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"Seek and you Shall Find." How the Analysis of Gendered Patterns in Archaeology can Create False Binaries: a Case Study from Durankulak

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Abstract The gender structures of the communities of the Late Neolithic and Copper Age in South East Europe have been firmly placed in a binary system by past archaeological analysis. The analysis of cemetery remains has indicated that binaries are expressed through differences in body position and the types of artefacts placed in the grave. However, re-evaluation of evidence from Durankulak cemetery on the Bulgarian Black Sea coast demonstrates that such interpretations may result from the imposition of a modern Western understanding of gender as binary based on sex; these assumptions can lead to the exclusion of data which points to more complex and varied gender relationships. This paper briefly discusses the problems in starting archaeological analyses from an assumed binary in both sex and gender. It is argued that any approach that starts with this binary is likely to be misleading, and that large-scale data sets, such as cemeteries, should be investigated using multivariate statistical techniques to uncover a variety of horizontal and vertical social categories and roles, of which gender may be a part. It demonstrates that in the case of Durankulak, while there are gender differences, there was a great deal of more complexity than a simple male/female division. Some artefacts are exclusively associated with male burials, while female graves have less variety in their assemblages.

Keywords Durankulak · South-East Europe · Late Neolithic · Gender · Sex · Binaries · Grave goods · Correspondence analysis

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Introduction

When analysing human osteological material, one of the key aspects studied is the sex of the skeleton. The osteologist, based on various anatomical features, will attempt to define each individual as either male or female. Right from the initial assessment, the skeleton is being fitted into a binary (male/female) system, before any interpretation of the material is even started. Sexing of skeletons has a varying degree of certainty, and some skeletons will defy categorisation, either due to poor preservation or being intersex (Fausto-Sterling 1993). The osteological assessment of the skeleton generally forms the basis of any subsequent analysis of burials, particularly in the case of cemeteries, where comparisons can be made between the burials regarding different treatment of the deceased based on various physical factors (such as sex, age, or physical deformity).

The archaeological analysis of sex within past societies starts, therefore, with a binary. It is no wonder then that interpretations of gender are also dominated by this dichotomy. Associations between sex and ways of treating the body, such as burial position or types of grave goods, are often interpreted as gender differences, where gender and sex are conflated. In fact, sex is biological, while gender is a social construct, formed through the enactment of specific roles, the use of or association with certain material culture, and interaction with other individuals (Strathern 1988; Conkey and Spector 1984; Sørenson 1991; Wylie 1991). An understanding of gender as based on sex ignores non-Western concepts of gender in which there may be more than two genders, where individuals may transcend gender categories, or where gender can be fluid and changing.

Below I present an example of how preconceptions regarding the binary nature of gender can impact on archaeological analysis and result in the exclusion of finds which do not conform. I then go on to argue for an engendered approach to archaeology, which moves beyond the study of gender to understand past lived experiences, of which gender identity would be just one facet.

Grave Goods and (Gender) Identity

There has been an interest in the relationship between types of grave good and the sex of the deceased in south-east European prehistory since at least the middle of the last century (Bognár-Kutzián 1963). Since Bognár-Kutzián's discussion of the Tiszapolgár-Basatanya cemetery burials in Hungary, numerous studies have surfaced which focus on this link (e.g., Sofaer Derevenski 1997, 2000; Rega 1997; Chapman 1997, 2000; Siklösi 2007; Stratton and Borić 2012). There is an obvious reason for this; the ability to sex human remains means that it is, superficially, the most accessible differential in a burial population. While, especially for prehistorians, issues such as social rank, economic roles, or clan membership (to name a few) can be elusive; the ability to scientifically sex each individual leads to a confidence that these differences are real.

Cemeteries as distinct, formal areas to bury the dead outside of settlements first appeared in south-east Europe in the Late Neolithic, around 5000 cal BC (Stratton et al. in prep.). In the preceding Early and Middle Neolithic periods (c. 6500–5000 cal BC), burial practice in the region is known only from burials on settlements, placed under house floors and in refuse pits (Boyadžiev 2009; Chapman 1983; Lichter 2001; Schuster et al. 2008). The very low number of these burials (it is rare for the number

of burials on a single site to reach double digits) means that the majority of people must have been disposed of elsewhere.

Along with the change to burial in cemeteries in the Late Neolithic, there was also an increase in the number of grave goods that accompanied the burials. While in the Early and Middle Neolithic, there were burials that occasionally contained one or two artefacts, in Late Neolithic cemeteries between half to all burials contained some grave goods, while some graves contained hundreds of individual items (Lichter 2001).

This increase in grave goods provides a brilliant resource to help understand why certain items were placed in a person's grave. Although burials are not simply a reflection of lived experience, and therefore do not show the day-to-day reality of gendered lives, the choice of items included in the grave is still informative about the society of the deceased. The items selected to be buried with the deceased, and the way they were buried was chosen by the living. The reasoning behind these choices were themselves culturally constituted and may be based on or influenced by understandings of death or other ideologies, social relationships, and political factors.

The reason that burials cannot be seen as representative of lived identities is that the deceased are in a transformative stage; they are no longer a part of the living (Ekengren, 2013). Burial is a part of mortuary ritual, in which the status of the person moves from living to dead via a three-stage transformation process (van Gennep 1960 [1909]). We cannot, therefore, view the grave as a direct representation of the living, as the burial is a part of the transformation of death, in which a new identity is created (Ekengren, 2013). Instead, as Fowler and Tarlow (2013: 514) argue "we can consider the mortuary sphere as a good example of a context in which power relations and social identities were being negotiated."

