

Problems in the concept of ‘Neolithic’ expansion in Southern Africa

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Abstract:

The concept of a ‘Neolithic’ expansion into Southern Africa, using analogy with the European Neolithic, has recently been mooted. The debate on the arrival of domesticated animals revolves around two issues: 1) the animals were brought in by immigrant herdsmen, possibly speaking a Khoe-related language, who then dispersed across the sub-continent, arriving at the Cape some 2000 years ago; 2) once the animals had arrived in southern Africa, they were dispersed across the sub-continent through internal exchange mechanisms by local hunters who became herders.

This paper will argue against a simple model of a ‘Neolithic’ expansion by discussing basic theoretical models of the difficulty of ideological shifts from extractive to productive ways of life. It has to be recognised that the archaeological evidence for early pastoralism across this huge area is at best ‘patchy’. Nonetheless, the question of archaeological evidence for different economic strategies will be fundamental to the argument. The incorporation of genetic studies, and the possibility of reconstructing both linguistic connections and transformations through the languages of hunting and herding in Southern Africa could allow us to add independent variables on who the populations were who introduced the stock, and if, indeed, there were early immigrating Khoe-speakers to the Cape. Once a genetic base-line of who the indigenous people of the Cape were prior to the arrival of domestic stock is developed, we will have a comparison with who existed before and after 2000 BP. The ‘how’ of pastoral development can be an attainable goal, but the ‘why’ may still remain elusive.

Introduction

Within the last decade the term ‘Neolithic’ has been revoked, and used to designate the onset of food production in such widely dispersed areas of the world as the American southwest (Kohler et al. 2008) and southern Africa (Sadr 2003). I am challenging some assumptions that have recently been made that suggest there was a local or indigenous southern African domestication process of hunters becoming herders and independent inventors of ceramics. We might also question the use of the term outside the Eurasian theatre where it was originally coined.

In 2004 Detlef Gronenborn published a comparative paper on what he saw were the similarities between the expansion of farming/pastoralist societies in Europe and Southern Africa. What was highlighted was the European Mesolithic-Neolithic interaction that has been identified through the northern expansion into Germany of La Hougette pottery tradition which has “stylistic links to southern France”. One particular camp at Stuttgart-Bad Cannstatt in Suabia: “...was occupied during the spring and autumn by a small group... (which) must have kept livestock, most likely sheep, but otherwise hunted animals and gathered plants” (Gronenborn 2004: 15).

Using this same data, Sadr (2003) asked the question why the term 'Neolithic' had not been used in Southern Africa. He introduced the concept of 'hunters-with-sheep' who, he suggested, were responsible for the dispersal of the earliest domestic sheep as far as the Cape. The animals were deemed to have been transmitted via internal exchange systems analogous to *hxaro* gift giving found among the Ju/'hoansi Bushmen of northern Namibia and Botswana (Wiessner 1994).

This model is at odds with the more conventional assumptions that the first animals were brought into, and dispersed through, southern Africa by immigrant herders from the north who may have spoken a Khoe language. This idea was initiated by Westphal (1963) when he claimed that there were strong linguistic similarities to the languages spoken in northern Botswana and the Khoekhoen of the Cape. The debate has been further refined to look for any archaeology that might support an early Khoekhoen presence in the Cape, but Sadr (2008) claims there is none, and that the lugged pottery usually associated with Khoekhoe presence is a late arrival.

History of Concepts of the 'Neolithic'

In 1865, Sir John Lubbock slightly refined Thomsen's 3-Age System by including a fourth period: the 'Neolithic'. This was seen as a stone age period before the use of metal (except gold), and was defined on the basis of ground stone tools. Even then there was an awareness of economic changes that existed between the stone and bronze ages. A 5-stage system was devised by Westropp (1872) by adding a 'Mesolithic' period between the Palaeolithic and Neolithic. This, Rowley-Conwy (1996) says clearly meant Middle or Upper Palaeolithic. Nonetheless, in Westropp's table (1872: facing page 1) he is clear that the Neolithic includes food production (pastoralism). This is the first time the Neolithic is specifically given an economic definition. This was later confirmed by Childe in 1924 (Childe 1951: 22) who saw food production as a way of distinguishing the Neolithic from the Mesolithic, and, with his Marxist leanings, the coining of the phrase "Neolithic Revolution".

Since more work on the origins and spread of food production has been done in Eurasia, it is here that some of the most heated debates have come. By the 1980s and 1990s post-processual archaeologists, like Julian Thomas (1991) focussed down on the ideology underlying the Neolithic, and how this compared with hunter-gatherer Mesolithic societies. The interpretation was that the Mesolithic hunters were direct precursors of the food producing Neolithic farmers. More recent arguments revolve around the ideology of food producers, and Warren (2007) points out how there has even been attempts to push Neolithic models of architecture and symbolism back onto the Mesolithic middens. If such connections could be made this would have strengthened the suggestion that the Mesolithic evolved locally into the Neolithic.

