Cultural convergence in the Neolithic of the Nile Valley: a prehistoric perspective on Egypt's place in Africa

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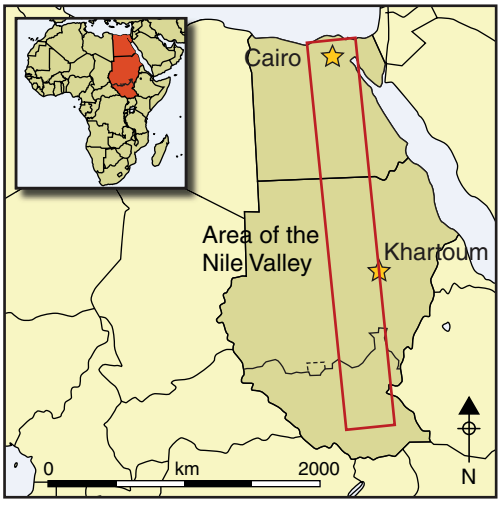

The African origins of Egyptian civilisation lie in an important cultural horizon, the 'primary pastoral community', which emerged in both the Egyptian and Sudanese parts of the Nile Valley in the fifth millennium BC. A re-examination of the chronology, assisted by new AMS determinations from Neolithic sites in Middle Egypt, has charted the detailed development of these new kinds of society. The resulting picture challenges recent studies that emphasise climate change and environmental stress as drivers of cultural adaptation in north-east Africa. It also emphasises the crucial role of funerary practices and body decoration.

Keywords: Egypt, Sahara, pastoralism, primary pastoral community, Badarian, climate change

> *"Systematic mapping of empirical networks and interconnections, without prejudging the demarcation of units, could well lead to substantial discoveries of traditional as well as contemporary systems, and a re-drawing of our picture of African forms of social organisation."* (Fredrik Barth 1978: 258)

Introduction

It has been clear for some decades that the later prehistory of Egypt cannot be adequately understood in isolation from a wider African context (see O'Connor & Reid 2003, with reviews of earlier literature). What constitutes an African cultural milieu of long duration can of course be defined on a variety of comparative criteria; but recent attempts to root Egypt's

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ANTIQUITY 88 (2014): 95–111 http://antiquity.ac.uk/ant/088/ant0880095.htm

https://doi.org/10.1017/S0003598X00050249 Published online by Cambridge University Press

early development in an African setting have focused upon questions of environmental adaptation, and in particular on environmental stress as a driver of cultural change among the early pastoralist societies of this region (e.g. Wendorf & Schild 1998; Kuper & Kroepelin 2006). Too often, perhaps, Evans-Pritchard's (1940: 16) quipping injunction—*cherchez la vache*—seems to suffice as a descriptor of the relationship between prehistoric economy and society in African contexts.

The aim of the present article is to define an important horizon of cultural change, belonging to the fifth millennium BC, linking Egypt's early development firmly to that of its southern neighbours in Nubia and central Sudan. This north–south axis of Neolithic development, first discussed in earlier publications by one of the present authors (Wengrow 2001: 95–97, 2003, 2006: 26–29, 44–59; and more recently also Edwards 2004: 49–59, 2007: 216–17; Gatto 2011a), has been overshadowed by climate-driven explanations of cultural change, with their focus upon the mid-Holocene desiccation of the 'Green Sahara' as a 'motor' of social evolution (see especially Kuper & Kroepelin 2006). Its emergence nevertheless defines a clear break with the Early Holocene past, and the establishment—throughout the entirety of the Nile Valley—of a remarkably consistent set of concepts and material practices relating to the treatment of human bodies in life and death.

Our point of departure is the comparative observation that there is nothing distinctively 'African' about the adoption of mobile cattle pastoralism as a response to climate change, or about the privileging of cattle as ritual and symbolic media. Similar patterns of response have now been documented across a much broader zone of the Middle Holocene Old World, including the southern portions of both the Arabian Peninsula (McCorriston & Martin 2009; McCorriston *et al.* 2012) and the Indian Subcontinent (Boivin 2004; Fuller 2011). Instead, as we will suggest, it is by charting the spatial and temporal distribution of specific cultural practices focused on the body—its skin and hair; its diverse contents and substances; its emissions and cavities; and its passage between life and death—that the beginnings of a distinctly African context for the later prehistory of the Nile Valley may yet come into focus.