How then can gendered identities be approached through the treatment of the body? Burials are "explicitly choreographed and staged activities" (Sofaer and Sørenson 2013, 528) in which the messages being given are intentional. These messages can reinforce the social norms or challenge them. Gender would have been one of many social identities on which this dialogue is focused on in the mortuary ritual (others could be related to inequality and other forms of social difference). Burials therefore were a part of the formation and reproduction of gender structures (Sofaer and Sørenson 2013). They can be seen as constitutive, rather than reflections, of gendered identities.

What we see when we find differences in burial practice between males and females is that there was an interest among the living in these differences and in renegotiating them in the mortuary sphere. The identities we see may be the idealised rather than the lived gender identities of these communities (Fowler and Tarlow, 2013). Even in cases where cemeteries seem to show a clear divide between the sexes, this does not necessarily mean it was the same in lived experience; "we should not assume for cultures that make heavy symbolic use of the antithesis between male and female that it literally divides men and women into social classes," (Strathern 1991, 169).

The Cemetery of Durankulak

The cemetery of Durankulak is located on the Bulgarian Black Sea coast (Fig. 1). It was discovered in 1974 after the identification of a Varna culture tell-settlement on the Big Island prompted exploratory trial trenching around the lagoon (Fig. 2). The cemetery

Fig. 1 The location of Durankulak and other Lower Danube sites mentioned in the text

was excavated between 1974 and 1997 by Henrieta Todorova, and is the largest extramural cemetery so far discovered from the period, with over 1200 burials uncovered (Todorova 2002a). Fourteen AMS dates have been made on human bone from the site. There is a large variance on the start date, but it is proposed that the use of the
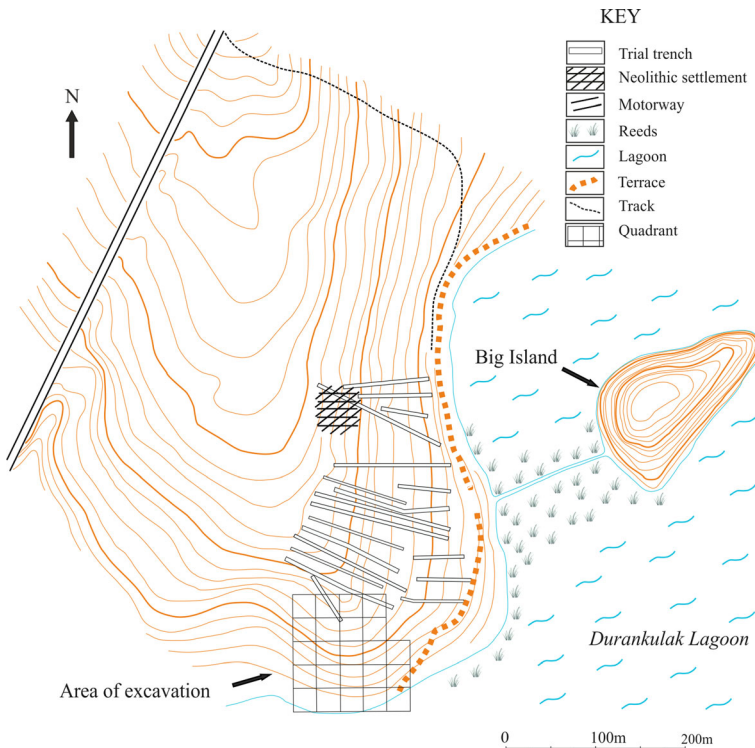

Fig. 2 Location of the Durankulak cemetery excavation area at Durankulak lagoon (after Todorova 2002a)

cemetery started before 5000 cal BC and ended c. 4450 cal BC (Honch et al. 2013). This places it within the wider Bulgarian Late Neolithic to the start of the Late Copper Age. In the regional cultural historical chronology, the burials are attributed to two cultural phases, the Hamangia culture (spanning the Late Neolithic to Middle Copper Age) and the Varna culture (Late Copper Age).

The conditions for bone preservation at Durankulak cemetery were poor due to problems with waterlogging. When it came to osteological analysis of the skeletal remains, sexing of the burials was divided into confident and uncertainly sexed individuals (Yordanov and Dimitrova 2002).

An initial investigation (see Stratton and Borić 2012 for the full study) into the relationship between sex and the distribution of types of grave good used only the confidently sexed and aged individuals. The reasoning was that any patterns relating to being biologically male or female would not be obscured by problems in the accuracy of the sexing.

Univariate analysis highlighted a number of artefact associated with sex. Females were buried with more items of jewellery, while polishing stones, relating to some kind of processing activity, were found exclusively with them. For male burials, it was axes, of antler, stone and, in the ECA, copper that were associated with them (Fig. 3).

There was also a particularly strong agreement between the burial position used and the deceased's sex; males were laid extended on their backs, while females were crouched (flexed) on either their left or right sides (Stratton and Borić 2012). This pattern was present throughout the entire span of the cemetery's use.