The ideological assumptions were challenged by Rowley-Conwy (2004) by saying there was no intensification of the Mesolithic towards a 'native' agriculture, and that the arrival of food producers was highly disruptive. Vanmontfort (2008) also suggests that in central Europe Linear Pottery Culture (LBK) settlement avoided those areas already occupied by hunter-gatherers, with the latter even retreating to areas away from LBK villages. All this hints at a model of intrusion by colonising food producers, and any suggestion of aboriginal hunting groups becoming food producers may only have happened later. New genetic research (Haak et al 2010) supports the

intrusion hypothesis by showing that the early farmers had Near Eastern and Anatolian affinities.

What do these models have to do with southern Africa? While the local details may be different, the theoretical arguments are similar. How do hunters become food producers, in particular, herders? Can hunters independently become pastoralists?

Using examples of modern hunters in Southern Africa, Alan Barnard (2002; 2007) shows the anthropological differences between what he calls the ‘Mesolithic’ (hunter) and ‘Neolithic’ (food producer) modes of thought, rather than modes of production. The differences are great, and include concepts of accumulation and consumption of resources, leadership, kinship models, and how land is perceived and used. His examples are of modern hunters who are in transition in the 21st century to fit into the more dominant societies around them. A basic premise offered by Barnard (2007: 15) is:

“In broad terms, the foraging mode of thought is resilient and resistant to contact with agro-pastoralists. Typical characteristics of hunter-gatherer society include band level of social organisation, large territory for size of population, lack of social hierarchy, universal kinship (everyone being classified kind of ‘kin’, no non-kin), widespread sharing, a dualistic mentality (farmers think in ‘threes’), symbolic relations between hunted animals and humans, and flexibility in all realms”.

Even when conditions change, such flexibility allows hunters to maintain their basic way of thinking.

By contrast, pastoralists have domestic animals that become ideologically ‘family’, and being owned by individuals, create differences in wealth, potentially leading to leadership. Herd animals are inheritable property. Basic needs of stock are pasture and water, and while these resources may not be individually owned, are still controlled by the corporate group, and possibly defended when the resources are scarce. In contrasting these basic principles Barnard (2008) reckons that at some point Khoekhoe herders must have made the transition from the ‘Mesolithic’ mode of thought to a ‘Neolithic’ one. This assumes that the pre-cursors of Khoekhoe were originally southern African hunters who had to have made the transition to become the herding society first met by European travellers in the 15th century.

Foraging or ‘Mesolithic’ Modes of Thought

Human and non-human persons:

According to one survey of the ethnographic literature on the relations hunters have with animals: “Animals and humans can be seen as comprising a single category” (Kent 1989: 13). She also says: “Discrimination between human and non-human animals is much less distinct and straightforward in societies that hunt than those that do not” (p. 12). This is based on the principle that there is reciprocity between people and animals, and no hierarchy.

Ingold (2000: 92-93) describes beliefs among the Ojibwa who see a category of 'person' that can be both human and non-human. In some cases the 'other-than-human' persons are referred to as 'grandfathers', who are seen as more powerful than living humans. "These beings are immortal, but can change their form with relative ease, appearing now as human, now as an animal, now perhaps as some meteorological phenomenon... By contrast, only the most powerful human persons, such as sorcerers or shamans, can change into non-human form and make it back again – and then only with some danger and difficulty".

Hunters of southern Africa have origin stories of a time when people were animals. Animal-headed people (*therianthropes*) are often found in the rock art, and these may be visual representations of stories told of shamans taking the form of lions, or other animals (Hollman 2004). These sorcerers or shamans capable of transforming themselves into animals were considered to be the most powerful people, as they were able to revert to their human shape when needed (Ingold 2000: 93). This might seem a form of power, but among the Ju/'hoansi Bushmen all people, regardless of their skills are 'levelled', i.e. forced by society not to try to rise above others (Wiessner 1996, and Richard Lee's 1969 experience in the Kalahari). Religious beliefs among the Kalahari Bushmen are not esoteric or confined to specialist practitioners. Anyone showing aptitude can become a healer, which results in half the men, and one in three women becoming trance dancers (Guenther 1999: 82). In addition: "The lack of political organisation and the concurrent absence of any institutionalization of power, also means that religion in Bushman society is freed from one of its most essential and universal roles in society: the legitimization of power" (ibid: 84).

Respect Observances among Hunters

The stories of the /Xam Bushmen, describe a number of instances of *!nanna-sse*, or respect observances (Hollman 2004). These usually occur between people and animals, but occasionally the animals, such as baboons, also show respect. This entails "avoidance of doing or saying things" (Biesele 1993: 23). A particular example are the rules when hunting an eland which has been shot by a poisoned arrow. The hunter must show respect for the eland, lest the mantis-god revive the animal and it runs away (Hollman 2004: 28).