The inception of farming economies in north-east Africa

The 'primary pastoral community', as defined here and in earlier publications (Wengrow 2003, 2006), is a phenomenon of the Middle Holocene, but its foundations, including the adoption of a herding economy, were laid in the preceding millennia of the Early Holocene. The origin and spread of farming in northern Africa was a complex, protracted and regionally variable process. By contrast with some parts of neighbouring south-west Asia and Europe, domesticated plants and animals do not appear to have been adopted as part of a single cultural 'package'. With the exception of Lower Egypt, some areas of which (e.g. Fayum) may have followed a more typically Mediterranean path of development (Phillipps *et al.* 2012), much of northern Africa witnessed the inception of herding practices centuries, or in some cases millennia, before the arrival of domesticated cereals (Marshall & Hildebrand 2002).

Domestic varieties of sheep and goat were introduced to the African continent from south-west Asia, perhaps via multiple routes of transmission—maritime and terrestrial—including the Red Sea and Mediterranean coastlines (Hassan 2000: 70–72, with further

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references; Vermeersch 2008). This initial introduction had taken place by around 6000 BC. Evidence for the economic milieu of northern Africa at this time is subject to widely varying interpretations. A Mesolithic lifestyle—centred upon fishing, hunting and foraging—had held sway across much of the Sahara since the beginning of the Holocene (*c.* 10 000 BC), when both tropical and winter rains advanced into the region (Close 1996). Human populations concentrated around the shores of revitalised lakes and rivers that formed a loosely integrated corridor for the movement of people and animals, as well as providing access to a variety of deep-water fish and larger aquatic species such as hippopotamus and crocodile (Drake *et al.* 2011).

Archaeological traces of these early hunter-forager-fisher groups are remarkably consistent across the Sahara, comprising a regular combination of ceramic containers (with impressed or incised designs), grinding stones for processing wild grasses and cereals, barbed bone hunting points and arrowheads (Haaland 1993). Evidence for body ornamentation is usually confined to ostrich-eggshell beads and traces of ochre pigment on ground stone tools. For much of the Early Holocene, seasonal movements may have been limited to the immediate environs of major watercourses (Haaland 1995; Salvatori *et al.* 2011). Research in the Libyan Desert indicates that some groups employed herding strategies such as penning to regularise access to wild herbivores, including native Barbary sheep (di Lernia 2001). More strident claims for an Early Holocene domestication of African cattle in Egypt's Western Desert (Wendorf & Schild 1998) have not found general acceptance (for a critique of faunal evidence see Grigson 2000; for a critique of contextual evidence see Usai 2005: 104, especially note 3), and new faunal analyses (Linseele 2012) cast doubt upon suggestions of a similarly early domestication date from the Kerma region of Sudan (Honegger 2010: 83).

From around 6000 to 4000 BC the frontier of monsoon rainfall began to move southwards, initiating a contraction of grasslands and watercourses across the Sahara and also in southern Arabia (Nicoll 2001; Kindermann *et al.* 2006). Over a period of millennia this gradual 'drying out' would produce the hyper-arid landscapes that characterise these regions today. Human populations in both areas (Saharan Africa and the Arabian Peninsula) responded to these changing circumstances by becoming more mobile, and by developing more focused pastoral strategies centred on mixed herds of cattle, sheep and goat (Caneva 1991; McCorriston & Martin 2009). Hunting, fishing and foraging remained important seasonal pursuits, but their new prominence in ritual and ceremonial contexts suggests that domestic animals (and perhaps meat consumption more generally) were taking on increasingly central cultural roles as mobile stores of value, to be deployed in important social transactions (di Lernia 2006). The term 'primary pastoral community' signals this new cultural orientation, and serves as a reminder that some 'secondary' animal products (such as wool and traction) may not initially have played a significant role in the pastoral economies of these regions (see Sherratt 1981). Milking and dairying, on the other hand, are attested by the fifth millennium BC in chemical analyses of lipid residues on Saharan pottery (Dunne *et al.* 2012; cf. Le Quellec 2011).

Mobility and increased investment in herding, milking and meat consumption were not the only cultural strategies adopted by North African populations during the more arid centuries of the Middle Holocene. In areas where a Mediterranean winter rainfall regime continued, such as the Fayum depression of northern Egypt, cereal cultivation—most

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probably in the seasonally watered mouths of wadis, rather than on the shores of Nile-fed Lake Qarun as previously thought (Phillipps *et al.* 2012)—was added to a diverse set of subsistence practices. In those areas where wild plant and animal resources remained abundant, sedentary (but not necessarily farming) populations are likely to have flourished. Examples of such environments would include the expansive soils and wetlands of the Nile Delta (facing the Mediterranean Sea; Butzer 2002) and the Sudanese Gezira (below the confluence of the Blue and White Niles; Edwards 2004: 27–29; Salvatori & Usai 2008: 153, 155). Although most of the evidence is inaccessible to archaeological investigation, it is therefore possible that the northern and southern boundaries of the mid-Holocene Nile Valley were densely populated by Mesolithic fisher-hunter-gatherers. It is to a more detailed account of the valley itself that we now turn.

