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THE DEAD DON'T BURY THEMSELVES: REFLECTIONS ON ATYPICAL BURIAL ARRANGEMENTS AND GENDER IN MIERZANOWICE CULTURE CEMETERIES

ABSTRACT

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Many archaeological and bioarchaeological studies of the past – and too many in the present day – have confined their investigations of gender to an assumed male/female, man/woman binary. Many Early Bronze Age cemeteries in Central Europe offer the possibility of going beyond the binary, thanks to their richly and complexly gendered burial practices. In this study, 12 burials from three Mierzanowice culture cemeteries in Poland are investigated bioarchaeologically. These burials are of particular interest because each one in its own way deviates from the typical manifestations of gender in the mortuary practices of this time. Questions are raised, and potential implications are discussed relating to conceptions of gender in these Early Bronze Age communities.

Keywords: Mierzanowice culture, Early Bronze Age, atypical burials, gender, bioarchaeology, osteoarchaeology
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INTRODUCTION

The Early Bronze Age saw the standardization of certain aspects of burial arrangements and orientations within various spheres of cultural contact throughout much of Central Europe. Influences from preceding cultural paradigms such as the Corded Ware and Bell Beaker phenomena were assimilated to varying degrees into unique regional

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expressions within the funerary sphere (Włodarczak 2017). Characteristics of burials that were typically standardized included the axis of the body with respect to cardinal directions, the side of the body on which the deceased was placed, the direction of the face of the individual, and the suite of appropriate grave goods. For Únětice culture (UC) burials, the axis differed regionally, but on the territory of modern-day Poland, it was typically N/S (Sosna 2007; Vandkilde 2007; Pokutta 2013; Czebreszuk 2013); for groups of the Circum-Carpathian Epi-Corded culture Circle (ECC), including Mierzanowice culture (MC) communities, the directional axis was usually E/W (Kadrow 1994; Kadrow and Machnik 1997; Marková and Ilon 2013).

An important distinction between these paradigms, however, is that the axis of the body appears to be a strongly gendered symbol in ECC regions, but not among UC groups. At Únětice culture cemeteries in Poland, for example, most individuals in flat graves are laid on their right sides, with their heads to the south, feet to the north, facing east (Czebreszuk 2013; Pokutta 2013); some UC groups in Slovakia seem to follow directional and gendered aspects of ECC burials (Marková and Ilon 2013). In Epi-Corded cemeteries, males and females are almost always buried in mirror-opposite positions: they lie on different sides (or at least with legs and head turned to different sides), with their heads to opposite ends of the compass, yet on the same axis. Throughout much of the ECC region, including among MC communities, males are on their right sides with their heads to the west and feet to the east, and females are on their left sides with their heads to the east and feet to the west (Kadrow 1994; Kadrow and Machnik 1997; Czebreszuk 2013; Marková and Ilon 2013). In fact, this type of mirror-opposite, *seemingly* sex-based schema holds throughout a large portion of the Carpathian Basin (O'Shea 1996; Marková and Ilon 2013), and among what Helle Vandkilde (2007) calls the Danubian cultures. There are some regional differences with regard to which sides and directions are assigned to males versus females, but the symbolism of both side and direction seems to have a gendered aspect throughout most of these territories.

Given the truism that "the dead don't bury themselves", and taking into account that mirror-opposite sex- (or gender-) based arrangements held in this region from approximately 2800/2700 BCE to around 1600 BCE (in Lesser Poland, in any case) (Kadrow and Machnik 1997; Włodarczak 2017), one can assume that such burial characteristics are rooted in a deep ideology with certain conceptions of gender, and that, taphonomy aside, no aspect of the arrangement of a burial was "accidental". For this reason, I believe it to be particularly informative to look at what might be called "atypical" burial orientations, or "exceptions to the rule". Accordingly, in this paper, a dozen such burials from three MC cemeteries in Lesser Poland are examined – some for the first time. The goal is to examine the specifics of each case as well as any generalities, and to begin a conversation about how bioarchaeological approaches might help to shed light on conceptions of gender in Early Bronze Age Central Europe.

THEORETICAL CONSIDERATIONS REGARDING SEX AND GENDER

Sex and gender are still often conflated, or at least not properly differentiated in archaeological literature. For this reason, it is necessary to begin with the basic distinctions between the two. At the most fundamental level of the term, sex is the biological state of an individual as pertains to their primary and secondary sexual organs and characteristics. Gender, on the other hand, is the set of social meanings, values, and expectations placed on categories of sex.

The concept of gender as something related to, but distinct from biological sex, has been in existence since at least 1955, made explicit by psychologist and sexologist John Money (Money 1955; Haig 2004). By the 1980s, considerable numbers of feminist scholars had adopted and expounded upon the concept of gender (Haig 2004). Perhaps the most common understanding of gender in its earliest usage in archaeology and bioarchaeology was as the sum of *social* conventions and expectations for behavior, personality, and performance based on biological sex; in other words, sex is biological and gender is cultural (e.g., Armelagos 1998; Johnson 2011). More recently, scholars such as Pamela Geller (2008; 2017) have called for bioarchaeologists to resist foisting the "presentist" schema of male/female, man/woman on the societies of the past that we study.

In fact, the ubiquity and antiquity of gender variants beyond the binary is well established. Herodotus mentions a category of "effeminate" men, "afflicted… with a feminizing disease", among the Scythians, called "Enarees", at least some of whom were soothsayers (Herodotus 2014, I:105, IV:67). Serena Nanda (2014) documents many historic and ethnohistoric examples of gender variants, including Navajo *nádleeh*, Mohave *alyha* and *hwame*, Indian *hijras* and *sâdhins*, and Albanian *burneshas*. Often called "sworn virgins", *burneshas* have been reported among Albanian and western Balkan pastoralist populations since at least the 19th century. These biological females become gendered men, socially – often to fill the roles of sons in a family without suitable male heirs. They embody this new role through clothing, behavior, speech, and are afforded privileges typically reserved for biological males. Although everyone knows that they are not biologically males, they are generally treated as social men throughout their societies (Nanda 2014).