It seemed that for the communities who buried their dead at Durankulak, sex had a very real impact on the way an individual was buried. A binary gender divide was revealed in the cemetery. The artefacts included in the graves spoke of different roles for men and women. Judging from the use of differing burial positions, this was a divide that permeated society. Figures 4 and 5 are examples of what could be seen as idealised male and female burials based on this evidence (Stratton and Borić 2012).
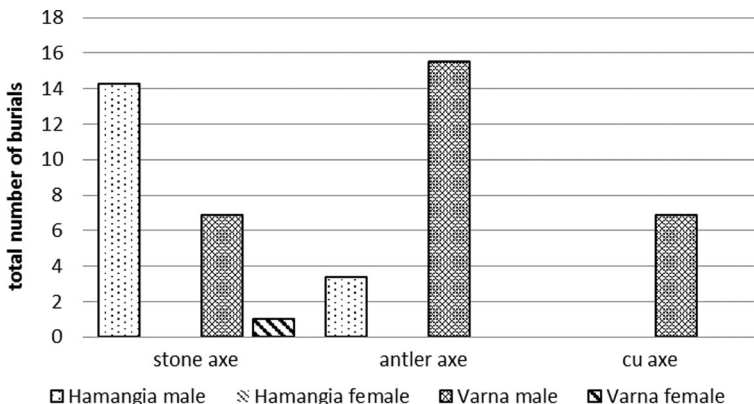

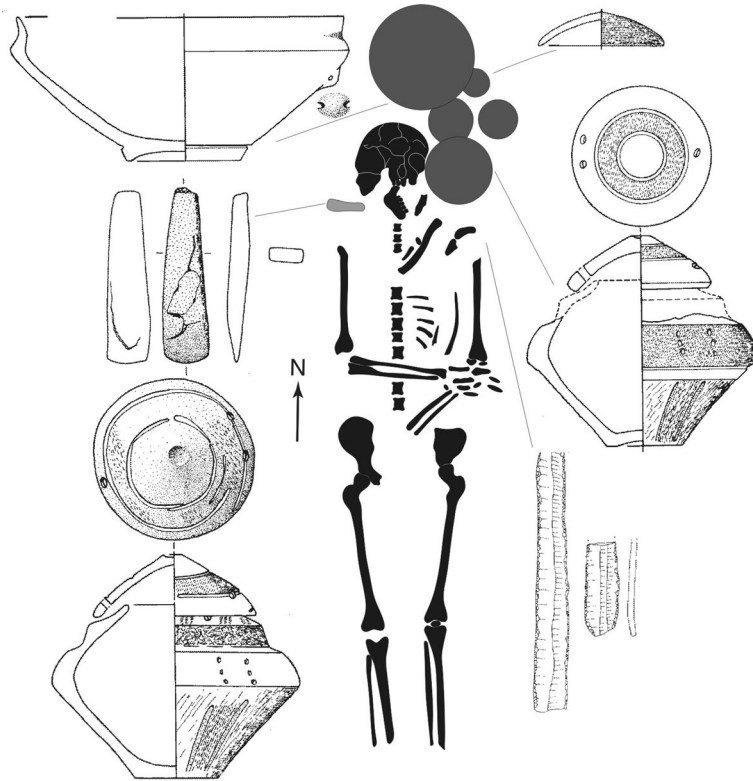Fig. 3 The deposition of axes in male and female graves, by a total number of burials per phase

Fig. 4 Burial 404, an example of an idealised male burial, supine extended with an axe at the right shoulder

Problems in the Interpretation of Durankulak Burials

The non-confidently sexed burials, which make up about 25 % of the total burials, were excluded from the initial analysis. Following the identification of sex-based artefact distribution in the confidently sexed burials, analysis was expanded to include these. It was immediately apparent that these burials were not conforming to the same patterns; in numerous cases these individuals were contradicting the previous sex-based patterning.

This contradiction is perhaps best illustrated through burial position (Fig. 6). Almost 100 % of the confidently sexed males were buried in an extended position, while 80 % of the possible males were in a crouched position. The possible males consist of only 15 individuals, meaning that these burials could probably be considered as a reasonable margin of error for osteological sexing. More strikingly, however, 95 % of the possible females, of which there were 88 skeletons, were buried in a supine extended position, which had appeared to be the male position. With the confidently sexed females numbering 93, this could not be explained as being within the osteological sexing error margin.

The Durankulak cemetery publication (Todorova 2002b) included two columns for the sex of the individual: the sex based on the osteological assessment and the sex based on the material culture. Comparison between the agreement of what was
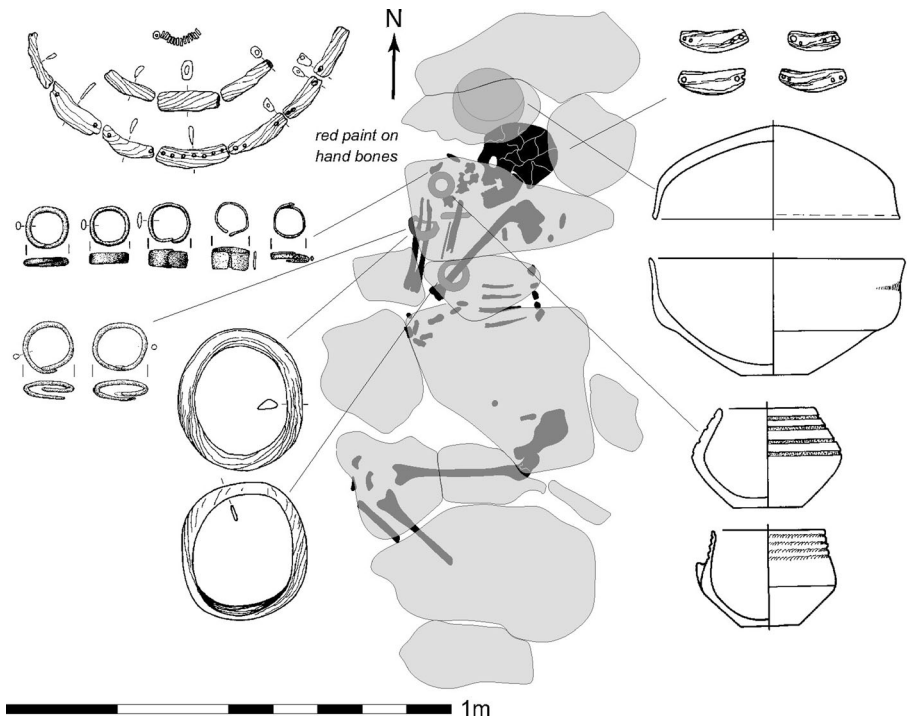
Fig. 5 Burial 245, an example of an idealised female burial, crouched and with a variety of jewellery including finger rings

