal sociality at roughly 150 individuals per group (or per 'community', which may be larger or smaller), according to predictions by neocortex ratio. While there is no limit to culture, this seems to be the natural limit to sociality for humans (see Aiello & Dunbar 1993: 189). However, I question these limits on both counts. It is not that culture has no natural bounds or that sociality is impassibly bounded, but rather, that we in our post-natural age have broken the constraints of nature on the first count and found cultural solutions to social boundaries on the second count. Let me explain. In a sense, the cultural limits of human nature lie at the end of hunter-gatherer society. And by 'hunter-gatherer society' I mean those societies which function primarily (if not exclusively) by hunting and gathering and possess a foraging mode of thought. Arguably, the production and processing of vegetables and grain, and the possession of edible and milk, yoghurt and cheese-giving animals, does not lie within the 'natural' confines of a human way of life. It lies easily within human capability, of course, but beyond normal human nature.

Likewise, group sizes of thousands and millions of humans per social entity lie clearly within human capability, but well beyond the predictions for humans based

on neocortex size alone. Dunbar (e.g. 1993) has explained this with ingenious examples of maximal units among anarchical intentional communities such as Hutterites. They themselves explain the limit of 150 as the largest community which they can sustain without a police force or other hierarchical mechanisms to maintain order. Beyond that, we do seem to need such *unnatural*, and therefore arguably un-human, hierarchical mechanisms of social constraint. As it happens, I live in a fairly self-regulating hamlet (in the Scottish Borders) of almost exactly 150 individuals. It is not an intentional community, but an accidental and indeed very diverse one. The vast majority of humanity, though, live in villages, towns or cities that are considerably larger. They do this by extending not their brains, but their unnatural, *cultural* elaboration of social segmentation and social order.

African or Australian?

In an earlier paper (Barnard 1999) I raised the question of which represented the better model of early symbolic cultural humanity: contemporary African hunter-gatherers, or contemporary Australian. I suggested that there are six ways in which Australian hunter-gatherers differ from southern African hunter-gatherers, and that these are mainly also ways in which the former differ from all other hunter-gatherers. These include: belief in the Rainbow Serpent, spiritual relations to land, the possession of elaborate forms of totemism, complex rights and obligations to kin through clan membership, elaborate marriage rules governed by sociocentric categories, and the application of the same classification principles in a larger world order which is unified through such principles. All these, it seems to me, are reasons for looking elsewhere. African hunter-gatherers, whose social and cosmological structures are simpler and more like those of other hunter-gatherers, are more likely to represent the earlier form.

Let me now add a seventh reason. In a recent paper in *The American Journal of Human Genetics*, Doron Behar et al. (2008) show that the genetic distance between different branches of humanity is greatest in Africa, and within Africa greatest in southern Africa, and within southern Africa greatest among Khoisan peoples. The rest of the world really represents a small subset of human genetic diversity (at least in female lines). According to Behar and his colleagues, the matrilineal divergence of the Khoisan population was between 150,000 and 90,000 years ago, and the Out of Africa dispersal between 70,000 and 60,000 years ago. I shall return to that point in a moment.

There are several specific forms kinship classification among southern African hunter-gatherers, but broadly these can be collapsed into two basic forms. These basic forms are the same the world over (see Barnard 2008: 238-239). One emphasizes genealogical distance and the other emphasizes egocentric cross/parallel and alternating-generation categories. As among other hunter-gatherers, both forms are universal, in that everyone is categorized as kin. But unlike most Australian or South American systems these operate entirely without sociocentric categories. If such categories were embedded within human nature, I would expect to find at least one system in Africa too with remnants of them. The parallel/cross and alternating-generation categories are not vestiges of these, but rather the building blocks of both such egocentric systems and the sociocentric ones of Australia and South America.