The 'primary pastoral community' in the Nile Valley: chronology, landscape and the issue of cereal farming

Strong correspondences between trajectories of Neolithic cultural development in Middle Egypt and in the vicinity of modern Khartoum, far to the south, were first pointed out more than a decade ago, leading to the proposal that a common form of early pastoral community was established throughout the entire Nile Valley during the fifth millennium BC (Wengrow 2001, 2003). What could not have been anticipated at that time (*contra* Gatto 2011a) was the subsequent publication—resulting mostly from recent salvage excavations—of a wealth of new data from cemetery and habitation sites of this period located on the Middle Nile, between the Fifth and Second Cataracts, with notable concentrations along the Dongola Reach and in the Kerma region of northern Sudan (summarised in Wengrow 2006: 49–55; Salvatori & Usai 2008: 147–56; Sadig 2010, with further references; Gatto 2011a & b). Further information has also come to light near the Fourth Cataract (e.g. Fuller 2004) and in Egypt's Western Desert (see below and Figure 1).

These new publications fill a crucial gap in the archaeological record of early Nilotic societies. Many are accompanied by radiocarbon dates, which we bring together here for the first time in a single model (Figure 2) that also incorporates new AMS determinations from the Middle Egyptian ('Badarian') Neolithic obtained as part of a current programme of radiometric dating at the Research Laboratory for Archaeology and the History of Art in Oxford (Table 1). The radiocarbon dates collated for this analysis are available in tabular form at the online radiocarbon database for Egypt (*Egyptian Radiocarbon Database* n.d.). This resource provides all the supporting information that was published with the dates (such as raw measurement, material type and context). A total of 127 dates were obtained, with only four samples excluded from the model because of outlying measurements (Gd-6746, OxA-564, M-804 and duplicate dates OxA-26814 and OxA-26815). This amounts to all the available radiocarbon dates for the sites relevant to this discussion. The dates were grouped by site and modelled as single phases with start and end boundaries using the OxCal calibration program (Bronk Ramsey 1995). Every date was given a 5% probability of being inconsistent with the remainder of its group. During calculation, the sum function was used to produce averages of all the radiocarbon information for each site.

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Figure 1. Approximate locations of Neolithic sites in the Nile Valley and adjacent deserts.

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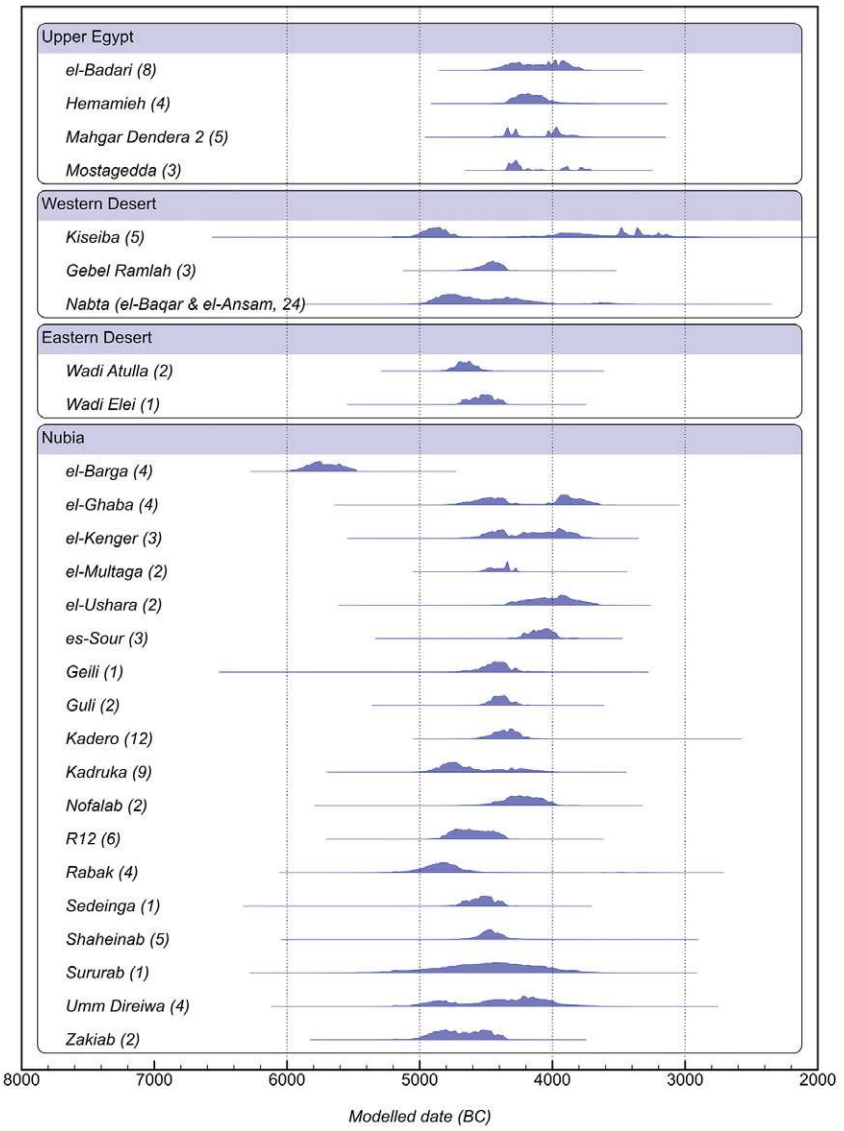