expected of their sex and the material culture and position they were buried in is unmistakable. For the confidently sexed individuals, both male and female, the agreement between the osteological sexing and the material culture is almost 100 %. For those who were categorised as being unconfidently sexed by the anthropologists, the agreement is only 7–8 %. Could it really be coincidence that those burials that disagreed with the excavators' scheme of gendered burial position happened to be those that were osteologically less clearly sexable?

The striking differences between burial positions for confidently sexed versus unconfidently sexed burials force us towards the conclusion that the position a body was buried in and what it was buried with had an influence on whether the osteological
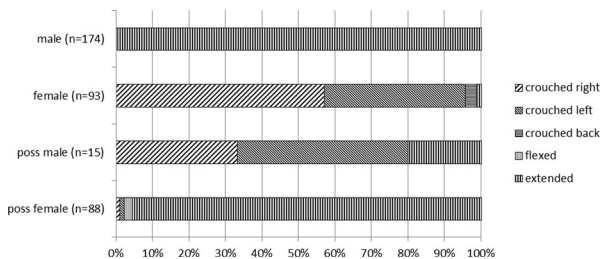

Fig. 6 Burial positions by anthropological sex, including the less confidently assigned individuals

sexing was considered confident or not. The expectation that there should be a binary sex-based gender structure thereby became self-fulfilling; a possible female skeleton in an extended burial position could not have been a female. A possible female skeleton in a crouched position was a female. Concerns over the reliability of the Durankulak sexing have also been raised by Kogălniceanu and Haită (2015) following the analysis of the gendered association of stone tools.

To what extent any of the sexing of the Durankulak burials may be relied on is unclear, and a future priority must be having the human remains re-analysed. What is clear is that the proposed idealisation of gender roles in the Durankulak community based on the original dataset is no longer applicable.

The Binary Bind: Sex and Gender

There are two main problems that are highlighted by the Durankulak study, both of which are related to the osteological categorisation of sex. Firstly, a male/female sex-based typology fails to include those individuals who cannot be sexed, or who biologically do not fit into one of those two groups. Secondly, by using male/female categories as the starting point for gender analysis, a binary is virtually being pre-determined. The possibility of exceptions from the norm is ignored. The result is that individuals who do not fit into the expected scheme are excluded. Each of these problems requires further consideration.

The first problem assumes that humans can be physically sexed into one of two categories. The existence of intersex individuals is perceived as such an anomaly that it is ignored. However, up to 2 % of the population may be intersex (a category which itself masks a variety of diversity), which can be caused by a variety of chromosomal and hormonal conditions (Blackless et al. 2000). While rare, two out of every hundred births cannot just be brushed aside as irrelevant. How past societies treated these individuals would differ based on how they were understood; not all would have seen them as an error and forced them into either the male or female category, as what is done in modern Western society (Meskell 2001). The intersex may have been seen as special, as a third sex e.g., hijdra of India (Lesick 1997), or part of a fluid understanding of sex, such as being based on bodily substances rather than genitalia, as in the Hua of Papua New Guinea (Meigs and Reeves Sanday, 1990).

The categories used for the sexing of the Durankulak burials were male, female, possible male, possible female, and indeterminate. There are a number of reasons that a skeleton may be 'un-sexable'. The sexing of a skeleton is based on a number of physical factors (the shape of the pelvis, brow ridges, mandible, size and robusticity, etc.). In the case of poor preservation, as at Durankulak, these traits may not be recognisable or clear enough to allow categorisation. Even without preservation problems, the process is not as clear cut as physical anthropologists, with their emphasis on positivism and scientism, would like to portray. While some male individuals will display strong male characteristics and some females will appear clearly female, human sexual dimorphism also contains ambiguity. Some males are more gracile; some females may be more robust. There is differentiation in the way that sex is displayed on the skeleton. As Geller (2005, 598) argues, our expectation of binary sex categories should be replaced with an understanding of sex as "a continuum of sexual difference."

The second, but to some extent interdependent problem with the Durankulak analysis, is the assumption that gender is based on sex, that societal roles are inherent and binary, determined by biological maleness or femaleness. There is a wealth of scholarship, inspired by feminist and queer theory, which shows that gender is a social construction (e.g., Conkey and Spector 1984, Strathern 1988, Butler 1993, Joyce 2008). The way of being female today in Britain is different to being female in Britain 100 years ago, or being female in Saudi Arabia. As gender is a cultural construct, it is constantly changing and fluid. Indeed, in some societies gender is a process rather than a category (Strathern 1988). Young children and the elderly may be un-gendered or weakly gendered, while during sexual maturity gendering becomes stronger. There are plenty of anthropological examples of societies in which children are not considered to be gendered from birth but instead become gendered through actions, by performing what are considered male or female tasks (Astuti 1998) or by taking in or avoiding male and female substances (Meigs and Reeves Sanday, 1990).