On a worldwide scale, my view seems to go against Clark Wissler's age-area hypothesis (e.g. Wissler 1923: 58-61), which for smaller regional units like 'culture areas', often does work. Wissler's age-area hypothesis is indeed sustained if we look to eastern and southern Africa, and not the whole world, as the relevant unit. In the early twentieth century, Wissler hypothesised that typically within a culture area the oldest items of culture will be those found on the periphery, not those in the centre. That is because the centre is the seat of change, and things diffuse outwards (from

centre to periphery). One might ask why this is of any relevance today, in our era of absolute dating with radioactive isotopes. Like Sapir's list, in his argument against Kroeber, it is relevant because not all culture is material culture. We might indeed want to know which kinship structures, social practices or cosmologies came first among modern humans in general or in a subcontinent or region. In a monumental book called *Configurations of Culture Growth*, Kroeber (1944) did eventually try his hand at explaining the things Sapir had criticized him for leaving out. Indeed, it is not the accumulated specifics, material or ethereal, which define what is in essence a relation between culture and individual. It is the configuration, or to borrow the Chomskyan phrase, the 'faculty of *culture* in the narrow sense', which allows the description of specific social relations to be embedded in abstractions such as a 'kinship system'. In my own work (e.g., Barnard 1992), such configurations are as often as not definable as structural elements held in common across a culture area or region like Khoisan southern Africa or Aboriginal Australia—in other words, larger than specific 'cultures'. The fact that both Aborigines and Bushmen can not only classify strangers but commensurate systems when describing them hints at cognitive configurations that lie between a 'culture' and the universe of cultures.

CONCLUSION

Let me conclude with a brief return to Behar's and his colleagues' paper (Behar et al. 2008) in light of the social brain and extended mind hypotheses. Humanity is descended in the common matriline from a small group of people living between 210,000 and 140,000 years ago. There are more than 40 mtDNA lineages in the African population, but only two such lineages in the Out of Africa migration. This, according to Behar, suggests that humanity at the point of dispersal was divided into small, isolated groups, and further that matrilineal organization was likely. I would say

that uxorilocality would be a better description, but the details of that matter little in terms of the wider social organization of the groups. These people of the African Middle Stone Age no doubt possessed all the attributes shared by humanity today. They also, I believe, possessed specifically those elements of culture and social life common to all or nearly all human hunter-gatherers today or in ethnographic memory. These would include at least the following: a low population density compared to non-hunter-gatherers, a band level of social organization, an egalitarian social organization, gender differentiation in subsistence and in ritual, customs governing the distribution of the products of hunting and gathering activities, universal kin classification, belief in communication with animals or a symbolic association between animals and humans (Barnard 1999). They probably had a worldview based on twos or fours (not threes), and their religion was one of animism or monotheism (not polytheism and probably not totemism, which is dependent on more complex relations to land or among groups). And above all, their social order was characterized by flexibility, even if their cosmological order was more rigid.

This society of natural, but fully cultural, humanity spread across the globe and became all of us. Those who went south have kept most closely the knowledge and social ways of all our ancestors. Those who went elsewhere have all lost elements of social structure that are adaptive for southern and eastern African hunter-gatherer life and which still characterize many fully-modern hunter-gatherer communities in southern and eastern Africa and, though to a lesser extent, elsewhere in the world. Such attributes include the individual ability to classify as ‘kin’ everyone with whom one normally associates, but nevertheless without the formal assignment of individuals to socio-centric categories such as moieties or sections. The classification of kin in such a way would be coincident with formally restricting but nevertheless empirically flexible rules of marriage. Other attributes would include the ability to form groups, aggregate and disperse according to seasonal and other

environmental circumstances, and, importantly, the recognition of common cultural configurations across physical group boundaries.

Human nature is within us all, but more precisely embedded within some forms of social structure than others. This is not the same thing as hominin nature, because in humans language and the consequent development of kinship structures replace other forms of social bonding. Human nature is more embedded in the social structures of African hunter-gatherer populations than elsewhere because such populations, at least until very recently, have been able to maintain relations to land, to resources, and to people through symbolic and socio-environmental ideologies undoubtedly reminiscent of those once shared by all humanity. It is not that these peoples are in any sense primitive, but rather that the rest of us are, though our social condition, in a sense deviant: we have lost part of that aspect of human nature that defines post-symbolic but pre-political sociality.