Figure 2. Dating the 'primary pastoral community': a visual summary of radiocarbon evidence from sites in the Nile Valley and adjacent deserts that exhibit clear morphometric evidence for domestic fauna and a characteristic suite of material culture for decorating the body (e.g. cosmetic palettes, bangles, combs, complex bead assemblages). It is this distinct combination of environmental and cultural data (rather than the mere presence of domesticates) that defines the 'primary pastoral community' as an archaeological horizon. Distributions shown here were obtained by summing the dates available for each site, while allocating every measurement a 5% outlier probability (see Bronk Ramsey 2009). The number of dates associated with each site is given in brackets.

A word of caution should be added about the reliability of the data set. The samples comprise mostly charcoal and shell. Radiocarbon measurements on charcoal return the date of the cessation of exchange between the growing wood and the atmosphere. If the woodlay

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Table 1. Stable isotope and radiocarbon measurements made on samples from Badarian contexts by the Oxford Radiocarbon Accelerator Unit. Two samples (X-2457–47 and X-2457–48) were obtained as pre-extracted collagen.

Site	Museum	Collection no.	Context	Material	$\delta^{13}C$ (‰PDB)	$\delta^{15}N$ (‰PDB)	Date ref.	Conventional radiocarbon age (error $\pm 1\sigma$)	Calibrated date range (95.4%)
El-Badari	Ashmolean, Oxford	1925.550	Grave 5735	animal hair	–17.3	14.1	OxA-26045	5049±39 BP	3959–3715 BC
	Duckworth Collection, Cambridge	AF.11.5.15	Grave 5342	human bone	–16.3	13.0	OxA-25917	5388±32 BP	4336–4073 BC
					–17.8	12.9	OxA-X-2457–47	5293±35 BP	4236–3999 BC
		AF.11.5.28	Grave 5394	human bone	–19.5	12.1	OxA-X-2457–48	5037±38 BP	3951–3714 BC
		AF.11.5	Area 25/5700	human hair	–19.3	18.6	OxA-26814*	3351±28 BP	1736–1532 BC
					–19.2	18.9	OxA-26815*	3368±29 BP	1744–1538 BC
		AF.11.5.60	Grave 6004	human hair	–19.8	10.0	OxA-26816	5186±30 BP	4043–3958 BC
Mostagedda	Bolton	1930.33.80	Grave 1215	textile (linen)	–25.1	–	OxA-23967	5000±29 BP	3939–3702 BC
		1930.33.44	Grave 3538	textile (linen)	–25.4	–	OxA-23927**	2679±26 BP	896–801 BC
	Royal Botanic Gardens, Kew	26884	pit or granary, Area 2000 or 2200	emmer seeds	–25.5	–	OxA-26142	5447±35 BP	4352–4243 BC
		26889		barley seeds	–26.5	–	OxA-23369	5395±45 BP	4342–4066 BC

*Unusually high $\delta^{15}N$ values imply contamination.
**Light microscope revealed cotton fibre contamination.

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unused for some time or the species was particularly long-lived, this may be significantly earlier than the date of burning. Shell dates also vary in reliability. Freshwater shellfish may incorporate dissolved bicarbonate, of geological origin and hence devoid of radiocarbon, in the synthesis of their shells. The severity of this problem varies considerably between species and may be addressed by examining values for modern shellfish. Recent studies of ostrich eggshell (Vogel *et al.* 2001) suggest that they may be subject to a systematic offset to older ages of approximately 100–200 years. On the whole, however, the uncertainty inherent in published data is very minor in light of the temporal scope of this paper.