Gender is learned and performed within a cultural context, expressed through material culture, and enacted through gendered practice. It is not necessarily static through an individual's life time, based on sex, or the most important aspect of a person's identity. It is certainly not always binary. There are plenty of examples of gender categories beyond male and female within anthropology and archaeology (Joyce 2008). For example, across many pre-contact American societies, there is evidence for what are known as two-spirits, individuals who act, dress, and interact differently to their sex (Hollimon 1997; Nanda 2000). This may be due to an individual's status, religious role, occupation, or sexuality. Looper (2002) calls such individuals in Maya society men-women and women-men, and argues that they may have gained such status as part of a religious elite. Arnold (1991) has similarly argued that high rank allowed individuals, specifically royal women, to cross gender boundaries in Iron Age France.

It is clear then, that in some societies, normative alternatives existed with impunity (in contrast to our two-sex-with-deviants model); it was possible to have both male and female aspects at different times (as is the case in Inuit society [Crass 2001]). Despite an engendered archaeology being called for 20 years ago (Dobres 1995a), many gender studies still attempt to assign gender roles or artefacts, rather than viewing gender identity as more complex and relational (e.g., Turek 2011). Those burials (and it is usually burials in these studies) that do not fit into the expected structure are excluded or seen as anomalies, rather than seen as a part of a diverse society with varied roles. Archaeologists must attempt to create a more nuanced approach to the understanding of past gender identities. Gender should be seen as just one aspect of an individual's identity, and not necessarily the most important. By broadening the investigation into identity beyond gender, the binary trap may be avoided.

A Different Approach—beyond the Binary

It is now obvious that there was not a strict binary gender system based on sex within the Durankulak community. Instead of a one form of burial for males and another for females, the picture is more complex. The answer to challenging the 'binary bind' may

be to assess identities more broadly. What is going on beyond gender? What were the roles and activities that individuals, male or female, experienced?

In order to analyse these complexities, a different type of statistical approach is needed. The initial study (Stratton and Borić 2012) used only univariate statistical analysis. This does not allow enough scope for the multiple factors which may have been involved in the construction of an individual's identity. A possible alternative approach is to use multivariate statistical techniques. While with univariate analysis, the question is approached as 'is there a relationship between a certain object and sex?'; multivariate analysis can be used to describe connectedness amongst artefact types. The patterns revealed through this can then be compared with other factors, such as sex, to explore potential social identities. In this way, it may be possible to identify more complex or varied individual or social identities than previously. Are there certain types of objects associated with males and females? Does age change the way males and females are treated? Are there other clusters of objects that cannot be explained by sex or age that point to other roles or statuses within a society?

Correspondence analysis is a statistical technique that used the chi-squared metric to define the differences between points (for more detailed explanation of correspondence analysis see Greenacre 2007; Baxter 1994). As Baxter (1994, 114) explains, correspondence analysis "can be seen as an attempt to define new variables that explain as much as possible of the departure of a table from the form it would have if there were no association between rows and columns." The results can be displayed on a scattergram, which represents two of the three principal axes along which the data varies. The first principal axis describes the greatest amount of variation within the dataset, the second the next, and the third the least variation.

Figure 7 is an example of a correspondence analysis plot of the Durankulak burial data. It includes all confidently phased burials from both phases of the site's use and a number that are assigned typologically to both, labelled transitional. To qualify for correspondence analysis, both the objects (in this case the burials) and variables (in this
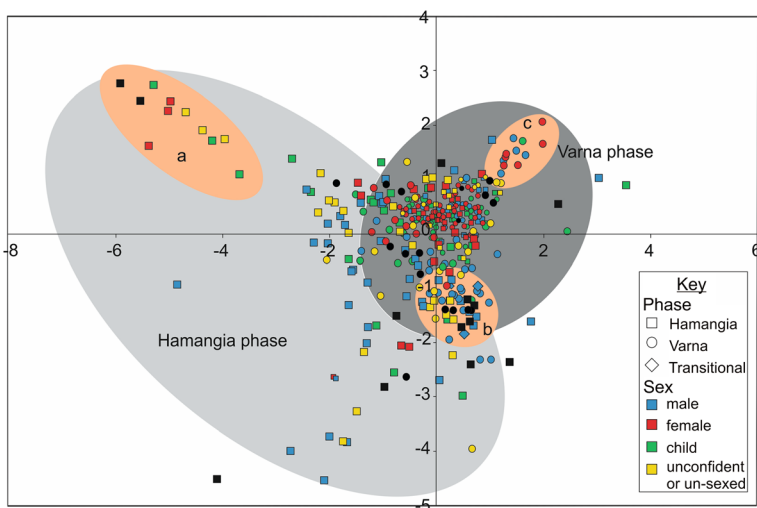

Fig. 7 Object (burials) plot on second and third principal axes of confidently phased burials at Durankulak. The *orange areas* indicate aspects of the plot discussed in the text

case the types of grave goods) must be represented twice i.e., each burial must contain more than one type of grave good, and each type of grave good must occur in more than one burial. The plot describes the relatedness of the different burials on the basis on their grave good assemblage. When burials cluster together it means there is a greater relatedness in their grave good assemblages, while where they are farther apart it indicates less overlap of artefact types. The grave goods themselves are not plotted for the sake of clarity, because it is such a large dataset.