Regardless of the biological sex of these individuals, their gender variance is generally not recognized as a complete transition from man to woman, or vice versa, but rather as a different status altogether. Often, this involved being seen has having qualities of both men and women, or of being biologically one sex while taking on the gender typically associated with the other sex. In all of these examples, one of the defining characteristics of a gender variant is engaging in labor that is typically reserved for the opposite sex. The degree to which a gender variant would be allowed to participate in all social roles and enjoy all social privileges of the opposite sex/gender varied across cultures. One would expect the same would be true of how they were treated in death. As a case in point, René

Grémeaux (1996) documents the funeral of one *burnesha* who was afforded the customary masculine ceremonial clothing for their burial, but was not given the traditional male funerary lamentation.

BIOARCHAEOLOGICAL APPROACHES TO GENDER

Gender is a complex phenomenon that arises out of the social categorization of biological differences, the imbuement of those categories with meaning, the definition of socially sanctioned roles associated with each category, and the performance and contestation of those roles by individuals (Butler 2006; Nanda 2014). And as gender is performed, practiced, and embodied throughout one's life, patterns of osteological "sedimentation" of biomechanical stresses and bodily modifications associated with these performances can be sought (Sofaer 2006).

In the pursuit of information on gender in past societies, bioarchaeologists have variously looked at musculoskeletal stress indicators, pathological markers on bone, and traces of blunt- or sharp-force trauma. Such approaches have been used in studies that have been suggestive of gendered differences in labor practices (e.g., Milner and Larsen 1991; Robb 1997; Larsen 1998; Lorkiewicz 2011). Additionally, a large bioarchaeological literature exists regarding differential disease risk (e.g., Bird and Rieker 2008; Grauer and Stuart-Macadam 1998; Koziol 2012; Martin 1997) and exposure to violent trauma (e.g., Martin 1997; Robb 1997; Walker 1997; Grauer and Stuart-Macadam 1998; Koziol 2012; Tung 2012) based on salient social categories such as sex, gender, age, and occupation.

There have been relatively few bioarchaeological studies to address non-binary gender categories, but a couple are worth noting. Over a decade prior to Pamela Geller's appeal to bioarchaeologists, Hollimon (1996) used data on gendered patterns of degenerative joint disease and of grave goods, along with anthropologically estimated biological sex to infer the possible existence of "two-spirit" burials in a Chumash population. There are also notable studies pertaining to the possibility of gender variant burials in Early Bronze Age Europe. Sosna and colleagues (2008), for example, used a resampling approach at an Únětice cemetery in Rebešovice, Czechia, to demonstrate the near parity of treatments of males and females in terms of overall wealth and emphasis given to burials. More relevant for this paper, however, is their brief discussion of an individual of indeterminate sex, who exhibits both typically masculine and feminine burial characteristics. They entertain the possibility of a "gender transformer" (Sosna *et al.* 2008, 352), but claim that an elite female with masculine traits attached to her position is more likely.

At least one study has used ancient DNA to examine the concordance between "archaeologically" sexed individuals (using burial orientation and grave goods) and their genetic sex according to the presence or absence of the SRY gene. In this study, Michaela Vaňharová and Eva Drozdová (2008) were able to extract DNA from 21 individuals, in-

cluding mostly juveniles and children. They found that, of 13 typically masculine burial configurations, there was one female of indeterminate age. More strikingly, of seven typically feminine burials, six were of biological males, including three young children and three individuals ranging between 15 and 22 years of age. Although they decline to speculate on the significance of this discordance, Jan Turek (2016) writes of the possibility that either the males buried in typically feminine arrangements may have been meant to be raised as (social) women, or on the other hand, they may not yet have undergone a rite of passage to attain full status as a man. As a final example, Porčić and Stafanović (2009), in their study of the Early Bronze Age cemetery at Mokrin in Serbia, used a cluster analysis of entheseal development to show that different labor divisions and practices interacted with sex and status, as indexed by grave goods. Approaches such as this, which take account of musculoskeletal stress indicators in a holistic sense, have the potential to be particularly informative about individuals buried in an "atypical" manner, and also about divisions of labor beyond the binary.

BACKGROUND OF REGION AND SITES IN CURRENT ANALYSIS

The burials examined in this paper come from cemeteries of the Mierzanowice culture in Lesser Poland. Generally, in this region, sites and cemeteries are located in the loess upland areas, although additional environments are exploited and settled increasingly in the later stages of the MC. The Mierzanowice culture can be dated to between 2400/2300 BCE and about 1600 BCE at the latest (Kadrow and Machnik 1997; Górski *et al.* 2013; Włodarczak 2017). The phenomenon is divided into Proto-Mierzanowice (~2400/2300-2200 BCE), Early Mierzanowice (~2200-2050 BCE), Classic (beginning around 2050), and Late (beginning between 1950/1750 and ending between 1950/1600, depending on the region and group) Phases (Kadrow and Machnik 1997; Włodarczak 2017). The Late Phase saw increasing regionalization of ceramic styles, diversification of settlement types and burial grounds, an increase in craft specialization, and a growing emphasis on the status of deceased individuals, as indicated by the uneven distribution of prestige goods in graves (Włodarczak 2017). However, the principal features of burial arrangements and orientations remained largely the same over the territory of MC groups in Lesser Poland. In particular, this includes the aforementioned gendered aspects relating to the placement of the body.

As previously discussed, at MC sites in Lesser Poland, the majority of burials tend to be oriented about an E/W axis (with a certain amount of angular variation around this axis) – males with their heads to the west, females with their heads to the east, in each case with the face directed to the south. As this arrangement would imply, males are typically buried on their right sides (or on their backs, with their legs and heads turned to the right) and females on their left sides. Although the sex of subadults cannot be reliably estimated,

their burials seem to follow a similar pattern. Out of 121 individuals from four MC cemeteries (Szarbia, Szarbia Zwierzyniecka, Żerniki Górne, Kichary Nowe) for whom burial orientations could be reliably ascertained, about 61% of subadults were buried W/E (head to the west), compared to 56.6% of adults, and 39% were buried E/W, compared with 41.7% of adults (the remaining 1.7% of adults were buried along a N/S axis).