The overall number of dates for the Nile Valley in the fifth millennium BC remains relatively small, so any attempt to establish internal subdivisions or trends must remain tentative. On the basis of what is known, two observations can be made. The first is that the characteristic features of the 'primary pastoral community' may appear slightly earlier in the Sudanese than in the Egyptian part of the valley, suggesting a possible spread from south to north during the course of the fifth millennium. The second is that the Egyptian ('Badarian') extension of this cultural pattern so far produces radiocarbon dates that form an internally consistent group, suggesting a chronological range from roughly 4400 to 3800 BC, some two centuries longer than proposed by Hassan (1985, see also 1986) on the basis of a much smaller number of absolute dates. This in turn implies a later start-date for the Naqada I phase of Egyptian prehistory and an overall shortening of the 'predynastic' (Naqada I-II) to a period of roughly five centuries (*c.* 3800–3300 BC; see Dee *et al.* 2013).

Considered as a larger set, the dates presented here for Middle/Upper Egypt and Sudan occupy a broadly similar time range that extends throughout the fifth millennium BC. They confirm the hypothesis that the Neolithic of the Nile Valley constitutes a cultural phenomenon of impressive coherence, scale and duration. It is during this period that burial grounds of varying size—but rarely exceeding a hundred individuals within a single cemetery—become a widely visible feature in the archaeological record of this region. They frequently occupy what would have been prominent topographic locations, on natural or anthropogenic mounds or at the mouths of wadis debouching into the mid-Holocene floodplain of the Nile. Over a period of centuries a new type of cultural landscape would therefore have taken form along the low desert bordering the valley. Studded with ancestral burial grounds covering richly furnished graves, its emergence represents a clear cultural break with the Early Holocene past, and suggests the inception of new forms of territoriality along the main north–south axis of the river (Edwards 2004: 40; Garcea & Hildebrand 2009).

These developments are echoed in the changing location of herding and fishing camps along the margins of the floodplain. Seasonally occupied sites of this kind constitute our main evidence for the nature of human habitation along the Nile Valley during the fifth millennium BC. Comprising loose configurations of post-holes, dung deposits, hearths and thin ash-middens, the sites have a broadly similar character along both its Egyptian and Sudanese courses (e.g. Welsby 2000; Hendrickx *et al.* 2001; Honegger 2001; Sadig 2010) and are best understood as the remains of seasonal encampments, reflecting high levels of residential mobility among herder-fisher-forager populations (cf. Butzer 1976: 14; Trigger 1983: 28; Caneva 1991; Midant-Reynes 2000: 160). Indicators of sustained investment in cereal farming and sedentary life—such as durable architecture, heavy plant processing equipment, and high proportions of cereal grains in botanical samples—make

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their first appearance in the Egyptian Nile Valley only later, in the early fourth millennium BC (Midant-Reynes & Buchez 2002: 485–99; Wengrow 2006: 33, 76–82, with further references).

Some comment is required here on the reported presence of domestic wheat and barley at Badarian habitation and cemetery sites, excavated in the early twentieth century by Guy Brunton and Gertrude Caton-Thompson (Brunton & Caton-Thompson 1928; Brunton 1937, 1948). These early reports have since become the basis for a widely held view that cereal farming formed a significant component of the Neolithic economy in Middle-Upper Egypt during the fifth millennium BC (e.g. Trigger 1983: 28; Hendrickx & Vermeersch 2000: 39; Bard 2008: 87; Hendrickx *et al.* 2010: 19; Fuller & Hildebrand in press). This has led many commentators to suggest that surviving (and highly ephemeral) habitation sites on the low desert spurs were once peripheral to fully sedentary villages located closer to the floodplain, and long since destroyed or hidden by fluvial sedimentation (e.g. Hendrickx & Vermeersch 2000: 40; Bard 2008: 87).

The problematic nature of the botanical record from el-Badari and its environs was discussed in a detailed review by Wilma Wetterstrom (1993: 214–20), who characterised both the plant and animal remains recovered there as "a highly unsatisfactory and incomplete sample of the Badarian economy" (Wetterstrom 1993: 216). She noted that "desiccated and carbonised cereals were occasionally found in village sites [i.e. seasonal encampments] in pits, as pockets scattered through the fill, and in pots". The reported presence of cereals in Badarian graves appears to relate to the contents of two ripple-burnished pots found in the general area of Cemetery 5600 (el-Badari; Brunton & Caton-Thompson 1928: 13), a leather bag from Grave 2224 and a black bowl from Grave 459 (Mostagedda; Brunton 1937: 58), and a pot from Grave 2522 (Matmar; Brunton 1948: 11). Wetterstrom (1993: 216) further observed that "no systematic studies of plant or animal remains were carried out at any of the Badarian sites", but that "items encountered during excavation were collected and in some cases turned over to experts for identification".