The dataset used here includes all burials, confidently sexed, uncertainly sexed, and unsexed. It is part of the strength of the correspondence analysis that all data can be used, and the relationships between them were identified before we start to subdivide it using interpretative categories which are subjective and may be problematic. On this plot, information about cultural phasing and sex has been included by the use of symbols. This technique allows us to visually identify whether certain groups of burials cluster (i.e., in the case of this plot, males, females, or children), as clustering would be an indication, if they did, that similar burial assemblages were placed in these burials.

The Hamangia phase burials (squares) and Varna phase burials (circles) can be seen to be generally clustering in different parts of the plot, but there is quite a degree of overlap. This is probably due to the inclusion of what could be seen as burial 'staples' that were standard inclusions for most burials. At Durankulak, these are mainly types of pottery and may be related to aspects of the funerary ritual rather than the deceased person. If this dataset were to be inquired further then one potential future approach would be to remove these common artefact types from the analysis to see what effect this might have. It is expected that this would result in more distinct differences between the two phases.

If we consider the plot in terms of sex, which has been done by adding the sex information of the burials onto the plot using colours (blue for male, red for female), we can see some patterning. The majority of female burials are quite closely clustered in the same area over both cultural phases. The implication of this is that similar items were buried with biological females over both periods at Durankulak. Again, removal of some of the more common artefact types may bring out greater diversity in further correspondence analysis. This area of the plot, around the zero point on both x- and y- axes is not exclusively female; adult males and children are also found there. The artefact grouping in this area is not therefore specifically something to do with being a female and again probably represents the common artefacts buried across all of society. There is, however, a separate cluster of Hamangia female burials (a), along with three unconfidently sexed individuals; who are described as possible females, three children; and two cenotaphs (symbolic graves without human remains). These burials are associated with bone finger rings, clay idols, and *Spondylus* amulets, as well as some types of shell beads. This area of the plot seems to relate to specifically female artefacts, and the presence of children may indicate that gender identities started to be created in childhood.

Males from the Varna phase have a similar distribution to the females, but Hamangia males are much more widely distributed. This indicates that the males in the Hamangia phase were being buried with different artefacts to females, and possibly a greater diversity. This could indicate that there was a greater variety of roles available for men in the Hamangia society.

The area within circle (b) contains a dense clustering of adult male burials, as well as cenotaphs containing what the excavators considered male grave goods (the cenotaphs, along with the inhumations, were sexed on the basis of grave goods). These particular graves are clustering together due to an association with antler axes, chalcedony beads, and footed and pedestalled bowls. While it may be tempting to suggest that chalcedony was an exclusively male material, only four burials contain beads made from it and it may equally be the case that it was simply an unusual or infrequently used material or expression of some other aspect of identity. Footed and pedestalled bowls, which are variations of a shallow bowled pottery type placed on a high, pedestal base, are much more common. Footed bowls occur in 44 burials and pedestalled occur in 59 burials in this dataset. These specific pottery types do therefore apparently indicate a specifically male activity for their use or a ritual reserved exclusively for certain males. Who qualified for the inclusion of this artefact type may be related to social or ritual status.

Within cluster (c) is a group of Varna phase burials associated with copper tools: copper needles, axes, and awls. This is unsurprising; an increased use of copper for a greater variety of artefacts defines the Copper Age. The separation of these Varna burials, which include both males and females, from the majority suggests that despite becoming more common, copper was only used as a grave good for a sub-set of the community. We can speculate whether this is related to status, ritual significance, craft specialisation, or control of resources, but it clearly denotes the use of copper to indicate social differentiation.

As we have seen, an individual's sex did not determine the position they were buried in, or what artefacts they were buried with at Durankulak. The correspondence analysis of grave goods shows a large amount of crossover, with most items being found in both male and female burials. There are some artefacts that are considerably more likely to be found in one or the other, but as the case of grave 1162, a female burial containing a stone axe demonstrates that this was not absolute. The implication is that there were not exclusively 'male roles' and 'female roles' within the society. While there may have been activities that a man or woman was more likely to do, women were not excluded from carrying axes and men could wear rings. This particular plot suggests that some differences between males and females were being expressed in burials during the Hamangia phase, but during the Varna phase, gender was not a significant aspect of social organisation at Durankulak.

When used in this exploratory way, correspondence analysis does not provide definitive answers. What the use of correspondence analysis gives is the ability to draw out potential associations from the dataset. In a large dataset such as this one, much more could be done in relation to other variables, such as raw materials, age ranges, or by further sub-division of the data. For example, a correspondence analysis using only types of pottery may provide a clearer picture of the relationship between biological males and pedestalled pottery. Other information, such as the burial position, could also be added. The phases of use could also be analysed separately. With such a large dataset, there are many possibilities to refine or refocus the correspondence analysis. The inclusion of age information alongside gender could be particularly informative about the creation and recreation of gender through life (see also Arnold, this volume).

Discussion

So, how can we better understand gender in prehistory? The key is to be open to a greater degree of complexity in people's identities, to try to understand more about lived experiences. We need to look for more identities and think about what grave goods might be expressing beyond 'maleness' or 'femaleness'. This binary compartmentalisation, an either/or approach, masks other differences in people's lives (Geller 2009).