Among the Cree of Canada, this idea of respect is carried to an extreme. They believe that caribou being hunted will stand and wait for the hunter to shoot, as though it were offering itself (Ingold 2000: 13, 67): "the animals in the environment of the hunter do not simply go their own way, but are supposed to act with the hunter in mind" (ibid: 71). This is only possible, the hunters believe, when the correct observances have been followed, and the hunter is in tune with the prey. Any lack of 'trust' in this arrangement will result in the hunter not being successful. The animals only 'present themselves', if, as part of the respect being shown by the hunter, the product of the hunt is shared with other people in the social group. Thus a harmony exists between the hunter and all other things that exist in the world, and harmony can only exist when the rules are observed, particularly those of sharing.

Hunting also plays a regenerative role among the Cree (Ingold 2000: 67), with the soul of the animal being released at death to be reborn as another. Several authors reflect on the role of meat in hunting society (Parkington, 2004), with Biesele (1993:

41) suggesting: “sympathetic identification of hunters and prey and/or hunter’s wives and prey. A sex/food equation is pervasive...”, and eating eland fat is equated with having sexual intercourse.

Transitions to Herding

I have detailed elsewhere the problems inherent in the transition from a foraging mode of production among hunters to a structured mode found among herders and subsistence agriculturalists (Smith 1990). I focussed on the social needs that would exist in going from an egalitarian institution to one where private property in the form of livestock is the accepted norm. The transition is phrased in somewhat different terms by Ingold (2000) who focuses on the relations between people and animals. In hunting societies there is a ‘trust’ bond between the hunter and his prey that contrasts with herders who ‘control’ their animals..

Successful hunters are those that show respect. This places the animals in an equal relationship with the hunters, and “coercion, the attempt to extract by force, represents a betrayal of the trust that underwrites the willingness to give (on the part of the prey)” (Ingold 2000:71). The hunter is thus seen to need to gain ‘knowledge’ of the animals, and the world around him in general (Castaneda 1968; Biesele 1993; Parkington 2003). With knowledge “the world opens itself up” to the hunter, and his weapons “are caught up in chains of personal (not mechanical) causation, serving to reveal the otherwise hidden intentions of non-human agents” (Ingold 2000: 72).

The relationship pastoralists have with their animals is one of dominance and control. The animals are dependent to a great degree for their survival on humans, who place them in the same category as jural minors. Ingold (2000: 72) says it succinctly: “They are cared for, but they are not themselves empowered to care”, and unlike the hunter and his prey, the pastoralist can sacrifice his stock – they do not sacrifice themselves.

The transition from hunting to herding may require an intervening step. Using Woodburn’s (1991) classification of hunting societies into ‘immediate return’ (where hunters collect for the day’s ‘pot’, and no storage takes place) and ‘delayed return’ (where hunters have resources which can be stored), we can postulate that delayed return hunters have a surplus. This has the potential for unequal access, at least as far as redistribution is concerned, placing authority in the hands of individuals, which in turn may lead to a hierarchical social formation.

This degree of inequality also exists between herd animals and the pastoralist, with the potential to spill over into human relationships, because a wealthy herder (with lots of animals) is seen as a ‘big man’. Pastoralist society, equally has the potential to become hierarchical, although there are some East African groups who make a concerted effort to maintain equality among families, and not let any one corporate group be more powerful than another. An example are the Nuer where “there is little inequality of wealth and no class privilege...it is true that cattle can be amassed, but except for a few sacred herds kept by prophets, in fact they are not” (Evans-Pritchard 1940: 91). This social practice of the Nuer is somewhat unusual. Most herding groups tend to let their herds grow and the man who has so many animals and is able to lend part of his herd to others in bond friendship gains in status and authority (as well as evening out the risks towards his herd). Such authority often ends up in the hands of

older men, to whom young men must defer in order to obtain cattle for bridewealth payments (Spencer 1988: 233). This creates tension between age sets/generations.

The transition to herding is thus not just a simple matter of access to potentially domesticable animals to hunters who then assume responsibility for their care. The shift from 'trust' to 'dominance' which would go along with a concomitant shift from egalitarian to unequal social relations would suggest that the changes would not be made lightly. In fact, why it should happen at all would seem to be a result of rather unique circumstances, and specific forces driving change.

Herd Control and Management in 'Virgin Soil' Environments

Modern examples of hunters adopting herding and agriculture have shown that they take on not only the economy of food production, but also the language of the more dominant society, ultimately resulting in language loss. Whether we can use these modern examples as analogies for the initial spread of domesticated animals into 'virgin soil' will depend on how close the modern conditions match those when the animals first arrived.

It should be recognised from the start that initial immigration of alien species cannot be assumed to have been without major ecological adjustments, such as learning to avoid critical diseases unfamiliar to the new arrivals. Those diseases prevalent in sheep and goats that would have affected traditional pastoralists systems would have included deficiency diseases, such as phosphorous (*lamseikte*), as well as toxic plants (Leppan 1928), such as *gifblaar* and *tulp* in South Africa (Hugo 1968). Animals, and possibly immigrant herders, would need to learn to avoid such pitfalls, as do the Maasai today who empirically know the relationship between the proximity of newborn wildebeest and malignant catarrhal fever in East Africa, or east coast fever and foot and mouth disease carried in wild African buffalo populations (Gifford-Gonzalez 2000).