There are at least three components of a burial that seem to be gendered: the primary axis of the body (including direction of the head and feet) and, to some extent, certain grave goods (see Summaries of atypical burials below) – but also, the side on which the deceased is buried. Most often, the side and the axis follow a normative pattern (W/E – R side; E/W – L side). However, in a minority of cases, individuals are buried facing north, which also means that the typical complement of axis and side is violated: for example, individuals buried W/E, but on their left side, or individuals buried E/W, but on their right side. The symbolic significance of this arrangement should not be taken for granted. It is possible that, since both axis and side are gendered, this combination of differently gendered components has a social significance regarding the status of the individuals. It is equally possible that it is rather the unorthodox positioning of the face to the north that takes precedence, and the side on which the body is laid is but a side effect. Either way, this phenomenon seems to happen at many MC cemeteries at small, but not insignificant frequencies. In Part I of his two-volume work on MC cemeteries of the Sandomierz Uplands, Jerzy Bąbel gives a tally, in Table 14, of the orientations of the faces of 169 individuals from seven sites (Bąbel 2013, 78). The table shows that 8/169 individuals, or about 4.73%, were buried facing north. Furthermore, I was able to calculate, using information from Kadrow and colleagues on the cemetery at Iwanowice, Babia Góra (Kadrow *et al.* 1992), that of 82 adults for whom sex, burial axis, and side could be reliably estimated, one (1.2%) was buried facing north (female; E/W – R). Similarly, one (3.8%) out of 26 subadults was buried facing north (W/E – L), for a total of 2/108, or about 1.9% of individuals for whom the necessary information could be estimated. It is worth noting that this subadult individual – actually a juvenile of about 17-18 years of age – was estimated to be male, and was lying in a double grave with another juvenile, estimated to be male; the two individuals appear to be facing one another.

In this paper, burials that are "atypical" in some aspect of the usual gendered signifiers are investigated from three cemeteries of the MC: Szarbia Zwierzyniecka, Żerniki Górne, and Szarbia (Koniusza commune). Excavations at Szarbia Zwierzyniecka (Skalbmierz commune, Kazimierza County, Świętokrzyskie Province) were carried out between 1980 and 1985, and were led by Barbara Baczyńska. The cemetery, which was the focus of the research, was located next to a settlement, and is estimated to have included approximately 540 graves in total. The excavated portion included 82 human burials. The cemetery appears to have functioned from the Classic through the Late Phase of the MC. Radiocarbon dates from both the settlement site and the cemetery indicate that the existence of the settlement complex was from about 2130-1664 BCE (Baczyńska 1994).

The cemetery at Żerniki Górne (Busko-Zdrój commune, Busko-Zdrój district, Świętokrzyskie Province) was a multi-period site (Corded Ware, Bell Beaker, Mierzanowice, Trzciniec) that was primarily excavated between 1965 and 1968 by Andrzej Kempisty (Kempisty 1978). In all, 39 burials of the MC were uncovered. Finally, the cemetery at Szarbia (Koniusza commune, Proszowice district, Lesser Poland Province) was excavated in the year 2000 by Barbara Baczyńska. In all, 44 graves of the Mierzanowice culture were discovered. As this was a rescue excavation, only the most endangered portion of the cemetery was excavated. The majority of the burials come from the Late Phase of the MC, with a small number coming from the later part of the Classic Phase (Baczyńska 2000a).

Two of the three sites have previously been investigated anthropologically to some degree. Szarbia Zwierzyniecka was analyzed by Elżbieta Haduch (1997). In her analysis, Haduch estimated the sex and age of the individuals as well as trauma and pathologies, such as *cribra orbitalia* (Haduch 1997; Gleń-Haduch *et al.* 1997). A large portion of the published anthropological monograph focused on morphological and craniometric aspects of the skeletons. The skeletons from Żerniki Górne were investigated by Andrzej Wierciński and Alina Wiercińska (Kempisty 1978). The primary analyses carried out seem to have been estimations of age and sex. A later study (Tomczyk *et al.* 2012) was carried out, looking at the frequency of linear enamel hypoplasia (LEH), but the article indicates that only the Corded Ware and Trzciniec burials were analyzed. No specific mention of MC individuals was made, although it is possible that they were subsumed into one or the other group. The Szarbia site (Koniusza commune) had not been previously analyzed by an anthropologist. The estimations and determinations (sex, age, pathology, trauma, entheses, etc.) used in the current paper are those carried out by the author (regardless of whether they were previously conducted) to ensure intraobserver consistency.

METHODS

Multiple anthropological methods were used in the estimation of the sex and age of individuals, and a composite result was obtained for each individual. For age estimation of adults, features of the pelvis were analyzed using the methods of Brooks and Suchey (1990), Todd (1920; 1921), and Lovejoy and colleagues (1985). Suture closure of the cranium was assessed per Meindl and Lovejoy (1985) and Buikstra and Ubelaker (1994). Where such methods were of little use due to lack of diagnostic features or taphonomy, dental attrition (Lovejoy 1985) was assessed. When possible, greater weight was given to indicators of the pelvic region for adults with fully fused epiphyses. Scheuer and Black (2000) and Buikstra and Ubelaker (1994) were used to estimate age for younger individuals based on long-bone fusion, and methods compiled in Bass (2005) and White and Folkens (2005) were used to estimate age based on stages of tooth development and eruption.

Estimation of sex was carried out using the heuristics detailed in Buikstra and Ubelaker (1994), including the characteristics of the ischio-pubic region as described by Phenice (1969). However, given the lack, or taphonomic degregation of the ischio-pubic region for many individuals, as well as the subjective nature of categorical assessments of the greater sciatic notch (especially in cases of individuals who do not fall at the extremes), the multi-component method of Jaroslav Bruzek (2002) was also used. Where there was a slight disagreement between methods (e.g., probable male vs. male, or indeterminate vs. male), the more robust methods were given extra weight. However, in the case of extreme disparity in results or where a high degree of ambiguity existed, the sex was considered "indeterminate".

This study also attempted to document, where possible, skeletal indicators of nutritional insufficiency (e.g., porotic hyperostosis, cribra orbitalia, rickets, scurvy), dental disease (e.g., caries, antemortem tooth loss, abscesses, linear enamel hypoplasia or LEH), infection (e.g., osteomyelitis, periostitis), and general indicators of health, such as adult stature, using the methods described in Ortner (2003), Ruff *et al.* (2012), Waldron (2009), Mann and Hunt (2005), and Buikstra and Ubelaker (1994). Individuals were also inspected for blunt force and sharp force trauma, including cranial depression fractures, radiating fractures, spiral fractures, parry fractures, cutmarks, and percussion marks, using the methods of Wedel and Galloway (2014).