We also need to accept that the idea that there were strict gender roles in past societies is unlikely to be the reality. This is not just in reference to individuals who transcend expected gender roles or third genders. As Nelson (1997, 86) argues, "we need to get away from the idea that a gendered division of labour was absolute." It is not the case that women only performed one kind of role which men would never do and vice versa. The axe may have been thought of as a masculine tool at Durankulak, but that does not mean women never touched them. Instead, it is more probable that roles were shared, taken up by others as needed, and varied between households and individuals. There is anthropological evidence for sharing of roles; for example in Aboriginal Australia, women are known to have hunted and made stone tools, while men participated in making wooden bowls (Bird 1993). Dobres, in her work on tool production, argues that "a general flexibility of social conduct situated to the specific settings in which people found themselves" (Dobres 1995b, 41).

Furthermore, we should not view gender as a fixed category. Gender is not static. Instead, it is being constantly renegotiated throughout an individual's lifetime, as well as in death. This flexibility and lack of exclusivity may make the work of those looking for gender roles in the past more complicated, but it also broadens the potential to understand past lives. What we see in the material record, in the artefacts people were buried with, are not objects that were somehow socially selected for them as being appropriate for a male or female to use. Rather, these objects were used by individuals in the performance of their daily lives, and it was in this way that they played a role in the construction of identity. Objects did not confine people to a category but helped to construct identity through lived experience.

Conclusion

What have we learned from the case study of Durankulak? Firstly, our own assumptions can be highly dangerous, as we project cultural values that we consider to be inherent onto past societies. Secondly, that gender identity is not a straightforward dichotomy. There may have been activities that were considered male or female in Durankulak society, but these were probably fluid rather than exclusive. Some individuals may, for whatever reason, have transcended specific gender roles.

The physical representation of sex is a spectrum, ranging from extremely masculine features to extremely feminine. There will always be an element of uncertainty in osteological sexing, with some males presenting female characteristics and vice versa. Researchers can accept that there are unidentifiable skeletons and be prepared to put those that are marginal in a separate group. However, these individuals should not then be excluded from further analyses. To do so reinforces the binary categorisation and

ignores a wealth of potential data. Ideally, analyses should not start with these three groups at all. Rather, as it is possible with correspondence analysis, the relationships within burial assemblages should be analysed before feeding in information on sex and age.

Most importantly, we see that a reliance on the vocabulary of the two sex/two gender model virtually guarantees its reproduction. This stops us from understanding real differences in the lived identities of people in other societies. If gender is a cultural construct and not a binary system, then using sex as a starting point is problematic. As the Durankulak example demonstrates, it raises the possibility of creating false patterns just because they are being looked for. Of course, what happened with the Durankulak burials is an extreme, and hopefully rare example, and could partially be avoided by ensuring that osteological analysis is based purely on the physical remains.

The title of this paper *Seek and you shall find* has two meanings. Firstly, it is a warning; it refers to the inevitability of finding a binary gender structure if that is what you are expecting to find. Secondly, however, it is an encouragement that by using increasingly nuanced approaches to past gender identities archaeologists can tease these out of their datasets. Correspondence analysis, with its emphasis on the relationship between variables, offers one way to get beyond binaries. The plot provided as an example in this paper (Fig. 7) is just a starting point. The intention was to illustrate the potential of correspondence analysis for use on large cemetery datasets. Hopefully, the further sub-division of the Durankulak material will allow a more detailed exploration of these relationships and bring new patterns and associations to the fore. People in past societies would have been defined by many aspects of their lived experiences, by family, community, social and ritual status, roles and abilities, age, and of course gender. Only by taking our analyses beyond single issues, we can get out from this binary bind.

References

Arnold, B. (1991). The disposed princess of Vix: the need for an engendered European prehistory. In D. Walde & N. Willows (Eds.), *The archaeology of gender: proceedings of the 22nd Annual Chacmool Conference* (pp. 366–374). Calgary: University of Calgary.

Astuti, R. (1998). 'It's a boy', 'it's a girl!': reflections on sex and gender in Madagascar and beyond. In M. Lambek & A. Strathern (Eds.), *Bodies and persons. Comparative perspectives from Africa and Melanesia* (pp. 29–52). Cambridge: Cambridge University Press.

Baxter, M. J. (1994). *Exploratory mulitivariate analysis in archaeology*. Edinburgh: Edinburgh University Press.

Bird, C. 1993. Woman the toolmaker: evidence for women's use and manufacture of flaked stone tools in Australia and New Guinea. In: H. du Cros and L. Smith (eds), *Women in archaeology: A feminist critique,* 22–30.

Blackless, M., Charuvastra, A., Derryck, A., Fausto-Sterling, A., Lauzanne, K., & Lee, E. (2000). How sexually dimorphic are we? Review and synthesis. *American Journal of Human Biology, 12*, 151–166.

Bognár-Kutzián, I. (1963). *The Copper Age cemetery of Tiszapolgár-Basatanya*. Budapest: Akadémiai Kiadó.

Boyadžiev, Y. (2009). Early Neolithic burials in Bulgaria. *Archaeologia Bulgarica XIII, 1*(31).

Butler, J. (1993). *Bodies that matter. On the discursive limits of 'sex'*. New York: Routledge.

Chapman, J. (2000). *Tensions at funerals: micro-tradition analysis in later Hungarian prehistory*. Budapest: Archaeolingua.