Different animals use different levels of the herb layer, and, of course, immigrant stock would be in competition with wild game. Studies of rate of intake by ungulates, in particular a selective grazer like sheep, showed reduced intake by the presence of unwanted or unpalatable components of the vegetation (Bell 1970:120). One advantage of the arrival of domestic animals into the drier and western areas of South Africa south of the Zambesi would have been a tsetse-free environment. Once adjustment to local conditions had taken place, stock herding, particularly with the hardy varieties of indigenous sheep, Southern Africa was a good place for herding, albeit with vagaries of annual rainfall to which the herds would need to accommodate, either by movement, or access to groundwater sources.

Domestic Animals Spread to Southern Africa: The Archaeological Evidence

With increasing aridity in the Sahara after 5000 BP as a result of the southward shift of the Intertropical Convergence Zone (ITCZ), a concomitant opening up of pasture territory occurred as the tsetse belts also moved south.

Expansion by herders with cattle and small stock into East Africa occurred by 4000 BP where pastoralists have been recognised as subsisting alongside local hunters. This is tentatively supported by a recent throw-away caption comment suggesting genetic evidence linking Maasai in East Africa with North African ancestry (Henn et al 2011: Table 1, note †). By 2500 BP the cultural scene in East Africa was made even more diverse by the entry of farming people with domestic crops from the Cross Rivers area of Cameroon around the northern end of the tropical forest. Thus increasing pressures on space, contributed by population growth among farmers (Gignoux et al. 2011), were no doubt felt by everyone, especially mobile herders, in an environment which probably had two rainy seasons in the year (Marshall 1990), but still prone to periodic drought years.

The response to population and environmental pressures by pastoralists is to move, if this is possible, and to look for new pasture areas. The tsetse-free corridor down the highland spine of East Central Africa (Smith 2005a) permitted the movement of stock and people (Fig. 1).

Archaeological evidence for the spread of people from East to Southern Africa has usually been focussed on the so-called ‘Bantu expansion’ of Iron Age people (Huffman 1979) for the very good reason that the material culture, particularly pottery styles, could be tracked and well-dated. There is good evidence, however, that sheep had reached as far as the Cape in southern Africa by the 1st century AD, long before the first Iron Age farmers arrived in the subcontinent in the 5th century, suggesting an earlier, and possibly pastoral, migration southward.

Previously, there had been assumptions that ‘click’ language speakers of East Africa, i.e. Hadza and Sandawe, could be connected to Khoisan of southern Africa, and this could have been how small stock arrived. Morris (2002) has found no skeletal evidence to support the idea that Khoisan people existed north of the Zambezi. If this was indeed the case, then domestic stock may have been brought south by other groups who subsequently transferred them to Khoisan-speakers around the Caprivi/southern Zambia. Such a suggestion is supported by Ehret (1998) who says that the words for ‘ram’ ‘young sheep’ and ‘milk ewe’ were all came from an eastern Sahelian language to Khoe. Güldemann (2008), although challenging Ehret’s methodology in simply using lexical criteria, supports the idea that the earliest Proto-Khoe: “...may well have been familiar with domesticated animals and have had a partly sedentary life style” (ibid: 106).

Early evidence for domestic stock in southern Africa comes from two sites in southern Zambia: Salumano ‘A’ dated to 2400-2300 BP, Situmpa dated to 2200 BP (Phillipson 1989), one site in Zimbabwe, Bambata dated to 2140 BP (Walker 1983), and AMS-dated cattle and sheep bones found at Toteng in northern Botswana, dated to c. 2000 BP (Robbins et al. 2005, 2008, 2009). These dates are no earlier than the first sign of domestic sheep at the Cape dated to 2400-2100 BP at Spoegrivier (Vogel et al. 1997; Webley 2001) and around 1950 BP at Blombos (Henshilwood 1996), Die Kelders (Schweitzer 1979) and Kasteelberg ‘G’ site (Sadr *et al.* 2003), which suggest that once the animals entered southern Africa they moved across space very rapidly.

Pottery known as ‘ripple-rim ware’ has been found in a broad band south of the riverine systems in northern Namibia and Botswana, across to Limpopo Province

(Smith 2005a). It is dated in these northern sites to around 1850 BP, however, more recently dating of its occurrence further south in the Northern Province of South Africa shows a much later date of within the last 300 years (Couzens & Sadr 2010).

It is in the nature of pastoral societies that mobility has a direct influence on herd quality and survival. No doubt this was even more crucial to the earliest food producers entering the sub-continent, but it has meant that the evidence of their passing is at best fragmentary. It is this patchily dated archaeological evidence that bedevils an easy interpretation of how food production spread across southern Africa.