Given the aforementioned significance of divisions of labor in social constructions of gender, indicators of musculoskeletal stress were also recorded. Here, musculoskeletal stress is used to signify any load or biomechanical demand placed upon the skeletal system. Markers of musculoskeletal stress that were used in this study were primarily osteoarthritic in nature (marginal osteophytes, eburnation, new bone formation, pitting), and were evaluated per Waldron (2009) and Mann and Hunt (2005). Elsewhere, I have attempted to reconstruct patterns of labor using entheseal robusticity, but results are beyond the scope of this paper and have been omitted.

SUMMARIES OF ATYPICAL BURIALS

The graves described below (summarized in Table 1) are all unusual in some typically gendered aspect of their burial regimes. Two of them are males (one probable male) buried in the gendered female orientation (E/W – L). One is an individual buried E/W – L, but with a masculine grave offering. Nine are buried on an east-west axis (some E/W, others W/E), but are facing north.

Grave goods at these cemeteries are found in burials of males, females, and children, and they appear to be gendered as well. By "gendered", here, I mean that certain items are statistically more frequently associated with particular burial orientations, which are most often associated with a particular sex – though, importantly, not always. As Mike Parker

Table 1. Summarizing information for atypical burials. Abbreviations – M – male, PM – probable male, I – indeterminate sex, PF – probable female, F – female, UD – unable to determine, SA – subadult, J – juvenile, YA – young adult, MA – middle adult, OA – older adult, UA – unspecified adult, AMTL – antemortem tooth loss, OA – osteoarthritis, LEH – linear enamel hypoplasia

Site	Grave	Orientation	Side	Sex	Age	Grave Goods	Pathologies
Szarbia Zwierzyniecka	5/V	E/W	L	M	MA	ceramics, 70 faience beads, 30 shell beads, 2 bone pins	Spondylolysis in L4
Szarbia Zwierzyniecka	19/XI	E/W	L	PM?	MA/OA	3 bronze earrings, 5 faience beads, 10 shell beads, ceramic fragments, flint flakes	caries (1 tooth), AMTL (2 teeth)
Szarbia (Koniusza commune)	50	E/W	L	I (F?)	MA	125 shell beads, 1 arrowhead	OA on thoracic vertebra, abscess above M^1?
Szarbia (Koniusza commune)	37	W/E	L	PF	MA	1 bronze ornament (*blaszka/okucie*), 1 bronze willow-leaf ornament, bone pin fragment	caries (1 tooth), OA on L5
Szarbia (Koniusza commune)	21	E/W	R	UD (F?)	YA	None	*cribra orbitalia*, LEH (9 teeth), OA on dens of C2
Szarbia Zwierzyniecka	3/III	E/W	R	UD (M?)	UA	50 shell beads, 1 faience bead, 1 bone divider, 1 clamshell disk (*tarczka*), flint flakes, ceramic fragments	Schmorl's node (1 vertebra)
Szarbia Zwierzyniecka	7/XI	E/W	R	UD	UA	42 shell beads, 19 bone beads, 6 faience beads, 1 clamshell divider, flint flakes, ceramic flakes	None
Szarbia (Koniusza commune)	35a	W/E	L	N/A	SA (1-3)	1 bronze earring, 1 bone pin	None
Szarbia Zwierzyniecka	1/III	E/W	R	N/A	SA (8-12)	7 faience beads, ceramic fragments, potsherds, bovine femur	*cribra orbitalia*, caries (1 tooth)
Szarbia (Koniusza commune)	26	W/E	R	N/A	SA (10-12)	numerous shell beads, 16 shell pendants, 1 bone pin	None
Szarbia (Koniusza commune)	26	E/W	R	PF?	J/YA (16-22)	shell beads, 13 faience beads, 3 animal-tooth pendants	caries (1 tooth), AMTL, (2 teeth)
Szarbia Zwierzyniecka	23/IX	E/W	R	M?	UA	clay pot, 1 faience bead?, fragments of boar-tusk pendant?	OA (5 vertebrae), OA (shoulder)
Szarbia Zwierzyniecka	23/IX	?	?	N/A	SA (2-4)	1 faience bead?, fragments of boar-tusk pendant?	None
Żerniki Górne	75	E/W	R	UD (M?)	UA	1 awl, 1 pendant (unspecified material)	perimortem ulnar and radial fractures
Żerniki Górne	75	?	?	N/A	SA (?)	None	None

Pearson points out, funerary practices, including bodily treatment, orientation, and adornment, create an "idealized representation – a 're-presenting' of the individual by others..." (1999, 4). Although the clothing, adornments, and items given the deceased for burial may or may not have been owned or used by the dead during life, they capture some reality of the perception of the dead by the living. It is this idealized presentation that makes grave goods so informative about the social construction of gender in a society.

For many types of grave goods found at these cemeteries, there is more fluidity than might be indicated by the burial orientations. According to existing literature, items which are primarily reserved for male graves include stone battle axes, arrowheads and stone wrist guards, boar-tusk pendants, discs or badges (in the Polish literature, variously: *tarczki*, *blaszki*) made of bone or copper, and sometimes pins and antler artifacts. Predominantly female items include beads of bone and mussel shell (used in necklaces and other manner of jewelry), necklaces of animal teeth, copper or bronze spiral-shaped earrings, and needles (Baczyńska 1994; Kadrow 1994b; Kadrow and Machnik 1997). Although they are apparently more prevalent in female graves, beads of bone and mussel shell can be found in the graves of males as well.