REFERENCES

Aiello, L.C. & Dunbar, R.I.M. 1993. Neocortex size, group size and the evolution of language. *Current Anthropology* 34: 184-193.

Aiello, L.C. & Wheeler, P. 1995. The expensive tissue hypothesis: the brain and the digestive system in human and primate evolution. *Current Anthropology* 36: 199-221.

Barnard, A. 1978. Universal systems of kin categorization. *African Studies* 37: 69-81.

Barnard, A. 1988. Kinship, language and production: a conjectural history of Khoisan social structure. *Africa* 58: 29-50.

Barnard, A. 1992. *Hunters and Herders of Southern Africa: A Comparative Ethnography of the Khoisan Peoples*. Cambridge University Press: Cambridge.

Barnard, A. 1999. Modern hunter-gatherers and early symbolic culture. In Dunbar, R., Knight, C., & Power, C. (eds), *The Evolution of Culture: An Interdisciplinary View*. Edinburgh University Press: Edinburgh. pp 50-68.

Barnard, A. 2002. The foraging mode of thought. In Stewart, H., Barnard, A., & Omura, K. (eds), *Self- and Other Images of Hunter-Gatherers* (Senri Ethnological Studies 60). National Museum of Ethnology. Osaka. pp 5-24.

Barnard, A. 2007. From Mesolithic to Neolithic modes of thought. In Whittle, A. & Cummings, V. (eds), *Going Over: The Mesolithic-Neolithic Transition in North-West Europe.* (Proceedings of the British Academy 144). Oxford University Press for the British Academy: London. pp 5-19.

Barnard, A. 2008. The co-evolution of language and kinship. In Allen, N.J., Callan, H., Dunbar, R., & James, W. (eds), *Early Human Kinship: From Sex to Social Reproduction*. Blackwell Publishing: Oxford. pp 232-243.

Barnard, A. 2009. Social origins: sharing, exchange, kinship. In Botha, R. & Knight, C. (eds), *The Cradle of Language*. Oxford University Press: Oxford. pp 356-381.

Bateson, G. 1980 [1936]. *Naven: A Survey of the Problems Suggested by a Composite Picture of the Culture of a New Guinea Tribe Drawn from Three Points of View* (second edition). Wildwood House: London.

Behar, D.M., Villems, R., Soodyall, H., Blue-Smith, J., Pereira, L., Metspalu, E., Scozzari, R., Makkan, H., Tzur, S., Comas, D., Bertran-Petit, J., Quintana-Murci, L., Tyler-Smith, C., Wells, S., Rosset, S., & the Genographic Consortium. 2008. The dawn of human matrilineal diversity. *The American Journal of Human Genetics* 82: 1-11 (May 2008).

Bickerton, D. 1998. Catastrophic evolution: the case for a single step from protolanguage to full human language. In Hurford, J.R., Studdert-Kennedy, M., & Knight, C. (eds), *Approaches to the Evolution of Language: Social and Cognitive Bases*. Cambridge University Press: Cambridge. pp 341-358.

Boyd, R., & Richerson, P.J. 2005. *The Origin and Evolution of Cultures*. Oxford University Press: Oxford.

Calvin, W.H. & Bickerton, D. 2000. *Lingua ex Machina: Reconciling Darwin and Chomsky with the Human Brain*. MIT Press: Cambridge, MA.

Dunbar, R.I.M. 1993. Coevolution of neocortical size, group size and language in humans. *Behavioral and Brain Sciences* 16(4): 681-735.

Dunbar, R.I.M. 1998. The social brain hypothesis. *Evolutionary Anthropology* 7: 178-190.