The entry of sheep, and how they got to the Cape has been debated, and two models are currently offered:

1. That the animals were transmitted via internal exchange systems of aboriginal hunters, and passed on 'down-the-line', ultimately reaching the Cape (Sadr 2004). In this model, Khoekhoe herders were late arrivals at the Cape, and that pottery could have been independently invented (Sadr & Sampson 2006);
2. That immigrant Khoe-speakers took up shepherding from Khoe-Kwadi speakers who introduced the vocabulary for sheep keeping described above, and they spread with their animals, along with pottery, to the Cape (Güldemann 2008; Smith 2005a).

Sadr's (2004) model of indigenous development of sheep keeping at the Cape is predicated on his interpretation of excavations he conducted at Kasteelberg 'G' site, where he is certain that he can see local shifts from hunting to herding. Smith (2006) is not convinced, and sees what materialised from KBG as analogous to what was found at Witklip (Smith et al 1991), which demonstrated a 'hunter' signature quite independent and separate from the 'herders' of Kasteelberg. In Smith's view, the low numbers early domestic sheep bones found at the sites mentioned above c. 1950 BP are an indication of breeding flocks of at least 100 animals in the vicinity of each site, as this is the minimum numbers required to sustain the flock, while having an off-take of meat and milk (Smith 2005b).

Implications for the Spread of Pastoralism to Southern Africa

The two models for the introduction of sheep to the Cape have implications for the spread of pastoralism to southern Africa as a whole. Because of the rapid spread of sheep across the subcontinent seen in the radiocarbon dates, Sadr's idea of hunters-with-sheep becoming fully-fledged shepherds implies that the transition from hunting to herding can be accomplished easily and without access to a pastoral role model.

Ingold's (1980: 140) thesis that even the original domestication event in the Near East occurred around agricultural settlements, and that specialised pastoralism was a much later offshoot, begs the question: is it possible for hunters to become herders without a long apprenticeship and knowledge of husbandry (herd management and sustainability)?

The well-watered areas of the northern fringes of the Kalahari along the Kavango River or around Lake Ngami are where hunters could have learned husbandry skills, and taken on the Khoe-Kwadi language of the pastoralists. The earliest AMS dates for cattle and sheep herding at Toteng offer the possibility that this happened around 2000 BP. Such precedents may well be what ultimately led to the occupation of the Nata/Botletle River systems further east in Botswana where Khoe-speaking Bushmen are today mixed agriculturalists. Cashdan (1986) outlines several hypotheses for the origins of these people that she calls 'Khoisan-speaking Negro hunter-gatherers' because of their distinct physical type.

Initial ideas were that they were a mixture of local Khoisan hunters and Iron Age farmers, but noting Nurse *et al.* (1985: 151) who say although these people are genetically 'Negro', they are quite distinct from other people around them, we might question that the admixture was with Bantu-speakers. There seems to be no doubt that they have different cultural practices from other Khoisan people in the drier areas to the west, such as totems and formal chieftainship, but they also seem to have maintained their control over the environment, in spite of Bantu-speakers' attempts at encroachment. This suggests their ancestors were no longer simply mobile hunters exploiting their food base on an immediate-return basis, but were using the riverine habitat in a more structured, and possibly delayed-return way (Woodburn 1991), and that they preceded the arrival of Iron Age farmers into the area.

Another suggestion is that they were descended from Proto-Khoe-Kwadi speakers, who may have arrived with both cattle and sheep (Güldemann 2008: 107), and who were already pastoralists, possibly connected to Henn *et al.*'s (2008) Nilotic (Datog) group. Cattle may have taken great strain in the tsetse-infested lands of the Zambesi River area (Nurse *et al.* 1985: 150), particularly when the environment of the northern Kalahari deteriorated to its present condition after 2000 BP (Shaw *et al.* 2003). The immigrants entered an environment already occupied by hunter-gatherer-fishers who were able to use the fish resources (Dornan 1925: 106-109, also Denbow 1986a: 186), as well as storage that could have facilitated the creation of a delayed-return social system (Barnard 1992: 123, 124), and predisposed them to the idea of private ownership of stock. This allowed the formation of a semi-sedentary lifestyle in control of the riverine environment, and where formal leadership may have already existed, although it is equally possible that the incoming herders were also the source of this type of social organisation. The immigrant shepherds could have interbred with the established local hunter-fishers. Being already hierarchically structured may have given them the social edge to dominate the infrastructure of the indigenous 'Bush'-speakers, passing on both husbandry skills and their language, resulting in language loss. It could also have allowed control over riverine pastures at the expense of the aboriginal 'brown' people. Among the 'black' Khoe-speakers today, totems or totemic exogamy exists. This is not found among the Bantu-speakers (such as Tswana) with whom they have contact today (Barnard 1992: 126), but they do exist among East African Nilotic herders, such as the Nandi (Huntingford 1953).

This scenario begs the question for linguists: Is there any indication that leadership might have existed among Proto-Khoe-Kwadi speakers?