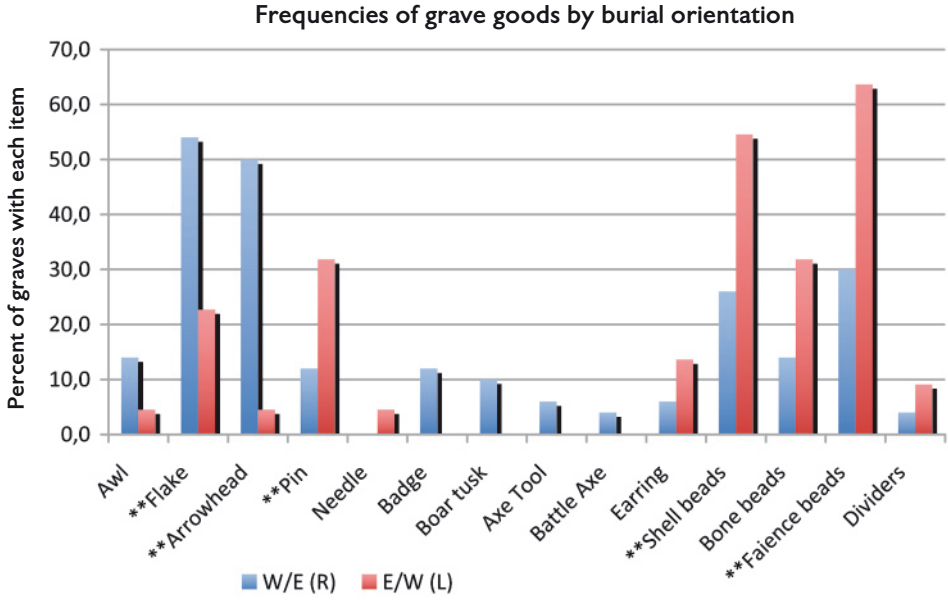

Fig. 1. Frequencies of grave goods by burial orientation. Percent of burials in "masculinized" and "feminized" orientations that include each type of grave good. A double asterisk (**) next to the grave good indicates a statistically significant difference in frequency between burial orientations. Abbreviations: W/E (R) – the "masculinized" burial orientation; head to the west, feet to the east, laid on or turned toward the right side of the body. E/W (L) – the "feminized" burial orientation; head to the east, feet to the west, laid on or turned toward the left side of the body. Edited by M. Toussaint

As part of the analysis for this paper, grave goods from the three cemeteries in question were divided into 25 categories and tallied based on whether they were found in burials of W/E – R oriented individuals or E/W – L alignments (for this part of the analysis, the north-facing burials were omitted). Most items could be found in either type of grave, but there were a handful found only in one orientation or another. Boar tusk pendants, stone "battle axes", flint axe tools, and "badges" could only be found in the "masculinized" orientations. Needles (*igły*, in the Polish literature) were restricted to the "feminized" orientations, but it should be noted that out of 72 of the investigated graves, only one needle was found; moreover, it is not clear whether pins (*szpilki*), which are found in graves of both orientations, and needles (*igły*) are always clearly differentiated in the literature. Statistical analysis of the frequencies of each class of objects in the different orientations showed a significant difference in only five of the categories (Fig. 1): arrowheads and flint flakes (including items given variously as *odłupek, łuszczeń* in the Polish literature) were found significantly more often in W/E – R orientations, whereas pins, shell beads, and faience beads were found more frequently in E/W – L orientations (chi-square or Fisher's exact test, depending on the frequencies; $p < 0.05$).

Males or Probable Males in E/W – L orientations

Szarbia Zwierzyniecka: grave 5/V

The individual in grave 5/V is buried along an E/W axis, with their legs (and presumably their head) turned to the left, which is a typically "feminine" burial orientation. The lower half of the skeleton is in anatomical position, while the upper part has been secondarily displaced and mixed. The individual was buried in a Late Phase grave pit that was partially dug into a Classic Phase settlement pit (Baczyńska 1994). Grave goods include ceramics, 70 faience beads, 30 shell beads, and two bone pins. Although none of these are exclusively diagnostic of feminine graves, the complement of grave goods fits the feminine schema well. Elżbieta Haduch estimated the individual to be a male of age category *maturus/senilis*, approximately 50 years old (Baczyńska 1994; Haduch 1997). My assessment largely concurs; the individual is clearly male (based on pelvic morphology – the skull is missing), probably in the Middle Adult age category (35-49 years; Buikstra and Ubelaker 1994).

Due to the lack of a skull, many classic paleopathological indicators were not able to be assessed. However, out of 12 present vertebrae, no Schmorl's nodes were found, nor were any osteoarthritic changes noted. Neither was osteoarthritis noted in any of the major joint systems (shoulder, elbow, hip, knee). The only pathological change noted was spondylolysis in the fourth lumbar vertebra (L4). This was also noted by Haduch (1997), who additionally mentioned traces of spondyloarthrosis in thoracic vertebra 12 (T12) and L1 and L2. She connected these pathologies to scoliosis. According to the summaries of Waldron (2009) and Mann and Hunt (2005), the exact causes of spondylolysis are unknown, and may be congenital, stress-related, or both. However, these sources also state that bio-

mechanical stress is likely to play a part. This is a condition that seems to be acquired in childhood, and is more common in males than females.

Szarbia Zwierzyniecka: grave 19/XI

This individual was preserved in a highly fragmented state, and was also buried in the typically "feminine" orientation (E/W – L), based on the positions of the remaining bones (Baczyńska 1994). Haduch (1997) lists the individual as a female of age group *senilis*, more than 60 years old. In my analysis, I was unable to locate any diagnostic fragments of the pelvis, and based on a rather masculine skull (especially with mastoids, supraorbital margins, and nuchal crest scoring a 4 out of 5 on the scale given in Buikstra and Ubelaker 1994), I estimated the individual to be a "Probable Male". Given the poor preservation of the exocranial surface, my age estimate of Middle or Older Adult was based on extreme tooth wear. One caveat with regard to sex estimation based solely on the skulls of older individuals is that traits of female skulls are known to masculinize somewhat with increasing age (Meindl *et al*. 1985). The individual was buried with three bronze earrings, five faience beads, 10 shell beads, ceramic fragments, and flint flakes. These grave goods mostly follow a typically "feminine" pattern, but it is worth noting that, although flint flakes are not exclusively "masculine" items, they are found statistically more often in W/E – R graves.

Due to missing skeletal elements and poor preservation, none of the osteoarthritic changes could be assessed. The one orbital present did not show signs of *cribra orbitalia*. Out of 16 present teeth, no linear enamel hypoplasia (LEH) and no abscesses were noted. However, one instance of caries and two instances of antemortem tooth loss (AMTL) were found.

(Possible) Female with masculine grave offering

Szarbia (Koniusza commune): grave 50

The individual in grave 50 was lying on their left side, head to the east, feet to the west – the prototypical "feminine" burial position. Found in the grave were 125 shell beads and one heart-shaped arrowhead, discovered under the left elbow of the individual (Baczyńska 2000b). The shell beads can, as mentioned previously, be found in both "masculine" and "feminine" grave orientations, but are more common in E/W – L arrangements. However, arrowheads are nearly exclusively found in W/E – R orientations. They form an essentially "masculinized" category of grave goods. There was no indication of sharp force trauma on this individual that would suggest the arrowhead was in the grave as a result of injury.