Dunbar, R.I.M. 2001. Brains on two legs: group size and the evolution of intelligence. In De Waal, F.B.M. (ed.), *Tree of Origin: What Primate Behavior Can Tell Us about Human Social Evolution*. Harvard University Press: Cambridge, MA. Pp 173-192.

Durkheim, E. 1951 [1897]. *Suicide: A Study in Sociology* (translated by Spaulding, J.A. & Simpson, G.). The Free Press of Glenco: New York.

Fortes, M. 1958. Introduction. In Goody, J. (ed.), *The Developmental Cycle in Domestic Groups*. Cambridge University Press: Cambridge. pp 1-15.

GAMBLE, C. 2007. *Origins and Revolutions: Human Identity in Earliest Prehistory*. Cambridge University Press: Cambridge.

Gamble, C. & Porr, M. 2005. From empty spaces to lived lives: exploring the individual in the Palaeolithic. In Gamble, C. & Porr, M. (eds), *The Individual in*

Context: Archaeological Investigations of Lower and Middle Palaeolithic Landscapes, Locales and Artefacts. Routledge: London. pp 1-12.

Gellner, E. 1989. Culture, constraint and community: semantic and coercive compensations for the genetic under-determination of *Homo sapiens sapiens*. In Mellars, P. & Stringer, C. (eds), *The Human Revolution: Behavioural and Biological Perspectives in the Origins of Modern Humans*. Edinburgh University Press: Edinburgh. pp 514-525

Güldemann, T. 1998. The Kalahari basis as an object of areal typology – a first approach. In Schladt, M. (ed.), *Language, Identity, and Conceptualization among the Khoisan* (Research in Khoisan Studies 15). Rüdiger Köppe Verlag: Cologne. pp. 137-169.

Hauser, M.D., Chomsky, N., & Fitsch, T. 2002. The faculty of language: what is it, who has it, and how did it evolve? *Science* 298: 1569-1579.

Hiatt, L. R. 1968. Gidjingali marriage arrangements. In Lee, R.B. & DeVore, I. (eds), *Man the Hunter*. Aldine: Chicago. pp 165-175.

Hiatt, L. R. & Lévi-Strauss, C. 1968. Gidjingali marriage arrangements: comments and rejoinder. In Lee, R.B. & DeVore, I. (eds), *Man the Hunter*, 210—12. Aldine: Chicago. pp 210-212.

Kroeber, A.L. 1917. The superorganic. *American Anthropologist* 19: 163-213.

Kroeber, A.L. 1944. *Configurations of Culture Growth*. University of California Press: Berkeley.

Lee, R.B. 1979. *The !Kung San: Men, Women, and Work in a Foraging Society*. Cambridge University Press: Cambridge.

Lee, R.B. & I. DeVore, I. 1968. Preface. In Lee, R.B. & DeVore, I. (eds), *Man the Hunter*. Aldine: Chicago. pp vii-ix.

Lévi-Strauss, C. 1968. The concept of primitiveness. In In Lee, R.B. & DeVore, I. (eds), *Man the Hunter*. Aldine: Chicago. pp 349-352.

Lévi-Strauss, C. 1969 [1949]. *The Elementary Structures of Kinship* (revised edition, translated by Bell, J.H., von Sturmer, J.R., & Needham, R.). Eyre and Spottiswoode: London.

Marshall, L. *The !Kung of Nyae Nyae*. Harvard University Press: Cambridge, MA.

Sapir, E. 1917. Do we need a 'superorganic?' *American Anthropologist* 19: 441-447.

Wilson, R.A. 2005. Collective memory, group minds, and the extended mind thesis. *Cognitive Process* 6(4): 227-236.

Wissler, C. 1923. *Man and Culture*. Thomas Y. Crowell Company: New York.

Woodburn, J. 1980. Hunters and gatherers today and reconstruction of the past. In Gellner, E. (ed.), *Soviet and Western anthropology*. Duckworth: London. pp 95-117.

