
Intersecting Generations: Burying the Old in a Neolithic Hunter-fisher Community

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This article explores the potential of studying the social dimensions of old age and aged bodies in the past. Because old age is relative to life-expectancy figures, diet and lifestyle, calendric years are avoided when defining old age. Instead a composite approach is advocated that includes, for example, traces of wear and joint diseases to identify a threshold between adulthood and a period of seniority. The approach is applied to the Middle Neolithic burial ground Ajvide on the island of Gotland in the Baltic Sea. Eleven individuals (six men, five women, or 18 per cent of the 62 analysed burials) are regarded as 'aged bodies'. At Ajvide a majority of these individuals are buried in graves that overlap earlier burials containing younger individuals of the same sex. It is argued that this pattern is due to eschatological ideas of 'generational merging' of bodies. This practice changes over time, which is suggested to be a part of the overall hybridization processes at the site.

In recent years interest in social and cultural aspects of old age has increased in philosophy, sociology and history and also, to a lesser degree, in archaeology. In anthropology, old age has, for the last three decades, been the subject of a growing number of studies that have dealt with various social implications of advanced age in small-scale societies (e.g. Foner 1984; Cohen 1994; Lamb 2000; Bledsoe 2002; Cliggett 2005; Rawlins 2006). The same trend is also apparent in the discipline of history (e.g. Minois 1989; Kertzer & Laslett 1995; Johnson & Thane 1998; Ottaway 2004; Carvallo 2010). In archaeology, however, the topic is still poorly explored; it is only recently that a few scholars have begun to examine issues of old age and its relations to other identity-based parameters such as sex/gender, social status or type of society (e.g. Welinder 2001; Sofaer 2006; Gilchrist 2009; Gowland 2009; Appleby 2010; 2011; Kjellström & Welinder 2012). Although still few in number, these and other works show great potential in studying issues of old age in prehistoric contexts.

Age has always been an important continuous variable in social analysis, but the recent focus on life-course perspective has shown the importance of also studying age as an intersectional variable (e.g. Gilchrist 2000, 236). One example is research on

children and childhood in archaeology, anthropology and history over the last 20 years, which has provided many interesting and important insights into how different societies deal with children's needs and capabilities (Baxter 2005; Lillehammer 2010; Fahlander 2011). Thus, this research is not just about emancipation of a neglected category, but also about exploring how attitudes towards children and childhood may also be informative about the adult world. Similarly, dedicated studies of the last stage of the life cycle can also be interesting to explore, not only because old age as a social phenomenon is a poorly researched theme, but also because attitudes towards old age also say something about the society in general (cf. Hazan 1994; Featherstone & Wernick 1995; Beauvoir 1996). Old age is particularly interesting since it tends to be a turning point in the life cycle when general structures concerning gender and status are renegotiated and become blurred. For instance, in many societies post-menopausal women can get access to otherwise exclusively male communities (Kerns & Brown 1992; Crown & Fish 1996, 810; Lamb 2000, 240–43). Older women may also increase their influence when families are brought together through the marriage of their children (Lamb 2000, 240).

Besides general questions of power, status and gender, the overall life-expectancy figure and the proportion of elderly are important variables to consider. A high life-expectancy figure can affect how societies 'remember' by maintaining stability or change because individuals of advanced age overlap more generations (Minois 1989, 9–12; Solokovsky 2009, 4). A large proportion of aged individuals in a society may thus have a conservative effect, since the elderly tend to support and maintain traditional rites, customs and social structure (Foner 1984, 37; Bourdelais 1998, 111; Reulecke 2008). If life expectancy is short, or if the proportion of the elderly becomes too small, it may thus affect the continuity of a society's traditions and collective memory (Minois 1989, 210).

A life-course perspective on old age can thus provide an unorthodox perspective on familiar issues and can therefore open new doors to fundamental archaeological questions and themes. In this article, I shall discuss some social aspects of advanced age, old age as a stage in the life course and their consequences for archaeological interpretation. The approach is illustrated by a special study of the oldest individuals buried in the Middle Neolithic (c. 3300–2350 BC) burial ground of Ajvide on the island of Gotland in the Baltic Sea.

Who is old? Age and ageing

A central but elusive question concerns who can be considered 'old' and how a period of 'old age' may be defined in different social contexts. The biological changes that come with advanced age are often easily recognized, but the point in the life course when an individual passes from adult to elderly varies quite widely both within and between different societies in the past as well as in the present. The modern Western limit for retirement between 60 and 70 years in Europe is not that far from medieval norms (Shahar 1998, 43). But examples from Roman texts show that old age may have already begun by the early 40s (Parkin 1998, 23; cf. Solokovsky 2009, 3). Of course, old age is relative to life-expectancy figures, diet and lifestyle. During the past 200 years, average life expectancy at birth has doubled from about 40 years to over 80 years in most western European countries (see Laslett 1995, 13ff.). It would, however, be a mistake to trace that trend back in time and, for instance, presume that ages of about 70 years are unique to modern welfare states. The fact that some individuals may reach quite an old age has clear links to diet, subsistence and lifestyle. For example, such advanced ages are not uncommon in many prehistoric populations of the past (Chamberlain 1997, 249; Welinder 2001).

To discuss age in calendar years, or as fixed periods in life such as childhood, adulthood and seniority, is deeply embedded in modern thought. It may, however, not be the best way to approach issues of age in prehistory. For instance, some societies employ a relative way to understand age in terms of being 'younger than', 'older than', or 'as old as' something else (Hammel 1984, 142–3). In other cases, stages in life are relative to embodiment (sexual maturity, growth of facial hair, menopause, etc.), or according to certain personal events such as the first child, marriage or by achieving certain tasks (Maybury-Lewis 1984, 129–30). The social implications of age are also frequently dependent on, for example, social status, kinship, sex/gender, etc. (Lamb 2000, 9; Parkin 1998, 34; Sofaer 2006; Fahlander 2011, 29f.). The list continues, but the main point here is that chronological age in calendric years is not necessarily the best starting point for archaeological studies. From this, it also follows that fixed age-spans such as psychological stages (e.g. child, teenager, young adult, adult and senior) or categories employed by osteologists (e.g. infant, juvenile, adult, mature and senile) may be too categorical. Instead, we need to depart from the particular demographic profile of each given population. Who is to be considered 'old' in a particular prehistoric society is a question to examine, not a given fact.