Recent re-examination of plant material from the el-Badari region, held at the Agricultural Museum in Cairo (Cappers & Hamdy 2007) and at Kew Gardens in London (Nesbitt *pers. comm.*) bears out the original identification of domestic cereals (4 cases of barley and 11 of emmer wheat) among samples collected by Brunton and Caton-Thompson. However, questions remain about the attribution of these specimens to Badarian (i.e. fifth millennium BC) contexts. The botanist originally engaged to examine Badarian grain specimens from Matmar suggested, worryingly, that they "do not appear to be of any great age" (Brunton 1948: 23, citing letter from Boodle); and Wetterstrom (1993: 216) has since noted that some of the "pits and granaries" assigned to this period "contained no datable materials and might have been intrusive from later times". Unpublished letters from Caton Thompson to P.E. Newberry, now held at Oxford's Griffith Institute, cast further doubt on the recovery methods used at these sites (see also Caton-Thompson 1983: 90).

A systematic review of site reports and associated documentation (Foster forthcoming) reveals that, in fact, only 2 out of 64 specimens of large-grained grasses originally attributed by Brunton to the Badarian period appear both a) to be clearly identifiable as domesticated cereals, and b) to derive from secure archaeological contexts. Both are from burials at the site of Mostagedda. They comprise a poorly preserved sample of emmer wheat from Grave

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459 (see above), and barley husks from the naturally preserved abdomen of a human burial in Grave 467 (Brunton 1937: 58). No plant remains or durable architecture were reported from Mahgar Dendera, the only Badarian habitation zone excavated on a significant scale since the early 20th century. Located 150km to the south of el-Badari, on the low fringes of the desert, this latter site was interpreted by its excavators as a camp used seasonally by herding and fishing groups (Hendrickx *et al.* 2001).

Despite these limitations, evidence for cereal cultivation along the northern reaches of the Nile Valley during the Badarian period can now be provided by direct dates on two grain samples (Kew 26884 and 26889) obtained as part of the new dating programme (Table 1). Both derive from Guy Brunton's excavations at Mostagedda (1928–29). Regrettably their precise archaeological contexts can no longer be securely identified. The dates are significant but—in the absence of other forms of evidence—they should not be taken as proof of a strong reliance on agriculture or sedentary life. The overall patterning of the archaeological record in Middle-Upper Egypt suggests, instead, that low-level cereal farming on the floodplain was practiced within the context of a seasonal herding, fishing and foraging economy.

The existence of more fixed and permanent settlements closer to the Nile floodplain cannot be entirely ruled out. But it is equally possible that fully sedentary villages may only have existed on any scale to the north and south of the valley, upon and adjacent to the Nile Delta (as exemplified at Merimda Beni Salama; Eiwanger 1982) and on the Sudanese Gezira (Usai & Salvatori 2005). Within the valley itself enduring attachments between people and place appear to have been established primarily through elaborate funerary rites, collective feasting and repeated use of burial grounds, while habitation sites—on current evidence—remained for the most part fluid and ephemeral in nature (Reinold 2001; cf. Wengrow 2006: 49–50, 63–71).

Body cultures: the ritual milieu of the primary pastoral community (*c.* 5000–4000 BC)

The importance of funerary sites as foci of territorial attachment is exemplified with particular clarity at a group of three small Neolithic cemeteries, recently discovered at the foot of a promontory called Gebel Ramlah, which lies within Egypt's south-western desert approximately 100km distant from the Nile (Kobusiewicz *et al.* 2004, 2009, 2010). Dating to the mid fifth millennium BC, these burial grounds are significant—not just as evidence for close cultural links between the Nile and the Sahara at this time (see also Briois *et al.* 2012)—but also because of their remarkably undisturbed condition. Successive burials were repeatedly established on the same portion of ground, creating dense clusters of interlaced graves. Where disturbance was caused by new burials, this was rectified on the spot by such *ad hoc* procedures as the repositioning of displaced teeth within the skull, or the careful reassembly of bones to ensure that ornaments remained in those places on the body to which they were originally attached: 'keeping it all together', as the excavators put it. Health profiles reconstructed for the individuals buried at Gebel Ramlah are informative concerning wider matters of diet and economy. It is especially notable that not a single sign of caries is reported from an analysis of nearly 800 human teeth, suggesting that domestic

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cereals played a relatively insignificant role in the diet of these early Nilotic pastoralists (Kobusiewicz *et al.* 2010: 204–207).