As for the sex of the individual, it is a rather complicated issue. On the one hand, the greater sciatic notch appears to score a 5 (female) on the 1-to-5 scale as presented in Buikstra and Ubelaker (1994). However, the picture is a bit more ambiguous using the methods laid out in Bruzek (2002). The shape and symmetry of the greater sciatic notch register as female, but both the preauricular sulcus and the composite arch register as male. The

preauricular sulcus is shallow, with an open circumference, which is given in Bruzek (2002) as being seen more frequently in males. Furthermore, the features of the skull are intermediately robust, most scoring a 3 on the 1-to-5 scale mentioned above, which is "indeterminate". I estimated the individual to fall into the Middle Adult age category, perhaps between about 40 and 50 years of age, based primarily on vault fusion and tooth wear; the pubic symphysis was not preserved and the auricular surface was too taphonomically altered to assess with any degree of confidence.

Based on the available indicators, the individual seems to have enjoyed relative health in life. Out of 21 teeth present, there were no signs of caries or LEH. No AMTL was noted. There may have been an abscess into the left maxillary sinus above M^1, but taphonomic changes make it difficult to say definitively. No *cribra orbitalia* nor porotic hyperostosis were visible. Out of nine remaining vertebra, no Schmorl's nodes were present, and only one thoracic vertebra showed slight signs of osteoarthritis (OA). Of the two major joint systems that were able to be analyzed (shoulder and hip), no OA was seen. Traces of trauma were also absent.

Single, adult burials facing north

Szarbia (Koniusza commune): grave 37

The individual in grave 37 was buried W/E, on their left side, facing north (Fig. 2). Analysis of diagnostic traits led to a biological categorization of the individual as a Probable Female. Both cranial and pelvic traits support this estimation. Anthropological analy-

Fig. 2. Grave 37, Szarbia (Koniusza commune). Probable Female, Middle Adult. Laid along a W/E axis, on left side of body, face looking north. Photo by P. Włodarczak

sis indicates that she was a Middle Adult (perhaps between 35 and 45 years of age). The individual was richly endowed with grave goods. Among the inventory of the grave were: a bronze adornment (*blaszka/okucie*) probably used as part of a belt, a bronze ring-like ornament with a willow-leaf motif, part of a bone pin, a fragment of a boar tusk pendant, a miscellaneous bone tool, two animal teeth, 275 shell beads, 51 shell dividers, 47 bone beads, and four faience beads (Baczyńska 2000b). As described above, boar tusk ornaments and items described as *blaszki* are usually found in "masculine" burial orientations. The other items are either not gender-specific, or are found more frequently in graves of "feminine" orientation.

Only two pathologies were noted on the skeleton. One out of 18 teeth presented with caries. Of the three vertebrae present, one (L5) showed signs of osteoarthritis. There were no traces of trauma on the skeleton.

Szarbia (Koniusza commune): grave 21

This individual was buried E/W, on their right side, facing north (Fig. 3; Baczyńska 2000b). Features of the skull are rather gracile. The pelvis is fragmented, making sex estimation difficult. The greater sciatic notch appears to register as a 2 or 3 on the 1-to-5 scale. Use of the methods described in Bruzek (2002) was largely rendered infeasible due to the

Fig. 3. Grave 21, Szarbia (Koniusza commune). Sex Indeterminate (possible female?), Young Adult. Laid along an E/W axis, on right side of body, face looking north. Photo by P. Włodarczak

state of preservation of the pelvis. As a whole, the skeleton appears more feminine than masculine, but based on the state of preservation, I am not comfortable making a strict anthropological determination. The individual appears to be a Young Adult (perhaps between 20-25/30) based primarily on tooth eruption and wear. No grave goods were found with this individual.

One of the orbits of the individual shows slight traces of *cribra orbitalia*. Of the 30 teeth present, none show signs of caries, but nine exhibit LEH. Neither AMTL nor abscesses are visible. There is no porotic hyperostosis, and none of the major joint systems show signs of osteoarthritis. The dens of C2, however, does show some traces of OA, particularly with the partial ossification of the apical odontoid ligament. There are no Schmorl's nodes present in any of the nine preserved vertebrae.

Szarbia Zwierzyniecka: grave 3/III

In grave 3/III, a fragmentarily preserved skeleton, secondarily disturbed, was found. On the basis of the lower limbs, which appear not to have been moved, the original position of the skeleton was thought to be E/W – R (Baczyńska 1994). Based on the fusion and size of the long bones, Haduch (1997) suggested that the individual was an adult male. I refrained from estimating sex, given the lack of diagnostic elements, but the individual was certainly an adult – though which stage of adulthood is unclear. The individual was buried with 50 shell beads, one faience bead, one bone divider, one clamshell disk/badge (*tarczka*), a lenticular flint knife, flint flakes, and fragments of ceramics. Again, the disk/badge seems to be rather firmly connected with a masculine presentation, as do the flint flakes, although they can be found in graves of "feminine" orientation as well. The shell and faience beads are found more often, but by no means exclusively, in E/W – L graves.

Only one tooth and one vertebra were present. The tooth showed no signs of either LEH or caries. The vertebra presented with a Schmorl's node, but no OA. The only joint that could be assessed was the shoulder, and no OA was found. Additionally, no traces of trauma were seen on the remains.

It is worth noting that Haduch (1997) also indicated the presence of two lumber vertebrae and some fragments of forearm bones of a subadult. I did not make note of these in my assessment. Nonetheless, it should be considered that this may have been some form of a double burial (see below), but this is unclear.

Szarbia Zwierzyniecka: grave 7/XI

The highly fragmented skeleton in grave 7/XI was scattered throughout various levels of the excavated pit. Based on the positions of the tibiae at the lowest level of the pit (where the largest group of bones was found), it was estimated that the initial orientation of the body was E/W – R (Baczyńska 1994; Haduch 1997). It should be mentioned, however, that such an orientation is difficult to reconstruct in the illustration given, which appears to better correspond to a W/E – R orientation. There were no diagnostic elements available

to make an estimate of sex or age, except to say that the individual was certainly an adult. As for grave goods, they were similarly disbursed throughout different levels of the pit. Items in the grave included 42 shell beads, 19 bone beads, six faience beads, a divider made out of clamshell, flint flakes, and ceramic fragments.