In archaeology the primary category of data for archaeological study of old age is burial data and the remains of buried individuals. Unfortunately osteological age estimations are quite uncertain when it comes to advanced age. While it is relatively easy to distinguish between children of different ages there are fewer clear indications of more mature ages (Cox 2000, 62; Crews & Bogin 2010, 125). It can also be difficult to properly distinguish traces of advanced age from changes induced by disease, poor diet or wear from a stressful lifestyle (Fausto-Sterling 2005, 1493). For instance, there may not necessarily be any major differences between a skeleton of a 40-year-old who worked hard and the bones of an individual who was 20 years older but had an easier life (Cox 2000, 64, 75; cf. Appleby 2011, 234). When testing methods on known materials it seems that a complete skeleton yields, at best, a rough estimate of the age of death within quite a wide time span. Furthermore, the age estimation of individuals 30–40 years old tends to be exaggerated, while that of individuals over 40 is often underestimated (Cox 2000, 75; Sofaer 2006, 72–3). Without going into too much detail concerning the osteological methods of determining advanced age, it is nonetheless apparent that estimates in calendar years do not work very well when trying to establish a distinction between adult and elderly in a population.

It would not be meaningful to simply pick a year after which all individuals are considered 'old'.

Although we cannot 'see' grey hair, wrinkled skin, impaired sight or hearing in our data, some of the bones still may give further indications in terms of traces of wear or certain diseases that would have resulted in different bodily appearance or impairment (cf. Appleby 2011, 236). In order to specify who is elderly and who is not in a given population, it may be helpful to discuss 'aged bodies' rather than chronological cohorts. Such a category can be based on traces of different physical alterations of the skeleton associated with a long life together with composite estimations of chronological age. Such an approach may thus allow for a more flexible categorization that may actually omit certain individuals that, despite a long life, may still have appeared younger. In the following I will attempt to identify such a category of aged bodies among the burials of the Middle Neolithic cemetery at Ajvide on the island of Gotland in the Baltic Sea (Fig. 1). This is well-documented material of appropriate size and it is well suited for a discussion of how old age may have been understood and expressed in a Neolithic community. What makes these graves especially appealing in this context is how some of the oldest individuals seem to have needed special treatment in death. It is also interesting to note that the proportion of elderly versus adults decreases over time — something which may prove significant when discussing social change at Ajvide.

The old and the sea: senior hunter-fishers at Ajvide

The Middle Neolithic period (c. 3300–2300 BC) in southern Scandinavia is generally considered to be a 'multicultural' one in which at least three different cultural complexes coexist — the farming/herding Funnel Beaker and Battle Axe cultures and the Pitted Ware hunter-gatherers (Malmer 2002). The Ajvide site was, during this period, located by the waterfront and consists of graves interspersed with cultural layers, post-holes, pits and other features. The material is typical for the Pitted Ware culture, although there are also elements that are normally associated with the Battle Axe culture (Burenhult 2002; Fahlander 2006). The site was probably not continuously occupied but visited during several periods between about 3100–2450 BC (2-sigma, incl. reservoir effect of 70 years). The horizontal stratigraphy of the burial ground suggests that the earliest graves were laid out in the northern part of the area and that subsequent burials continued southwards (Fahlander 2003, 106f.). During the course of this development there is increasing influence from the Battle Axe culture, which includes both changes in



Figure 1. The location of Ajvide on Gotland in the Baltic Sea. (Drawn by Dora Kemp.)

diet (Fahlander 2010, 29) and ritual practice, as well as material culture (Fahlander 2006, 216–17).

At present at least 85 grave-like units are recorded, including eight so-called cenotaphs, as well as several concentrations of scattered human bones (Fig. 2). So far 62 of the graves have been properly published (Burenhult 2002; Österholm 2008), while the remaining ones are only summarily described in interim reports (Norderäng 2001–2009). Of the 62 graves, 22 individuals have been estimated as men and 19 as women; 17 individuals are under the age of 14. This means that the child/adult ratio is c. 1:3. Of the 62 burials, the age of three individuals has been estimated to be 60 years or more (nos. 17, 34 & 53), an additional four are aged between 50 and 60 years (nos. 13, 14, 57 & 58) and three between 40 and 50 years of age (nos. 19, 23a & 24). However, since age estimations of late adults and seniles are problematic, as previously discussed, it is difficult to draw a line at 40, 50, 60 or any other age. We ought to view these age estimations as indicative rather than separating, for example, an individual of more than 60 from those around 50 years of age. In order to establish a reasonable threshold between the elderly and adults we need to discuss additional ways of interpreting the osteological and archaeological data.

Aged bodies at Ajvide

The osteological material from Ajvide has been thoroughly studied in a number of publications. The first age and sex assessments were made by Persson and Persson (1997), which have subsequently been reinterpreted by Petra Molnar (2000; 2008). I have mainly used Molnar's data since they cover more individuals and use a more thorough combination of



Figure 2. Plan of the graves at Ajvide where those containing ‘aged bodies’ are highlighted. The grey arrow illustrates the general horizontal stratigraphy of the area. The inset (upper left-hand corner) shows the position of the site relative to the contemporary shoreline. The graves with dotted lines are not yet finally published, and their form, number and exact location are approximate. (Redrawn by Dora Kemp from an original ArcGIS image after Burenhult 2002; Norderäng 2001–2009.)

methods (e.g. Murphy 1959; Meindl & Lovejoy 1989; Brooks & Suchey 1990; Işcan *et al.* 1984). In general Molnar's age estimations are slightly younger than Persson and Persson's but, besides that, there are only minor discrepancies concerning the elderly individuals discussed here.

Although this material has been exhaustively analysed, the question of exactly who may be considered 'old' in this context is by no means obvious. Judging from the age estimates alone the eleven individuals mentioned above are suitable candidates. Of these, some (or all) may be considered as aged bodies. Besides the composite age estimations a closer look at the osteological traces of wear and diseases associated with advanced age provide some indications. Molnar (2008) has especially discussed traces of wear in the Ajvide material and some of them (eburnation, arthritis and dental wear) may actually be relevant here. Eburnation is found in approximately 15 per cent of the buried individuals (grave nos. 7, 13, 17, 23a, 24, 42a, 53, 57, 58 & 59). Eburnation is not an indication of high age *per se*: at Ajvide it is found in graves of adults of c. 25–35 years of age (grave 59) and 35–45 years of age (grave 24). However, besides one additional undetermined 'adult' burial (grave 42a), the major part of the affected bones is found among adults over 50 years (this has not been a factor in the age estimations). Traces of arthritis also appear to be an interesting indicator. Even though traces of arthritis found in skeletons from three graves (nos. 7, 13 & 14) may not have been experienced as symptoms by the affected individuals, it is nonetheless only present among individuals classified as old adults of 50–60 years of age.