An alternative scenario has been proposed for the entry of domestic stock to Southern Africa. This is around the western edge of tsetse distribution in East Africa across to

Angola. Coelho et al. (2009) suggested a pastoral connection in the genetics of Herero-speaking Kuvale herders with non-Bantu pastoralists of East Africa. While Blench (2007) would like to see a similar connection between Cushitic pastoralists and Khoesan speakers. There is, of course, the possibility that both the tsetse-free corridor connecting East and Southern Africa, and the western route were both used at different times by expanding pastoralists. The western route would ask questions of a possible Kwadi connection in southwestern Angola.

The extent of 'ripple-rim ware' found from northern Namibia to Limpopo Province of South Africa (Smith 2005a)(Fig. 1) conforms to the distribution of Negro hunter-gatherers, comprising Damara, Kwengo of the Caprivi, 'Masarwa' of northern Botswana and 'Bushmen' of Matabeleland and the Wankie Reserve, Zimbabwe (Nurse *et al.* 1985: 151), speaking Khoe-related languages from Kwadi (southern Angola) across to the Deti, among others (Botletle/Nata River areas), and south to the Limpopo outlined by Ehret (1982: map 13). It is also found further south in the Northern Cape (Couzens & Sadr 2010), although the dates from the site of Blinklipkop are somewhat later. An important question is whether this pottery is part of Bambata (van der Ryst 2006), which Huffman (2005) believes is Early Iron Age. Reid et al (1998: 87) have noted in Botswana that: "there is a strong association between Bambata ware and localities with permanent or semi-permanent sources of water". This has been supported by Denbow (1986b: 8) who reported that: "Three open air sites with Bambata ceramics...have been collected along the Botletli River...Four additional assemblages of LSA stone tools and Bambata ware...(on) the northeastern edge of Sowa Pan...(and) included groups living along the permanent river systems leading into the Makgadikgadi".

The place of Bambata is still uncertain in the history of early food production in Southern Africa, but if indeed in some way it has its source in the Iron Age, this would then tie it in with Bantu-speaking agropastoralists who were not found until at least three centuries after the first domestic animals had arrived. What might be the association? Was pottery part of an initial wave of migrants? Were they the makers of the ware, or were they part of a wider trade nexus? These questions may force us to dissociate ourselves from the limited perception that pottery narrowly equals a specific group or people. Such ambiguous associations, particularly in the early formative period when domestic stock was introduced to Southern Africa, would ask, as do Reid et al (1998: 97) that: "...rather than uncompromising change...archaeologists in Botswana might be able to demonstrate the gradual, interactive change in political economies that occurred in the first millennium AD". This might be what we could expect of peripatetics (Bollig 1987), or interstitial people moving in small groups across the landscape as pioneers into new environments. This pottery offers archaeological support for the idea of the introduction of food production in a broad band across southern Africa to a hunting population (by people speaking a Khoe language?) before there was an Iron Age presence.

Dispersal of Domestic Stock Throughout Southern Africa

Güldemann's reconstruction of linguistic variables indicate to him that: "The Khoekhoe, as they are known from historic sources, must not be equated with people who were responsible for the first spread of sheep pastoralism into the Cape 2000

years ago. The linguistic homogeneity of Khoekhoe cannot be reconciled easily with such an old age but rather suggests another, more recent event that might be correlated with other innovations among herding groups around 1000 BP” (2008: 126). Such a scenario would support Sadr’s idea of ‘hunters-with-sheep’ being the first herders.

The question still remains: were these local hunters who took up herding, or were they hunters derived from the Central Kalahari who migrated to the Cape, or were they Proto-Khoekhoe migrants?

If they were local hunters, then we must ask what the mechanism might have been for access to domestic stock, and how they learned husbandry skills. As outlined above, there are no good examples of hunters becoming herders without major intervening stages. These could be agricultural societies that had developed out of hunting communities, such as the Natufian in the Levant. These could be hunters controlling wild animals for ritual purposes, as seen in the Sahara with Barbary sheep. These could be hunters in long-term contact with herders from whom skills could be learnt. In South Africa, since there are no wild progenitors of the animals, they must have been introduced from the outside. If they were independently taking on domestic animals, why did they not choose the most obvious animal they knew intimately, the eland, instead of animals alien, both to themselves and to the environment?

If they were immigrant hunters from the central Kalahari, were they Khoe-speakers genetically descended from Proto-Kalahari speakers (as per Güldemann 2008: fig. 2)? In Güldemann’s scenario, these would have been separate from Proto-Khoekhoe.

If, however, they were Proto-Khoekhoe, and they developed later as Khoekhoe, this would make more sense archaeologically. The date of 1000 BP seems to be recognised as some form of watershed. Kasteelberg (Smith 2006) covers the period of both the first and second millennium AD. At the bottom of the sequence dated to at least 1600 BP (Sealy & Yates 1994), but possibly as early as 1800 BP (Smith 2006) there are sheep bones, with low numbers of large bovids (some cattle). Pottery is burnished, well-fired, thin walled, and has a distinctive design with spouts (Sadr & Smith 1991). Ostrich eggshell beads are large, and there are very few formally retouched stone tools. Into the bargain, there are almost no fish bones from a site only 4 km from the coast full of seals and shellfish residues, suggesting people unfamiliar with fish.