Personal ornamentation forms the largest single category of grave good at Gebel Ramlah (Kobusiewicz *et al.* 2010: 107). Many ornaments survive *in situ*, indicating that they covered a variety of body parts including the wrists, ankles, arms, legs, head, neck and around the waist. Nose and lip studs are also common. This strong emphasis on the decoration of the human form is consonant with a much wider system of funerary practices, strongly characteristic of the fifth millennium BC. Throughout the Nile Valley, and into the neighbouring deserts, treatments of the body in death became remarkably uniform in this period (for detailed references on what follows, including discussion of particular sites, see Geus 1991; Reinold 2006; Wengrow 2006: 50–59). Individuals were typically laid in roughly shaped pits, knees contracted and hands often cupping the face. Before interment the intact body was usually wrapped in animal skins or reed mats and decorated with a rich array of ornaments made of coloured stone beads, pierced shells, worked bone, tooth and ivory. While each burial constitutes a unique configuration of objects and human remains, the great majority follow a similar pattern of depositional practices, pointing towards a common ritual template—and an associated range of portable material culture—that was shared by groups throughout the Nile Valley. At Gebel Ramlah, as elsewhere (e.g. el-Badari, Mostagedda, Kadruka, R12, el-Ghaba), these practices were applied equally to adults and infants of both sexes.

Shared features of Neolithic burial across the Nile Valley extend beyond the treatment and ornamentation of the corpse to the deposition of functionally similar artefacts within graves. These too are highly portable—and so consistent with the requirements of a relatively mobile lifestyle—and are closely associated with the presentation of the body, hair and skin (for Egyptian examples, see Figure 3). They include a range of cosmetic articles and implements as well as small vessels made of clay, stone or ivory. Combs of bone or ivory, and spatulas used with hollowed tusks for mixing and pouring fluids are among the grave goods documented throughout the valley, as are stone grinding palettes accompanied by rubbing pebbles (themselves often carefully selected in colourful varieties) and pigments for making body paint (Stevenson 2009; some of the earliest attestations of cosmetic palettes, dating to the mid–late sixth millennium BC, derive from Djara in Egypt's Western Desert; Riemer *et al.* 2009). Pigments are sometimes found within miniature containers of ivory, shell, pottery or ornamented cow horn. Mace-heads, which only later became a common grave good in Egypt, make their first appearance in central Sudanese burials at this earlier time (e.g. Lecointe 1987; Krzyżaniak 1991). Markings on anthropomorphic figurines of the period point towards practices such as tattooing and scarification (Edwards 2004: 51), reinforcing the overall impression of a complex and exuberant material culture, strongly focused on the social presentation of the body in life as well as death.

Meat consumption is likely to have formed an important component of this ritual milieu, as indicated by the inclusion of cattle horns and other animal remains (both wild and domestic) within human burials (Wengrow 2006: 56–59). Such practices may have had deep antecedents in North East Africa, extending back to the Pleistocene–Holocene transition. For example, at Toshka, in Lower Nubia, an unusual discovery of human burials dated to the terminal Pleistocene (*c.* 12 000–10 000 BC) includes a number of interments

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Figure 3. Grave goods from el-Badari, burials 5112 (above) and 5130 (below). Above: greywacke palette (UC9060), clay plugs (UC9055, UC9056), bone awl (UC9052), group of nine pebbles (UC 9065, UC9073), hippopotamus-ivory vase (UC9054), string of beads (UC9064), fragment of hippopotamus-ivory bangle (UC9047), lump of malachite (UC9061), copper pin (UC9059). Below: fragment of hippopotamus-ivory spoon handle (UC9193), shell and pebble beads (UC9195), hippopotamus-ivory comb (UC9194). Photographs by Ivor Pridden, courtesy of the Petrie Museum of Egyptian Archaeology, University College London.

in which elements of cattle skulls were placed with the dead (Wendorf 1968: 875; cf. Geus 1991). The keeping of increasingly large domestic herds would have augmented the potential for ceremonial feasting of this kind, and for the cementing of social bonds that accompanied such occasions.