Traces of dental wear on one or more teeth are found among 27 individuals (33 per cent) in the whole spectra from late teenagers to the oldest. Dental wear is somewhat problematic as an age indicator because it is often related to certain tasks and professions. Although the dental wear in general is distributed over several age-groups, there are differences between the various types of dental wear. Traces of occlusal facets and excessive load, for instance, are more highly represented among the elderly, while labial or interproximal striae are more evenly spread among adults. However, while younger adults only show traces of one or two of the different types, the oldest individuals generally have three or four (or extremely worn-down teeth).

Taken all together, it can be argued that eleven individuals (six men and five women) can actually be singled out as 'aged bodies' (nos. 7, 13, 14, 17, 19, 23a, 24, 34, 53, 57 & 58). The majority of them are classified as being over 50 years of age. Three individuals

are estimated to a 40–50 year-span, which may seem rather young. However, considering Persson and Persson's (1997) estimations of 60–70+ years of age for these individuals, together with the traces of wear they show, we can safely include them in this category. It is noteworthy that these three possibly younger individuals are all men, which may indicate different thresholds for men and women when they are considered old. There is, however, little point in trying to determine any exact age for when adults became elderly. This would most probably differ from case to case according to both social and biological aspects of each individual. To single out a loosely defined category of 'aged bodies' based on age estimates and traces of wear is, of course, far from fail-proof, but is as close as we can get when trying to distinguish between adulthood and seniority in this particular case.

The next question is whether the graves of these eleven individuals have something in common that distinguishes them from younger individuals' graves. In general terms, the eleven graves with 'aged bodies' are rich in content, but no more or less so than many graves of younger individuals (Table 1). There are no common attributes (individual artefacts or assemblages) that distinguish these graves from others: axes are found in both female and male graves, young and old. The same goes for harpoons, fishing hooks and ceramics (Table 1). This pattern is typical for the mortuary variability at Ajvide, which shows little general patterning in regard to, for example, sex, age or status (cf. Burenhult 2002, 34; Molnar 2010, 11). This may not necessarily indicate an egalitarian social structure, but could be the result of a collective burial practice where grave content reflects who and how many were present rather than the buried individual's social persona (see Fahlander 2003, 116–17). From such a perspective, it is thus not surprising that the graves of 'aged bodies' are no different from the others in terms of grave content.

Intersecting generations

There is, however, one significant aspect of the burial practices at Ajvide that seems to indicate special treatment of the dead 'advanced-age' individuals. The graves that intersect and overlap with earlier graves seem to have been reserved for the elderly. The only exception to this general pattern is grave 2, which contains a 19- to 20-year-old woman. There are four cases of overlapping graves in the northern part and two in the south. In the northern part there is a series of north- to south-orientated graves (2, 7, 13 & 14) that have been intersected by a number of east- to west-oriented graves (1, 4, 6, 11 & 15). These so-called

Table 1. Graves with ‘aged bodies’. All data from Burenhult (1997; 2002). Age and gender assessments are primarily from Molnar (2000; 2008) and secondly from Persson and Persson (1997). Ages within parentheses are Persson and Persson’s estimates. Abbreviations of dental wear: A = Occlusal facets; B = Occlusal excessive load; C = Labial vertical striae; D = Labial horizontal striae; E = Interproximal striae. *Molnar pers. comm.

No.	Age	Sex	Grave contents	Osteology	Notes
7	40–50	M	Hollow-edged thick-butted flint axe; club/axe of rock; 5 bone points; strike-a-light flint; 13 pierced seal teeth; seal teeth; pig’s tusk; 20 retouched flint artefacts; fowl bone	Dental wear (BCDE); traces of joint disease in spine; spondylosis on 5th lumbar; eburnation on foot; rib: pseudoarthritis	Severely damaged grave
13	50–60	F	3 thick-butted flint axes; stone axe; bone point; fishing hook; pig’s tusk; flint knife; flint blades; large amounts of pottery; pounding stone; whetstone; birch-bark rolls; ochre	Dental wear (ABCE); eburnation on hand; polyarthritis; a neck vertebra strongly deformed by osteophytes	
14	50–60	M	2 fishing hooks; bone point; pottery concentration; pig’s tusk; pounding stone; flints	Dental wear (ABC); advanced stage of dental attrition, all of the mandibular molars, except third molars, had been lost; signs of moderate osteophyte formation in the lumbar vertebrae; ulna: pseudoarthritis	
17	60+	F	Stone axe; fishing hook; part of flint axe; fragment of bone point	Dental wear (ABE); eburnation on hand; vertebra deformed by spondylosis	Severely fragmented skeleton, crania possible removed?
19	40–50	M	Femur-shaped grinding stone; 2 whetstones; 2 miniature vessels; pig’s tusk; bone harpoon; clay bead; axe fragment; nutshells; birch-bark rolls	Dental wear (ABCE); severe osteophyte formation in the lower vertebrae	
23a	40–50	M	Harpoon; bone implements; bone point; fowl bone bead; burned shell; birch-bark; clay vessel; flints; pig’s jaw; ‘fowl bone flute’	Dental wear (CD); eburnation on hand; spondylosis on 5th lumbar; vertebra deformed by osteophytes	Buried together with a boy of 12–13 years of age, the bones dislocated, possibly excarnated?
24	35–45	M	8 beads of fowl bone; ceramics; birch-bark; nutshells	Lower vertebrae deformed by osteophytes	Crushed skeleton
34	60+	M?	Clay vessel, pointed bottom; pottery concentration; flint borer; hollow-edged stone axe; pig’s tooth; double-edged amber bead	Both feet severely affected by degenerative joint disease*	Badly damaged skeleton, only lower parts partially preserved
53	60+	F	Pig tusks; worked bone	Dental wear (BC); eburnation on vertebra; sacralized lumbar; extremely worn-down teeth and degeneration of spine	
57	50–60	F	8 seal teeth; 1 pierced seal tooth; flint core; 6 retouched flints; 3 beads of fowl bone	Eburnation on wrist and hands; eburnation in the spine	Poorly preserved fragments
58	50–60	M	12 retouched flints; flint core; decorated clay bead; axe fragment; 45 pierced seal teeth; pig’s tusk	Dental wear (B); extremely worn-down teeth; eburnation on vertebra and hand	

‘T-shaped pairs’ of graves are apparently deliberately arranged in that manner, as is shown by the consistency in the pairing. That it is the east- to west-oriented graves that intersect the north–south direction can also be demonstrated stratigraphically (Burenhult 2002, 33). In the southern part of the area there are two additional pairs of intersecting graves, but of a slightly different style. Here the later graves do not simply touch the edge of the earlier ones, but graves 57 and 58 are laid out right across the previous ones (nos. 61 & 62) in a way that appears almost aggressive. Perhaps grave 23 can be argued to slightly intersect grave 19, but not in the same way as the others. It should also be noted, however, that this grave contains one of the ‘aged bodies’.