After 1000 BP, we see a new pottery style, with lugs, that has been historically associated with the Khoekhoen. However, the technique of making the pottery does not change from what had existed before. Another new element appears to be the use of portable grindstones that resulted in lenticular grooves. These same grooves are found in the bedrock around KBB, but only a marginal one was found at the site of KBA at the top of the kopjie, from where the earliest dates have come. The rest of the cultural signature remains the same as before 1000 BP.

Both Güldemann (2008) and Sadr (2008) stress the increase in cattle after 1000 BP. The archaeological evidence for this is weak, and although there is some increase in large bovids at the top of the KBB sequence, some of these could also be eland (Smith 2006: fig. 4.11). What does happen, however, at the beginning of the second

millennium AD, is the development of the Later Iron Age in the southeastern part of South Africa, where large cattle herds are deemed to have been the norm among Nguni-speakers. I would suggest there is no coincidence that we start to see increases in cattle at the Cape after 1000 BP, and contact with the Eastern Cape as the source.

The Moving Frontier/'Bow Wave'

When John Alexander (1984) wrote his paper on trying to understand the first entry of food production into southern Africa there was a general assumption at the time that Iron Age farmers were responsible for all domesticates arriving in the sub-continent. We are now more positive that farmer societies arrived after the introduction of domestic animals. This does not mean, however, that the initial frontier was not stimulated at source in East Africa by farming people, and the perceived need for pastoralists to find new territories.

Taking Alexander's theoretical model we might postulate that it may have been multi-waved, with the first entry from the north into the Kalahari, then a subsequent wave south and west into the Cape. In both cases the stock would have been entering new territories with different plant species that needed adjusting to with time, and encountering people who would have had no experience with either sheep or cattle, or with animal husbandry.

The initial or 'moving frontier' would probably have been experienced by small pioneering groups with their stock. They would have hunted wild game, just like their new neighbours, but would have been fully pastoralist in their approach to livestock, and not simply 'hunters-with-sheep'.

After a period of time the herders would have consolidated their pasture territories as pressure mounted with more domestic animals and herders on the landscape. This could have taken the form of building stone kraals, as certain areas might have been repeatedly visited on a seasonal basis, making such labour-intensive work worthwhile. This consolidation phase has been called a 'static' frontier (Ibid: 13), and more pressure would have existed on aboriginal hunters and their prey species. This is also the time when hunters could learn husbandry techniques from the herders, if they felt this was a good alternative to hunting. According to Mutundu (1999: 87) territoriality and private control of resources would be required for hunter-gatherers to take up food production.

If we assume that 'black' Khoe-Kwadi speakers brought domestic stock into the Northern Kalahari some 2400 years ago, how did the transition/transfer of the animals, as well as linguistic shift, create formative Khoekhoe society with 'brown' hunters adopting pastoralism? Language shift and loss can occur given the right circumstances between hunters and herders. For example, the rinderpest epidemic of the 19th century hit Maasai herders very hard, with enormous stock loss that required succour from neighbouring agriculturalists and hunters. Aasáx hunters were subjugated by Maasai refugees who stopped the hunters using their own language, forcing them to speak the language of the herders. Once Maasai herds recovered, the Aasáx hunters went along with the herders to the extent that by the 1920s their language had virtually disappeared (Brenzinger 1997: 279). This means that language loss can happen as quickly as a single generation.

In this example, the prime mover was cattle disease that massively affected local economies. One possibility is that the association of 'brown' hunters and 'black' herders in the Northern Kalahari had already cemented the position of the hunters as lower class members of the wider social relations between 2400-2000 BP. By the time the Kalahari environment began to dry up c.2000 BP towards its present conditions, could a similar situation as the Maasai/Aasáx have occurred? In this scenario, the 'brown' hunters would have already adopted small stock into their economy along with the language of the herders. Their subsequent movement across South Africa was then as 'brown' Khoekhoe herders. The prime mover in this case would have been environmental degradation.

An important point is that the hunters would have been in contact with herders and a system of husbandry for several generations before the pressure to migrate occurred, and having adopted the language of pastoralists were thus 'herders-who-hunt'.

At Kasteelberg 'B' site' in the Western Cape, the consolidated phase would have coincided with the heavy exploitation of marine mammals, such as seals, and the huge numbers of both bedrock and portable grindstones with grooves used to grind ochre most likely to be mixed with seal fat as body adornment (Smith 2005).

Conclusions

Currently, not only are there considerable gaps in the archaeology of early herding in Southern Africa, but questions of who the early herders were and what language they spoke remain unclear. Recent genetic work by Henn et al. (2008) suggesting a pastoralist migration to southern Africa from Tanzania has opened an important door to potentially understanding how domestic stock came south. Their suggestion is that the movement of pastoralism was independent of Bantu-speaking people and suggests that contact was between an East African Nilotic-speaking group (Datog) and Sandawe, with hunting people in southern Africa

One problem is that we do not have a good handle on the genetic make-up of those people who lived in South Africa prior to the arrival of domestic animals. This is particularly true of the Cape, and is not for want of trying, but unfortunately previous attempts to extract ancient DNA from hunters skeletons on the Cape coast proved fruitless. A new attempt is under way, and initial results are very promising.