MESOLITHIC MODE OF THOUGHT

Accumulation	*Anti-social (equated with not sharing)*
Immediate consumption	*Social (equated with sharing with family and community)*

NEOLITHIC MODE OF THOUGHT

Accumulation	*Social (equated with saving for self and dependants)*
Immediate consumption	*Anti-social (equated with not saving)*

Fig. 1. Sharing (immediate consumption) and accumulation (from Barnard 2007, 10).

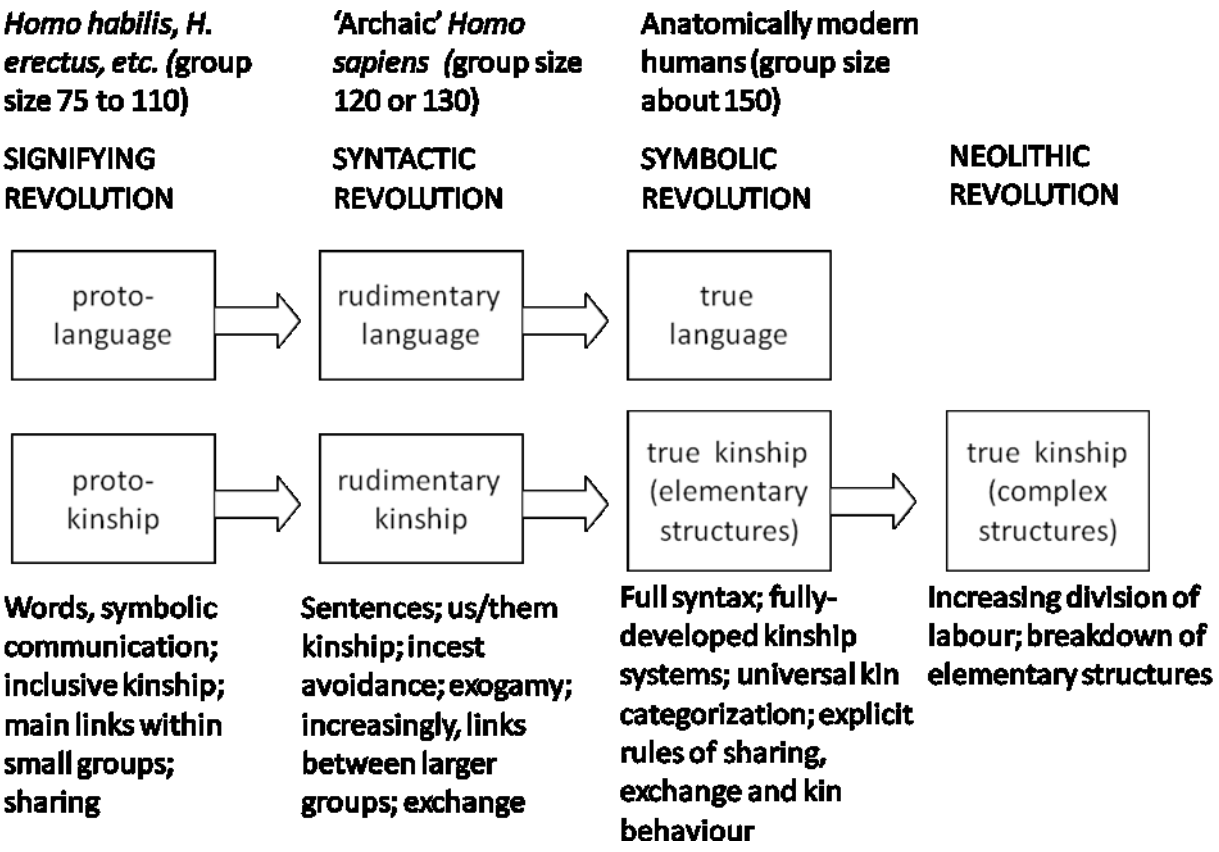

Fig. 2. The co-evolution of language and kinship.

Fig. 1. Sharing (immediate consumption) and accumulation (from Barnard 2007, 10).

Fig. 2. The co-evolution of language and kinship.