Unfortunately radiocarbon dates do not help to determine the lapse of time between the earlier superimposed and the later intersecting graves — when calibrated they all fall within the same 300-year span (Fahlander 2003, 92). However, the fact that the skulls of at least three individuals (graves 1, 4 & 6) have been removed post mortem during this process suggests that enough time has passed for the soft tissue to have dissolved.

Not all elderly individuals have been buried in intersecting graves. There are also a few (three — or five, depending on whether or not graves 19 and 23 are included) that have been buried individually. There are no obvious differences between these two groups of graves — those buried in single graves do not differ

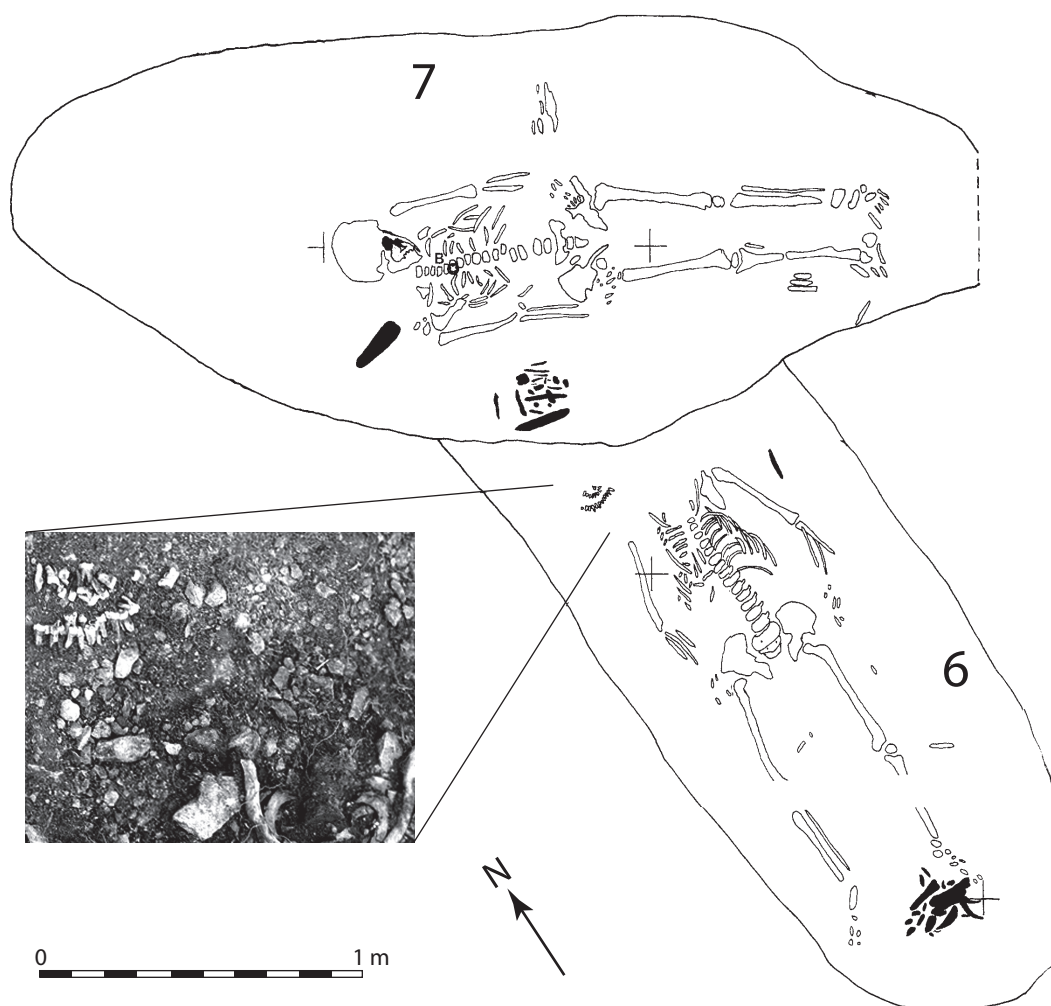


Figure 3. A hand-drawing of intersecting graves 6 and 7. Earlier grave 6 containing a 17- to 25-year-old man has been intersected by the later burial of a 40- to 50-year-old man. Note that the young man's extracted teeth were found in situ in the cranial area (enhanced in photograph). (Adapted from Burenhult 2002, 78, fig. f and photo from cd-rom, pl. 22a.)

in terms of grave content, sex or age between those buried in intersecting graves. Nor do the graves that have been intersected show any clear sign of common attributes that could explain why their graves have been chosen. One is a cenotaph (15), two contain women (1 & 62) and three contain men (4, 6 & 61) of various ages (Table 2). Although there does not seem to be any common attribute among the overlapping or the intersecting graves, the practice of old people intersecting younger is significant — especially because there are no clear-cut correlations between grave goods and buried individuals at Ajvide. It is therefore interesting to note that males only overlap other males and women only overlap women — with the exceptions of grave 14 which overlaps a cenotaph and graves 13 and 4 in which a older woman overlaps

a younger male. It can, however, be noted that in the latter case the skeleton lacks a cranium and is poorly preserved, a fact which makes the determination of sex difficult (Burenhult 2002, 45). The same-sex relationship between the pairs of graves is thus yet another parameter indicating that this pattern is a result of intentional practices.

Pairing or merging bodies?

The treatment in death of the oldest individuals at Ajvide poses a number of questions that beg for answers. For example, what might differentiate the two general ways of burying the elderly (intersecting or individually)? What is the purpose of letting some of the old individuals intersect the graves of younger

Table 2. Superimposing (above) and superimposed (below) graves. All data from Burenhult (1997; 2002). Age and gender assessments are primarily from Molnar (2000; 2008) and secondly from Persson and Persson (1997).