Very little was available to assess for pathologies, particularly considering that no skull was present. No traces of OA were found on the articular surfaces of the tibiae. There was also no evidence of trauma on any preserved elements.

Single, Subadult Burials Facing North

Szarbia (Koniusza commune): grave 35a

In grave 35a, a highly fragmented and secondarily disturbed subadult skeleton was found. It was inferred that the initial position of the individual was W/E – L (Baczyńska 2000b). Additionally, a layer of residue from burning, mixed with loess, was discovered where the legs of the individual should be. Based on tooth eruption, the individual was between 1 and 3 years of age. The child was buried with one bronze earring and one bone pin. Interestingly, in the site report, Baczyńska (2000b) notes that the grave pit is undoubtedly too large for this individual; this raises the possibility that perhaps it was prepared with a double burial in mind – eventually.

Eight teeth were present, none of which showed signs of LEH or caries. No traces of *cribra orbitalia* or porotic hyperostosis were found, and no signs of trauma either.

Szarbia Zwierzyniecka: grave 1/III

The skeleton in this grave was incomplete, and secondarily disturbed. Based on the position of the skull and the lower limb bones (which seem to be the only parts of the skeleton in the original position), the individual was laid on their right side, with their head to the east and feet to the west. The state of fusion of the various bones and the degree of tooth eruption indicate an age of approximately 8-12 years. This is in fairly close agreement with the age estimated by Haduch (1997): 12-14 years. The child in the grave was found with seven faience beads, ceramic fragments and potsherds, and the femur of a cow (Baczyńska 1994).

As for pathologies of the cranium, one of the orbits showed slight traces of *cribra orbitalia*. No porotic hyperostosis was found. Of 25 teeth, one was affected by caries, but none bore signs of LEH. No traces of trauma were found on the bones.

Double Burials, One Individual Facing North

Szarbia (Koniusza commune): grave 26

This is an interesting case of a double burial in which the deceased are aligned along the same axis, but different orientations. Individual I lay with their head to the west, feet

to the east, facing south. Individual II lay with their head to the east, feet to the west, facing north. Thus, they are both on their right sides. It should be noted, however, that both skeletons are incomplete and bones are secondarily disturbed. Of individual II, primarily the skull and upper and lower limb bones remain. In the site report, Baczyńska (2000b) notes that although it is difficult to say much about the original orientation of individual II, the position of the hands suggests that they were on their right side (and thus, facing north). Furthermore, it seems as though individual I was placed into the grave first, and later, individual II was moved into the same grave.

Near the head and neck of individual I, numerous shell beads, 16 shell pendants, and a bone pin were found. Additionally, more shell beads, 13 faience beads, and three animal-tooth pendants were found near the chest of individual II. Tooth eruption indicates that individual I is a subadult, between the ages of 10 and 12. Based on a combination of tooth eruption and tooth wear, individual II is either a Young Adult or juvenile, between 16 and 22 years of age. Since the pelvis is missing from individual II, sex estimation was based on the skull, which is fairly feminine in its diagnostic traits. Provisionally, it scores as a Probable Female.

Individual II, which is the north-facing individual, shows no signs of *cribra orbitalia* or of porotic hyperostosis. Out of 25 teeth present, no traces of LEH were found, but there was one case of caries. Surprisingly, given the young age of the individual, there were two cases of antemortem tooth loss (R and L P_2). Taking into account the age of the individual, and the fact that the missing teeth are on the same position on either side of the mandible, it is possible that the use of these teeth as tools to process material may have played a role in their loss. Unsurprisingly (again, given the young age), neither of the joint systems that were complete enough to investigate (elbow and knee) shows signs of OA. The individual also showed no traces of trauma.

Szarbia Zwierzyniecka: grave 23/IX

This is a burial of an adult and a young child. The adult is given in the literature as being a male of age *senilis*, greater than 60 years old (Baczyńska 1994; Haduch 1997). Unfortunately, by the time of my examination, some items appear to have been moved or misplaced; the skull of the adult was missing and there were two os coxae from different adults. However, both os coxae had masculine traits, so this appears to be a secure estimation. Given the situation, I was unable to confidently assess the age of the individual, but it is certain that he was an adult. Based on tooth eruption and the degree of formation of the crowns of the permanent dentition, the subadult was approximately between 2 and 4 years of age, which generally agrees with the estimate of Haduch (3-4 years).

The adult male was laid on an E/W axis, generally on his right side, facing north. The child appears to have been cradled by the man. It is not clear on which side the child was laid, but it seems that the head was next to the face of the man. A clay pot was placed below the feet of the man. There was also a faience bead near the ribs of the man (and presumably

the neck of the child); it is unclear to whom this belonged. There were also fragments of what appears to have been a single boar-tusk pendant (Baczyńska 1994).

Although the skull of the man was missing at the time of my analysis, four adult teeth were present, none of which showed signs of caries or LEH. Of the 13 vertebrae present, five (thoracic and lumbar) showed signs of OA, but no Schmorl's nodes. There were traces of slight OA in the shoulder, but not in any of the other major joint systems. The individual showed no signs of trauma. As for the child, the cranial vault was too poorly preserved to assess porotic hyperostosis, and no orbits were present to evaluate *cribra orbitalia*. No signs of caries or LEH were noted, and no traces of trauma were found.

Żerniki Górne: grave 75

In grave 75 was a badly preserved skeleton, which appeared to have originally been laid with the head to the east and feet to the west. The literature (Kempisty 1978) does not specify the side on which the individual was laid, but from the illustration, it appears to be the right side; therefore, they were probably facing north. This individual was certainly an adult, but not enough diagnostic fragments remained for me to make a confident age or sex estimation. However, in the literature, they are given as "…mężczyzn[a] (?) w wieku wczesny *maturus*…" (Kempisty 1978:141), or essentially, a Middle Adult male (with uncertainty as to the sex). There were also some bones present from a subadult (given in the literature as early *infans I*), but not enough for me to accurately assess the age. An awl was found near the tibiae of the adult, and some manner of pendant was located near the chest.

Very little was available for paleopathological analysis, and none was found on either skeleton. The single tooth present from the subadult displayed neither caries nor LEH. Both the right ulna and the right radius of the adult were fractured at the distal end. Furthermore, the fragments of these long bones that would be distal to the fracture itself are not present. The ulnar fracture appears to be perimortem, based on the margins and coloration of the fracture. It is more difficult to say with confidence the timing of the radial fracture, but it was certainly either perimortem or postmortem. Both fractures are complete, oblique fractures, and the ulnar fracture certainly appears to be intentional; it is neither in a location nor in a manner consistent with accidental or taphonomic breakage. The fracture appears to begin proximally on the posterior side of the ulna, and proceeds distally to the anterior side. The same is true on the radius.