The range of materials and substances used for body ornamentation in the fifth millennium BC greatly exceeds what is attested for earlier periods of prehistory in most of the Nile Valley and adjacent regions (a possible exception in the Kerma region is noted below). To an established repertory of ostrich-eggshell beads was now added a much wider spectrum of decorative resources. Represented among more than 500 individual beads

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and pendants from Gebel Ramlah, for instance, are carnelian, diorite, haematite, green gneiss, white limestone, turquoise, agate and Red Sea shells (*Nerita* sp.). Bracelets of ivory and shell, together with lip and nose plugs of carnelian and turquoise, complement these effusive displays. Jasper, alabaster, steatite and serpentine are also found among the materials used for bead manufacture at broadly contemporaneous cemeteries in the Nile Valley.

Many of these materials derive from mineral deposits and outcrops to the east of the valley, which also supplied the coloured pigments (red ochre, yellow limonite and green malachite) used in body painting. Sheets of mica, including one found at Gebel Ramlah—fashioned into the shape of a fish, with drilled suspension holes for ease of carrying—further attest to eastward links. The common presence of these various substances in cemeteries located close to the Nile floodplain implies regular and extensive prospection along wadi routes leading between the valley and the Red Sea Hills, which may have enjoyed higher rainfall at this time (Vermeersch 2008), providing opportunities for grazing herds, as well as seasonal foraging and hunting (see Majer 1992; Wengrow 2006: 27, with further references).

Occasional finds of similar burials deep within the Eastern Desert (e.g. Murray & Derry 1923; Sadr 1997; Friedman & Hobbs 2002) confirm what is now also evident from Gebel Ramlah: that the use of funerary rites to signal attachments to particular grazing lands and pathways of movement extended spatially beyond the Nile Valley, both east and west. Recent discoveries at the Neolithic cemetery of el-Barga, in the Kerma region of northern Sudan, raise the further possibility that this ritual-territorial system, and its sophisticated modes of body decoration, extend back in time beyond the fifth millennium BC (Honegger 2004, 2005, 2010). Current dates for these much earlier burials—replete with cosmetic grinding palettes, cattle skulls and abundant ornamentation—fall within the first half of the sixth millennium. They therefore remain chronologically isolated by some centuries from the cultural milieu to which they so evidently belong (see Figure 2). The possibility thus remains open that the 'primary pastoral community', as described here, has considerably deeper roots in the Nile Valley than are currently apparent.

Conclusion

The question will inevitably, and rightly, be asked: what kind of historical entity *is* the 'primary pastoral community'? Clearly it is inconceivable that communities throughout the entire length of the Nile Valley, a distance of *c.* 1800km, shared anything approaching a conscious social identity (e.g. of the sort that could be articulated in tribal or ethnic terms) during the fifth millennium BC. Instead, what came to be shared across this extensive region were the materials and practices—including, and perhaps especially, modes of ritual practice—out of which more local contrasts and group identities were constructed. It may be precisely the maintenance of local differences within a shared social milieu that gave rise simultaneously to such geographically expansive uniformities and, within them, to the kind of internal variations observed in ceramic assemblages and other traditional markers of archaeological 'cultures' (cf. Gatto 2002; Kobusiewicz *et al.* 2010: 152–57). Recent work on the origins of Eurasian steppe pastoralism (e.g. Hanks & Linduff 2009; Frachetti 2012) usefully demonstrates how incremental processes of this kind may be rapidly escalated by

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the intensification of stockbreeding as a mode of livelihood and common measure of value. They are not, however, unique to mobile or pastoral societies in Old World prehistory.

We conclude by emphasising that our definition of a 'primary pastoral community' in the Nile Valley is a holistic one, giving equal weight to empirically observable uniformities in ritual practice, material culture and ecology. As such it stands in contrast to the recent and narrower focus on environmental stress as a long-term driver of cultural change in north-east Africa. It seems important to insist on this methodological distinction, not least because such recent catastrophes as the genocide in Darfur have been linked to what are supposedly millennia-old cycles of climate-driven demographic change (Kuper & Kroepelin 2006: 807). From an archaeological point of view we hope, at the very least, to have demonstrated that alternative interpretations of Africa's deep past—and hence of its more immediate future—are not only possible, but also plausible.

Acknowledgements

Research presented in this paper is funded by The Leverhulme Trust and forms part of the project 'Origins of Nationhood: a New Chronology for the Formation of the Egyptian State'. We would like to express our sincere thanks to the many curatorial staff and excavators who assisted us in identifying and accessing appropriate samples for radiocarbon dating, in particular Stephen Quirke (Petrie Museum), Mark Nesbitt (Herbarium, Kew), Liam McNamara (Ashmolean Museum), Marta Lahr (Duckworth Laboratory), Carolyn Routledge (Bolton Museum and Art Gallery) and Donatella Usai.

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Received: 28 February 2013; Accepted: 12 April 2013; Revised: 30 August 2013

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