No.	Age	Sex	Grave contents	Osteology	Notes
<i>Superimposing graves</i>					
2	18–21	F	Pierced seal teeth; ceramics; 3 fishing hooks; bone needles; double-edged amber bead; ceramic pot; whetstone; 4 fowl bone beads; a 'seal teeth application'; 5 hedgehog jaws; fish bones	No pathological or traumatic changes observed	Only the lower parts are preserved
7	40–50	M	Hollow-edged, thick-butted flint axe; club/axe of rock; 5 bone points; strike-a-light flint; 13 pierced seal teeth; seal teeth; pig's tusk; 20 retouched flints; fowl bone	Traces of joint disease in spine; spondyloysis on 5th lumbar; eburnation on foot; rib: pseudoarthritis; dental wear	Severely damaged grave
13	50–60	F	3 thick-butted flint axes; stone axe; bone point; fishing hook; pig's tusk; flint knife; flint blades; large amounts of pottery; pounding stone; whetstone; birch-bark rolls; ochre	Dental wear (ABCE); eburnation on hand; polyarthritis; a neck vertebra strongly deformed by osteophytes	
14	50–60	M	2 fishing hooks; bone point; ceramics; pig's tusk; pounding stone; flints	Advanced stage of dental attrition, all of the mandibular molars, except third molars, had been lost; signs of moderate osteophyte formation in the lumbar vertebrae; ulna: pseudoarthritis	
57	50–60	F	8 seal teeth; 1 pierced seal tooth; flint core; 6 retouched flints; 3 fowl bone beads	Eburnation on wrist and hands; eburnation in the spine	Poorly preserved fragments
58	50–60	M	12 retouched flints; flint core; decorated clay bead; axe fragment; 45 pierced seal teeth; pig's tusk	Dental wear (B); extremely worn-down teeth; eburnation on vertebra and hand	
<i>Superimposed graves</i>					
1	17–19	F	Thin-bladed flint axe; fishing hook; 4 amber pearls; flint core and scraper; bone from sturgeon; pierced seal teeth; a 'seal teeth application'; 5 bone points; 2 tusks and bones of pig; fowl bone; a seal crania	No pathological or traumatic changes observed	
4	30–40	M	Pounding stone; pottery; part of a harpoon; bones of hedgehog(?)	No pathological or traumatic changes observed	Poorly preserved skeleton; crania and femur are missing; the legs are flexed (tied?)
6	17–25	M	4 tusks of pig; fishing hook; part of a harpoon; 6 bone points; lump of yellow ochre	No pathological or traumatic changes observed	Crania is missing but the teeth are put back in the grave in correct anatomical order; two of them replaced by animal teeth
15	-	-	2 fragments of fishing hooks; large amounts of pottery	-	Cenotaph
61	35–45	M	6 retouched flints; bone point	No pathological or traumatic changes observed	Disturbed grave; the bones are dislocated
62	25–30	F(?)	Double-edged stone axe; bone from sturgeon; bone comb; 38 'flutes' of bone; 2 bone spoons; fragment of a flint arrow head; 2 fragments of harpoons; mother-of-pearl fragments; pig's-tusk knife; miniature axe; hedgehog jaws; a part of a clay figurine(?); fragment of elk horn	Ambiguous sex; taller than average and quite robust skull, but the pelvis shows typical female traits	

individuals? What does the removal of the skulls in three of the intersected graves indicate? Is it significant that the number of older individuals decreases over time from the earlier northern part to the later southern part?

To begin with, it may be tempting to assume that the pairing of graves perhaps reflects different kinds of kinship relations, for instance, a desire to relate to siblings, parents or offspring who had died earlier. Even though the individuals in the superimposed graves are younger, they are nonetheless old enough to have been parents who happened to die early. However, such a relation does not fit well with the same-sex pattern. Nor does it seem very likely that the overlapping pairs of graves reflect a marriage relationship in real life for the same reason (at least not from a hetero-normative perspective). It could, however, fit within a socially defined category of individuals who, because of their special status, happened to live longer than most others (e.g. by status, profession, clan etc.). In such a scenario, even the exception in grave 2 with a young woman would fit the pattern. The other three to five graves containing aged individuals that do not overlap other graves may thus comprise older individuals of a different social category. There are, however, no major differences in the burial contents between these two groups (Tables 1 & 2). If they really were that special one would expect other differences in burial content as well — notwithstanding if such artefacts are related to the dead individual or to his/her next of kin. The same-sex pattern of the overlapping burials suggests rather that the superimposed individuals were chosen for a different reason than that they shared relations in life.

Becoming one in death: the merging of bodies

The lack of distinction between individuals of different status and sex may not necessarily be an indication of equal social structure among the living, but may be a consequence of the burial ritual. Ian Morris (1992, 2) has argued that although burials typically mirror some social elements, burial rituals generally focus on the afterlife. The ritual element is particularly apparent at Ajvide where the dead seem to have been integrated into parts of the life of the living. This is indicated by the many cases of post-depositional manipulations. For instance, in at least 12 per cent of the graves, the skull or other bones have been removed post mortem (Burenhult 2002, 33), a few individuals have been buried as ‘packages’ (Norderäng 2007), and large amounts of scattered human bones are found dispersed within the cultural layers of the area (Lundén 2012). These instances typically indicate an active relationship with the dead. It is especially striking that the skulls in the

superimposed graves in the northern part (nos. 1, 4 & 6) have all been removed. Whether this is also the case for the cenotaph (no. 15) is uncertain because it is difficult to establish if the empty graves ever contained a body. The ritual aspect of the practice of intersecting graves may also be strengthened by the clustering of the overlapping graves in two groups in the north and south respectively (Fig. 2). One would have expected a more random distribution of overlapping elderly individuals if they simply followed the general horizontal stratigraphy.

It is always problematic to understand ritual practices that seem irrational. For example, the body in the intersected grave (no. 6) is not only missing the cranium; in contrast to the other graves without skulls, the teeth have been put back in an anatomically correct order — with the exception of two which have been replaced by animal ones (pig and seal). There are no indications of decapitation and the teeth seem to have been rather carelessly removed, which suggests that the missing parts were removed post mortem (Burenhult 2002, 46). This is a strange practice that is hard to relate to, but the removal of the skulls may provide a way of understanding the practice of pairing old and young individuals in death. Post-depositional manipulations of burials are often considered to be a part of ancestral worship or a death cult. The removal of the skull in these instances, however, indicates something more complex. Perhaps the point of removing the skulls was to ‘merge’ the old dead with the younger bodies? That is, symbolically replacing the head with the body of an older individual as a means to create a hybrid — a ‘duoividual’ — or perhaps even a new entity? Combinations of human bones from different individuals are found in both communal as well as in individual burials (Strassburg 2000; Dandoy *et al.* 2002; Rebay-Salisbury *et al.* 2010). In megaliths such practices have been suggested to be a de-personalization of the dead who, after death, have become transformed into a ‘generalised body of anonymous ancestors’ (Pollard 1997, 52–3). In a recently analysed Bronze Age burial the mixing of bones of different individuals has been interpreted as a way ‘designed to amalgamate different ancestries into a single lineage’ (Hanna *et al.* 2012, 2779). But, since at present there are no clues as to what happened to the skulls after removal, all we can establish is that some, but not all, of the old were given special treatment after death which involved relating them to a younger individual of the same sex. The removal of the skulls can thus be understood as an extraordinary measure; perhaps the deaths of the really old were especially disturbing and a younger person’s skull was considered necessary for extended rituals. The same gender pattern is

nonetheless interesting. It implies that the overlapped graves were specifically chosen to 'fit' the deceased old individuals. It thus suggests that it was primarily the individual bodies' properties that mattered, that is, a merging of bodies, rather than a merging of identities.