The linguistic gap is just a difficult to close, as we need to know how, and from where, the Khoekhoe language developed. The hypothetical sequence of Khoe-Kwadi family development offered by Güldemann (2008) would be an important framework on which to attach other independent variables, such as genetics and archaeology. It is possible that the 'black' Khoe-speakers of northern Botswana might offer both genetic and linguistic clues to this.

Linguistic questions raised by Güldemann that could be answered by archaeological support: was early Khoe Kwadi pastoralism restricted to sheep, or did it include cattle? Was "the pastoralist component acquired by early Khoe-Kwadi speakers briefly before their southward expansion, in their staging region along the northern

boundary of the Kalahari Basin, or... [did it have]... a longer historical standing in this population"? (Güldemann 2008: 118-119).

The transition from hunting to herding cannot be assumed to be a simple process. Hunters practising an immediate-return strategy of food procurement have a world-view that the environment shares with them, and they, in turn, are required to show respect by sharing the bounty among the group. This works against any attempt either to control resources or people. Thus such hunters exist, and see themselves, as part of the environment. Herders, by contrast control their animals, and this leads to a world-view where individuals can own many animals, and have access to the labour of poorer individuals. Transforming from one system to the other requires so major a psychological jump it is probably correct to ask why it should take place at all, and where it did, could it have happened without external role models?

The earliest experiments with animal domestication come out of long periods of control over small stock in the Near East where selective culling of wild animals was practised (Zeder 2008). Movement of these animals into new habitats appeared to coincide with grain agriculture, and possibly selection for woolly animals (Flannery 1965), which would indicate selective breeding and changes in morphology, a criterion for domestication. Thus specialised pastoralism in the Near East can be assumed to have been an off-shoot of agropastoralism. The model proposed by Smith (2005a) is that this specialised pastoralism spread from the Near East to North Africa c.7800 BP (Zeder 2008), and that any native wild genes of African cattle were incorporated after this time.

In southern Africa, we know that the herders first met by Europeans at the Cape of Good Hope even before the settlement at Table Bay was set up in 1652, spoke a Khoe language that was closely related to that found in northern Botswana (Westphal 1963). Thus we have to ask were the ancestors of these Khoe-speakers the ones who introduced sheep and pottery to the Cape c.1950 BP? If we believe Sadr (2004), the answer is no. Sadr's idea of the 'Neolithic' seems to be based on local hunters having access to stock and independently becoming herders, while at the same time spreading the stock across southern Africa. Both ceramics and sheep migrated by diffusion through internal exchange networks (called *hxaro* among the Ju/'hoansi, cf Wiessner 1994). These hunters are suggested as having taken up a few sheep and were able to sustain flock growth to a point that by c.1800-1600 BP they had sizeable flocks that have been found on Kasteelberg 'herder' sites (Smith 2006).

The data offered here would make this scenario implausible, and the idea of a 'Neolithic' expansion with local hunters taking up domestic stock independent of immigrant herders is questionable. Even if we do not accept that domestication of animals had to accompany agriculture, and that role models for specialised pastoralism would need to exist for hunters to learn about animal husbandry, the advent of domestic animals to the northern Kalahari, possibly between 2400-2300 BP, and the earliest appearance at the Cape c.2000 BP would argue against there being enough time for all the social and technological aspects of husbandry (including flock numbers and sustainability) to be adopted independently by hunters across the whole of South Africa. Endemic diseases, poisonous plants, predatory animals and people would have made easy movement difficult, without having time to adjust. The social realm is of particular importance allowing the shift from an egalitarian sharing system

to one where stock ownership exists. As outlined above this requires a massive change in world-view from sharing to dominance that is not easy for any of the ethnographically recorded southern African hunters to accept, but in Sadr's (2003:208) opinion among his 'Neolithic' local populations: "...most of whom changed very little as a result to become...hunters-with-sheep".

One might add that it is this latter point where conservation ethics and hunter world-view collide, as has been demonstrated by the expulsion of hunters in recent years from the Central Kalahari Game Reserve, which was specifically set up for their use (Silberbauer 1981, see also Craig & Damon Foster: 'The Great Dance' video). The rationale is that the reserve is for animals (quoting the president of Botswana, Festes Mogai), and people cannot be part of that environment. Government policies put enormous pressure on people to change identity, and to pursue new economic strategies. The exclusion of Basarwa from the Central Kalahari Reserve in Botswana should be seen against the background of Kgalagadi becoming San in order to initially qualify to be residents (Ikeya 1999), although they have later been excluded due to tourism and diamond interests.

Archaeology and climatic data, along with genetics and linguistics, may allow us to understand *how* domestic stock entered and spread throughout southern Africa, although all sources of evidence must be kept as independent variables. They, however, can only hint at *why* this occurred with such rapidity to be so widespread across the sub-continent.

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