DISCUSSION

In attempting to determine the significance of the north-facing burials, it is important to look for any patterns – for example, between sex and orientation, sex and grave goods, the range of ages, and the relative wealth of the graves as indexed by grave goods. Of the nine north-facing burials discussed above, it would seem that a wide range of ages is pre-

sent, from very young children to Middle Adult and possibly Old Adult. Furthermore, grave endowments range from no grave goods to quite richly adorned individuals. This latter point makes one possible explanation for these fairly "atypical" orientations far less likely: that is, the possibility that social pariahs were buried in such a manner. The individual in grave 37 at Szarbia, for example, could hardly be considered *persona non grata*, given the richness and variety of deposited grave goods. Neither are these individuals buried away from others or outside the main cemeteries. Another explanation that could be explored is that these individuals may be non-locals. Although this cannot be ruled out with the currently available evidence, the fact that – as discussed above – north-facing burials are not common practice in any of the contemporaneous archaeological cultures of Central Europe certainly precludes the notion of burying non-locals in the manner of their native traditions.

Looking at some of the patterns that do exist among these north-facing burials may shed some light on their potential significance. Among the nine individuals buried facing north, two are aligned W/E and seven are aligned E/W. Of those aligned W/E, one is a subadult and one is a female. As for those aligned E/W, one is a subadult, one is a male, one is, *provisionally*, a Probable Female (Szarbia, grave 26), and sex for the remaining four adults could not be confidently estimated. Furthermore, of the nine burials in question, three are confirmed double burials (Szarbia 26, Szarbia Zwierzyniecka 23/IX, Żerniki Górne 75), one was indicated to have contained some bones of a second, subadult individual by Haduch (1997; Szarbia Zwierzyniecka 3/III), and one may have been prepped for a double burial (Szarbia 35a). Interestingly, in all three of the confirmed double burials, plus the one possible double burial (Szarbia Zwierzyniecka 3/III), the north-facing individual was laid in the E/W – R orientation. Of those, two were given clearly "masculine" grave goods, and one was given an awl, which is found more frequently in W/E graves, although not to a statistically significant degree. The one individual of these that was not given "masculine" grave goods is the one provisionally estimated to be a Probable Female (though, it should be noted that the individual is rather young). It is also important to consider that in all of the double burials that contain a north-facing individual, that individual is an adult, and the other individual is a subadult.

None of this data can point definitively to a conclusion as to the significance of north-facing burials, but some very interesting possibilities are raised. Firstly, taking into account the above, plus looking at the south-facing burials previously discussed, one notices that – at least at these three sites – we have one (and possibly two) male(s) buried in the prototypically "feminine" orientation (E/W – L; Szarbia Zwierzyniecka 5/V, and maybe 19/XI), but we have no females buried in the prototypically "masculine" orientation. The south-facing female that was discussed is buried E/W – L, but was given an arrowhead. The rest of the females discussed are north-facing: one is aligned W/E and was given some "masculine" grave goods, and two other *potentially* female individuals are buried E/W (though it should be considered that they may, in fact, be males).

Of course, this is purely speculative, but taken together, this data *could* suggest that males could live socially as females under certain circumstances, in a more complete way than females could live socially as males. Perhaps females who took on "masculine" roles in life were buried on their left sides so as to acknowledge their biological sex, but aligned W/E to signify their social functions. As for males, in addition to the possibility of living completely as gendered females, they may have been able to "transition" later in life – perhaps after their prime reproductive years or their martial usefulness – for example, in taking on the role of a caretaker. In fact, Jan Turek (2017) elaborates on the case of an elderly man from a Corded Ware cemetery in Bohemia who was buried in the manner usually reserved for females, arguing that "…some aged men may have decided to 'retire' as women for symbolic and practical reasons" (Turek 2017, 353).

It is intriguing that, four of the six E/W aligned north-facing adult burials are double burials that include a subadult. In one of those (Szarbia 26), it seems likely that the two individuals could be siblings, since they are so young and so close in age (10-12 and 16-22). Perhaps the north-facing, older individual was a caretaker for their sibling. More puzzling are the two north-facing subadult burials. If the above speculation that females – regardless of age – could not *fully* live as social males is correct, the W/E aligned subadult burial (Szarbia 35a) may not be so anomalous, were the child shown to be female. The one subadult (8-12 years old) north-facing burial in an E/W alignment (Szarbia Zwierzyniecka 1/III) is more of a conundrum. However, the fact that many of the bones in this burial were secondarily displaced should also be considered.

CONCLUSION

Given the plethora of historical and ethnographic data on gender variants in nearly all parts of the world, such phenomena should not be overlooked in prehistoric archaeology. The social nature of gender certainly makes it more difficult to "excavate" traces of it prior to the written record. However, those researching the Final Neolithic and Early Bronze Age in Central Europe are fortunate that burial orientations and grave goods are often so clearly imbued with significance relating to gender. This presents the opportunity for archaeologists, anthropologists, and bioarchaeologists to work together to try to piece together some of these clues about how people lived and died, in order to provide solid evidence of gender constructs in the past, and thus avoid simply ignoring the topic altogether, or – on the other hand – merely offering pure "postmodern" speculation. Of course, we must always keep in mind that our present-day, culturally specific terms and constructs relating to gender and gender variants may not – and likely *did not* – apply identically in the distant past. Nonetheless, biological, behavioral, and cultural variation have always and will always exist in human societies, so we must resist foisting an *a priori* binary system of gender on prehistoric societies.

Much progress can be made in understanding gender in prehistoric societies by archaeologists, anthropologists, and bioarchaeologists. In the particular cases discussed in this paper, modern advances in ancient DNA technology can help to elucidate some of these questions. For example, we can look for evidence of the SRY gene to ascertain biological sex (though, admittedly, any intersex conditions would be more difficult to find). Furthermore, for the double burials, we may be able to determine, or at least narrow down, the type of familial relationship the individuals had, if any. Either way, this is a perfect time in the history of archaeology and bioarchaeology to begin to try to investigate some of these fascinating aspects of prehistoric societies.

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