An eschatological interpretation of the overlapping phenomenon may thus be that some old individuals were buried adjacent to younger ones because it was assumed that they needed 'assistance' in the afterlife. This may explain why the graves of some elderly overlap younger individuals' graves, while others do not. There is nothing in the osteology that supports such a difference between the two groups of 'aged bodies' — but that does not exclude a distinction based on other distinctive age-related aspects not visible in the skeleton. For instance, the young woman in grave 2 may have been buried in an intersecting grave because she suffered from symptoms similar to any of the biological effects of advanced age. Although she apparently died quite young, her body may still have been associated with those of advanced age.

No matter how the pairing of burials is to be understood, the two different ways to bury 'aged bodies' suggests the distinction of a special category of the elderly. This distinction seems most likely to be eschatological in character as a part of the active relations maintained between the living and the dead at Ajvide. It is therefore reasonable that a period of seniority including one (or two) categories of elderly was recognized at Ajvide during the Middle Neolithic.

Hybridization, change and the old

It is interesting to note that the proportion of elderly, and the ways in which they are buried, seems to change over time at Ajvide. As previously mentioned, the general horizontal stratigraphy suggests that the older graves are found in the northern part and that subsequent burials were placed further and further south. How much time passed between the first and the last burials is difficult to say. Judging from the available radiocarbon dates the site may have been in use for up to 650 years — although it is reasonable to assume, from demographic calculations, that it was a significantly shorter period (Fahlander 2003, 98). That the majority of the aged bodies are found in the early phase of the burial ground implies that the proportion of individuals of advanced ages decreased over time. It is therefore interesting to note that the way in which the graves intersect changes from the earlier phase in the north to the later ones in the south. The burials in the southern area do not simply 'touch' the older ones but are laid out right across them in what may at first seem to be a destructive and aggressive manner. The two cases in the south fit the pattern

with an elderly individual overlapping a younger of the same sex. However, in contrast to the northern intersecting pairs these actually interfere less with the older burials. In both cases (61/58 and 62/57) the superimposed burials were left relatively intact: the skulls of the superimposed graves have not been removed, as was the case in the northern pairs of graves. What happened here? Is the different way of superimposing graves simply a development of the earlier practice? Principally, there is nothing strange in rituals changing. If there is a long period of time between burials, the 'proper' way to treat old people in death may easily be altered. Depending on how much time has passed, it can also be seen as a case of archaization, a way to relate to the old way of burying certain elderly. In this particular case, however, one may suspect that the decreasing proportion of elderly at the site may have accelerated the process.

By and large this change in ritual can be linked to the overall development of the site and the time period. At Ajvide, there are several signs of increased hybridization between the Pitted Ware culture and the Battle Axe culture during the last phase of burials. The change in treatment of the elderly, as well as their smaller number, may thus be a consequence of a transformation from a hunter-gatherer lifestyle to a more sedentary way of life. From a ritual perspective the way of viewing the dead body and treating it does indeed change over time at Ajvide (Fahlander 2009, 124–5). Nearly all post-depositional manipulations (removal of bones, making of cenotaphs) are found in the earlier northern part. Changes in the way in which elderly individuals were buried may thus be an intended displacement in ritual resulting from a structuring relationship in which the smaller proportion of the elderly indirectly affects the outcome. Given that the elderly often have a significant role as bearers of traditions and a link between generations, it is reasonable to assume that their reduced number also had some impact on development at the site.

Summary

This article discusses the social dimensions of old age and ageing in the past and its potential as a way to reach more general social structures. Since old age is a relative term depending on diet, lifestyle and life expectancy there are no absolute means to distinguish such a category from other adults in a given society. It is therefore argued that age differentiation by calendric systems is less useful for archaeological studies of old age. Instead a composite approach is advocated for here which focuses on the 'aged body' based on identifiable traces of advanced age in the

skeleton particular to each given locality. In the Ajvide case study presented here, eleven such individuals (six men and five women) have been identified in the estimated age-span between c. 50–60+ years, comprising around 18 per cent of the 62 published burials. At first glance, there are no distinctive features separating these graves from the others in terms of interments, number of artefact types or burial construction. It is, however, significant that all but one individual in the graves that overlap or intersect with previous burials contain the category of ‘aged bodies’. These pairs of individuals, with one possible exception, are also of the same sex: old men overlap younger men, and old women overlap younger women. This pattern suggests that at least some elderly men and women were considered ‘special’ in some sense and needed special treatment in death.

Whether the distinction between adults and elderly in the burial ritual is social or due to eschatological beliefs about the afterlife is difficult to determine, but the intimate relations between the living and the dead at Ajvide indicate that the burial ritual probably is more about eschatological than social concerns. For example, in the first pairing of graves in the northern part of the area, the skulls have been removed from the intersected graves. This practice indicates foremost the need for special treatment in death for some old individuals but may also be interpreted as an attempt at ‘merging’ bodies. It is suggested that some of the elderly were buried this way because they required assistance in the afterlife. The other group of elderly individuals that were buried in single graves may have reached quite advanced ages but do not exhibit any significant degenerative conditions at the time of their death. From this interpretation it follows that at least some of the elderly at Ajvide were probably considered ‘different’ in life as well — indicating a socially recognized period of seniority for both men and women.

The way in which the elderly were buried also changes over time at Ajvide. The overlapping burials in the later southern part differ slightly in the way they overlap and do not include any visible manipulation of the intersected earlier burials. This is related to the overall development of Ajvide and the increasing traces of hybridization within the Battle Axe culture. It is suggested that the lower proportion of the elderly observed over time is both a consequence and cause of change in which their decreasing numbers played a significant part.

Acknowledgements

I should like to thank the two anonymous reviewers whose useful comments enabled me improve this paper. I am also

most grateful to Anna Kjellström and Petra Molnar at the Osteoarchaeological Research Laboratory, Stockholm University for helpful discussions and comments. This research has been generously supported by the Berit Wallenberg Foundation.

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References

- Appleby, J.E.P., 2010. Why we need an archaeology of old age. *Norwegian Archaeological Review* 43(2), 145–68.
- Appleby, J.E.P., 2011. Bodies, burials and ageing: accessing the temporality of old age in prehistoric societies. *Oxford Journal of Archaeology* 30(3), 231–46.
- Baxter, J.E., 2005. *The Archaeology of Childhood: Children, Gender, and Material Culture*. Walnut Creek (CA): AltaMira Press.
- Beauvoir, S. de, 1996. *The Coming of Age*, trans. P. O’Brian. New York (NY): W.W. Norton & Co. [First published in 1970; Paris: Éditions Gallimard.]
- Bledsoe, C.H., 2002. *Contingent Lives: Fertility, Time and Aging in West Africa*. (The Lewis Henry Morgan Lectures 1999.) Chicago (IL): University of Chicago Press.
- Bourdelaïs, P., 1998. The ageing of the population: relevant question or obsolete notion?, in *Old Age from Antiquity to Post-modernity*, eds. P. Johnson & P. Thane. (Routledge Studies in Cultural History 1.) London: Routledge, 110–31.
- Brooks, S. & J.M. Suchey, 1990. Skeletal age determination base on the os pubis: a comparison of the Acsádi-Nemeskéri & Suchey-Brooks methods. *Human Evolution* 5(3), 227–38.
- Burenhult, G., 1997. Gravarnas vittnesbörd, in *Ajvide och den Moderna Arkeologin*, ed. G. Burenhult. Stockholm: Natur & Kultur, 52–70.
- Burenhult, G., 2002. The grave-field at Ajvide, in *Remote Sensing: Applied Techniques for the Study of Cultural Resources and the Localization, Identification and Documentation of Sub-surface Prehistoric Remains in Swedish Archaeology*, vol. 2, ed. G. Burenhult. Stockholm: Natur & Kultur, 31–167.
- Carvalho, S., 2010. Ageing in the seventeenth and eighteenth centuries. *Science in Context* 23(3), 267–88.
- Chamberlain, A.T., 1997. Commentary: missing stages of life — towards the perception of children in archaeology, in *Invisible People and Processes: Writing Gender and Childhood into European Archaeology*, eds. J. Moore & E. Scott. London: Leicester University Press, 248–50.
- Cliggett, L., 2005. *Grains from Grass: Aging, Gender, and Famine in Rural Africa*. New York (NY): Cornell University Press.

- Cohen, L., 1994. Old age: cultural and critical perspectives. *Annual Review of Anthropology* 23, 137–58.
- Cox, M., 2000. Ageing adults from the skeleton, in *Human Osteology in Archaeology and Forensic Science*, eds. M. Cox & S. Mays. London: Greenwich Medical Media, 61–81.
- Crews, D.E. & B. Bogin, 2010. Growth, development, senescence, and aging: a life history perspective, in *Companion to Biological Anthropology*, ed. C.S. Larsen. Oxford: Wiley-Blackwell, 124–52.
- Crown, P.L. & S.K. Fish, 1996. Gender and status in the Hohokam Pre-classic to Classic transition. *American Anthropologist* 98(4), 803–17.
- Dandoy, J.R., P. Selinsky & M.M. Voigt, 2002. Celtic sacrifice. *Archaeology* 55(1), www.archaeology.org/0201/etc/celtic.html. [Accessed 1 October 2012.]
- Fahlander, F., 2003. *The Materiality of Serial Practice: a Micro-archaeology of Burial*. (Gotarc serie B, no. 23.) Göteborg: Göteborg University.
- Fahlander, F., 2006. Liv och död i det tredje rummet: hybriditet och materialitet under mellanneolitikum, in *Lik og Ulik - Tilnærminger til Variasjon i Gravskikk*, ed. T. Oestigaard. Bergen: Universitetet i Bergen Arkeologiske Skrifter, 203–23.
- Fahlander, F., 2009. Reala kroppar och dödens realitet: rumslighet och horisontell stratigrafi på Ajvide och Skateholm, in *I Tillvarons Gränsländ: Mångvetenskapliga Perspektiv på Kroppen Mellan Liv och Död*, eds. F. Ekengren & L. Nilsson Stutz. Lund: Department of Archaeology and Ancient History, University of Lund, 106–45.
- Fahlander, F., 2010. Messing with the dead: post-depositional manipulations of burials and bodies in the south Scandinavian Stone Age. *Documenta Praehistorica* 37, 22–32.
- Fahlander, F., 2011. Bilder av barn och barndom, in *Spåren av de Små: Arkeologiska Perspektiv på Barn och Barndom*, ed. F. Fahlander. (Stockholm Studies in Archaeology 54.) Stockholm: Stockholm University, 1–75.
- Fausto-Sterling, A., 2005. The bare bones of sex, part 1: Sex and gender. *Signs: Journal of Women in Culture and Society* 30(2), 1491–527.
- Featherstone, M. & A. Wernick, 1995. Images of positive aging: a case study of *Retirement Choice* magazine, in *Images of Aging: Cultural Representations of Later Life*, eds. M. Featherstone & A. Wernick. London: Routledge, 29–47.
- Foner, N., 1984. *Ages in Conflict: a Cross-cultural Perspective on Inequality Between Old and Young*. New York (NY): Columbia University Press.
- Gilchrist, R., 2000. Archaeological biographies: realizing human lifecycles, -courses and -histories. *World Archaeology* 31(3), 325–8.
- Gilchrist, R., 2009. Rethinking later medieval masculinity: the male body in death, in *Mortuary Practices and Social Identities in the Middle Ages: Essays in Burial Archaeology in Honour of Heinrich Härke*, eds. D. Sayer & H. Williams. Exeter: University of Exeter Press, 236–52.
- Gowland, R., 2009. Age as an aspect of social identity: the archaeological funerary evidence, in *Social Archaeology of Funerary Remains*, eds. R. Gowland & C. Knüsel. Oxford: Oxbow Books, 143–54.
- Hammel, E., 1984. Age in the Fortesian coordinates, in *Age and Anthropological Theory*, eds. D.I. Kertzer & J.E. Keith. Ithaca (NY): Cornell University Press, 141–58.
- Hanna, J., A.S. Bouwman, K.A. Brown, M. Parker Pearson & T.A. Brown, 2012. Ancient DNA typing shows that a Bronze Age mummy is a composite of different skeletons. *Journal of Archaeological Science* 39(8), 2774–9.
- Hazan, H., 1994. *Old Age: Constructions and Deconstructions*. Cambridge: Cambridge University Press.
- Işcan, M.Y., S.R. Loth & R.K. Wright, 1984. Age estimation from the rib by phase analysis: white males. *Journal of Forensic Sciences* 29(4), 1094–104.
- Johnson, P. & P. Thane (eds.), 1998. *Old Age from Antiquity to Post-Modernity*. London: Routledge.
- Kerns, V. & J. Brown (eds.), 1992. *In Her Prime: New Views on Middle-aged Women*. Urbana (IL): University of Illinois Press.
- Kertzer, D.I. & P. Laslett (eds.), 1995. *Aging in the Past: Demography, Society, and Old Age*. Berkeley (CA): University of California Press.
- Kjellström, A. & S. Welinder, 2012. Old age in prehistory, in *Alter(n) Anders Denken: Kulturelle und Biologische Perspektiven*, eds. B. Röder, W. de Jong & K.W. Alt. Cologne: Weimar/Vienna: Böhlau Verlag, 71–91.
- Lamb, S., 2000. *White Saris and Sweet Mangoes: Aging, Gender and Body in North India*. Berkeley (CA): University of California Press.
- Laslett, P., 1995. Necessary knowledge: age and aging in the societies of the past, in *Aging in the Past: Demography, Society, and Old Age*, eds. D.I. Kertzer & P. Laslett. Berkeley (CA): University of California Press, 81–106.
- Lillehammer, G. (ed.), 2010. *Socialisation: Recent Research on Childhood and Children in the Past*. Stavanger: Stavanger University.
- Lundén, A., 2012. *Mysteriet Med de Spridda Människobenen på Ajvide*. Unpublished Bachelor essay, Department of Archaeology and Osteology, Gotland University.
- Malmer, M.P., 2002. *The Neolithic of South Sweden: TRB, GRK and STR*. Stockholm: Kungl. Vitterhets Historie och Antikvitets Akademien.
- Maybury-Lewis, D., 1984. Age and kinship: a structural view, in *Age and Anthropological Theory*, eds. D.I. Kertzer & J. Keith. Ithaca (NY): Cornell University Press, 123–40.
- Meindl, R.S. & C.O. Lovejoy, 1989. Age changes in the pelvis: implications for paleodemography, in *Age Markers in the Human Skeleton*, ed. M.Y. Işcan. Springfield (IL): Charles C. Thomas, 137–68.
- Minois, G., 1989. *History of Old Age: from Antiquity to the Renaissance*. Oxford: Polity Press.
- Molnar, P., 2000. Anthropological analysis of the skeletal material from Ajvide, Eksta sn., Gotland, in *Remote Sensing: Applied Techniques for the Study of Cultural Resources and the Localization, Identification and Documentation of Sub-surface Prehistoric Remains in Swedish Archaeology*, vol. 2, ed. G. Burenhult. Stockholm: Natur & Kultur, 371–4.

- Molnar, P., 2008. *Tracing Prehistoric Activity: Life Ways, Habitual Behaviour and Health of Hunter-gatherers on Gotland*. Stockholm: Stockholm University.
- Molnar, P., 2010. Patterns of physical activity and material culture on Gotland, Sweden during the Middle Neolithic. *International Journal of Osteoarchaeology* 20, 1–14.
- Morris, I., 1992. *Death-ritual and Social Structure in Classical Antiquity*. Cambridge: Cambridge University Press.
- Murphy, T., 1959. The changing pattern of dentine exposure in human tooth attrition. *American Journal of Physical Anthropology* 17, 167–78.
- Norderäng, J., 2001–2009. *Ajvideboplatsen: Rapport från Arkeologisk Undersökning av Fornlämning nr. 171 på Fastigheten Ajvide 2:1 i Eksta socken, Gotland*. Visby: Gotland University.
- Norderäng, J., 2007. Paketgravar från Stenåldern. *Gotländskt Arkiv* 2007, 15–22.
- Österholm, I., 2008. *Jakobs/Ajvide: Undebersökningar på en Gotländsk Boplatsudde från Stenåldern*. Visby: Gotland University Press.
- Ottaway, S.R., 2004. *The Decline of Life: Old Age in Eighteenth-century England*. Cambridge: Cambridge University Press.
- Parkin, T.G., 1998. Ageing in antiquity, status and participation, in *Old Age from Antiquity to Post-modernity*, eds. P. Johnson & P. Thane. London: Routledge, 19–42.
- Persson, E. & O. Persson, 1997. The osteo-archaeological analysis of skeleton material from Hablingbo and Ajvide, excavation seasons 1983–86, 1992–95, in *Remote Sensing: Applied Techniques for the Study of Cultural Resources and the Localization, Identification and Documentation of Sub-surface Prehistoric Remains in Swedish Archaeology*, vol. 1, ed. G. Burenhult. Stockholm: Natur & Kultur, 3–11.
- Pollard, J., 1997. *Neolithic Britain*. Princes Risborough: Shire Publications.
- Rawlins, J., 2006. *Midlife and Older Women: Family Life, Work and Health in Jamaica*. Kingston: University of the West Indies Press.
- Rebay-Salisbury, K., M.L.S. Sørensen & J. Hughes (eds.), 2010. *Body Parts and Bodies Whole: Changing Relations and Meanings*. Oxford: Oxbow Books.
- Reulecke, J., 2008. Generation/generationality, generativity, and memory, in *Cultural Memory Studies: an International and Interdisciplinary Handbook*, eds. A. Erll & A. Nünning. Berlin: Walter de Gruyter, 119–25.
- Shahar, S., 1998. Old age in the high and late Middle Ages: image, expectation and status, in *Old Age from Antiquity to Post-modernity*, eds. P. Johnson & P. Thane. London: Routledge, 43–63.
- Sofaer, J., 2006. *The Body as Material Culture: a Theoretical Osteoarchaeology*. Cambridge: Cambridge University Press.
- Solokovsky, J. (ed.), 2009. *The Cultural Context of Aging: Worldwide Perspectives*. London: Praeger.
- Strassburg, J., 2000. *Shamanic Shadows: One Hundred Generations of Undead Subversion in Southern Scandinavia, 7000–4000 BC*. (Stockholm Studies in Archaeology 20.) Stockholm: Stockholm University.
- Welinder, S., 2001. The archaeology of old age. *Current Swedish Archaeology* 9, 163–78.

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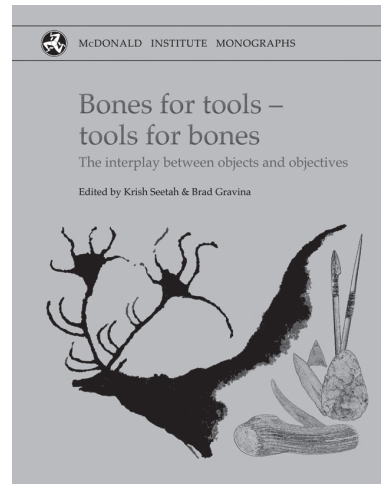
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