Chapman, J. (1997). Changing gender relations in the later prehistory of Eastern Hungary. In J. Moore & E. Scott (Eds.), *Invisible people and processes: writing gender and childhood into European archaeology* (pp. 132–149). Leicester: Leicester University Press.

Chapman, J. (1983). Meaning and illusion in the study of burial in Balkan prehistory. In A. G. Poulter (Ed.), *Ancient Bulgaria: papers presented to the International Symposium on the Ancient History and Archaeology of Bulgaria, University of Nottingham, 1981* (pp. 1–41). Nottingham: University of Nottingham.

Conkey, M., & Spector, J. (1984). Archaeology and the study of gender. *Archaeological Advances in Method and Theory, 7*, 1–38.

Crass, B. A. (2001). Gender and mortuary analysis: what can grave goods really tell us? In B. Arnold & N. L. Wicker (Eds.), *Gender and the archaeology of death* (pp. 105–118). Walnut Creek, CA: AltaMira Press.

Derevenski, J. S. (1997). Age and gender at the site of Tiszapolgár-Basatanya, Hungary. *Antiquity, 71*, 875–889.

Derevenski, J. S. (2000). Rings of life: the role of metalwork in mediating the gendered life course. *World Archaeology, 31*, 389–406.

Dobres, M.-A. (1995a). Beyond gender attribution: some methodological issues for engendering the past. In J. Balme & W. Beck (Eds.), *Gendered archaeology: the second Australian women in archaeology conference* (pp. 51–66). Canberra: ANH Publications.

Dobres, M.-A. (1995b). Gender and prehistoric technology: on the social agency of technical strategies. *World Archaeology, 27*, 25–49.

Ekengren, F. (2013). Contextualising grave goods. In S. Tarlow & L. N. Stutz (Eds.), *The Oxford handbook of the archaeology of death and burial* (pp. 173–192). Oxford: Oxford University Press.

Fausto-Sterling, A. (1993). The five sexes: why male and female are not enough. *The Sciences*, 20–24.

Fowler, C. 2013. Identities in transformation: identities, funerary rites, and the mortuary process. In: S. Tarlow and L. N. Stutz (eds), *The Oxford handbook of the archaeology of death and burial* (pp. 511–526). Oxford: Oxford University Press.

Geller, P. L. (2005). Skeletal analysis and theoretical complications. *World Archaeology, 37*, 597–609.

Geller, P. L. (2009). Identity and difference: complicating gender in archaeology. *Annual Review of Anthropology, 38*, 65–81.

Greenacre, M. (2007). *Correspondence analysis in practice* (2nd ed.). London: Chapman and Hall/CRC.

Hollimon, S. E. (1997). The third gender in native California: two-spirit undertakers among the Chumash and their neighbors. In C. Claassen & R. Joyce (Eds.), *Women in prehistory: North America and Mesoamerica* (pp. 173–188). Philadelphia: University of Pennsylvania Press.

Honch, N. V., Higham, T., Chapman, J. C., Gaydarska, B., Todorova, H., Slavchev, V., & Dimitrova, B. (2013). West Pontic diets: a scientific framework for understanding the Durankulak and Varna I cemeteries, Bulgaria. *Interdisciplinaria Archaeologica; Natural Sciences in Archaeology, 4*, 147–162.

Joyce, R. (2008). *Ancient bodies, ancient lives*. London: Thames and Hudson.

Kogălniceanu, R., & Haită, C. (2015). Polished stone tools as grave goods in the Hamangia cemetery from Cernavodă – Columbia D. Typological and contextual analysis. In R. Kogălniceanu, M. Gligor, R.-G. Curcă and S. Stratton (Eds.), *Homines, Funera, Astra 2 Life Beyond Death in Ancient Times* (*Romanian Case Studies*) (pp. 43–66). Oxford: Archaeopress.

Lesick, K. S. (1997). Re-engendering gender. In J. Moore & E. Scott (Eds.), *Invisible people and processes: writing gender and childhood into European archaeology* (pp. 31–41). Leicester: Leicester University Press.

Lichter, C. (2001). *Untersuchungen zu den Bestattungssitten des südosteuropaischen Neolithikums und Chalkolithikums*. Mainz am Rhein: Philipp von Zabern.

Looper, M. (2002). Women-men (and men-women): classic Maya rulers and the third gender. In T. Ardren (Ed.), *Ancient Maya women* (pp. 171–202). Walnut Creek, CA: AltaMira Press.

Meigs, A. S. (1990). Multiple gender ideologies and statuses. In: P. Reeves Sanday and R. G. Goodenough (eds.), Beyond the second sex, 101–112. Philadelphia, University of Pennsylvania Press.

Meskell, L. (2001). Archaeologies of identity. In I. Hodder (Ed.), *Archaeological theory today* (pp. 187–213). Cambridge: Polity Press.

Nanda, S. (2000). *Gender diversity: cross-cultural variations*. Prospect Heights, Ill.: Wavelands Press.

Nelson, S. M. (1997). *Gender in archaeology: analysing power and prestige*. Walnut Creek: AltaMira Press.

Rega, E. (1997). Age, gender, and biological reality in the early Bronze Age cemetery at Mokrin. In J. Moore & E. Scott (Eds.), *Invisible people and processes: writing gender and childhood into European archaeology* (pp. 229–247). Leicester: Leicester University Press.

Schuster, C., Kogălniceanu, R., & Morintz, A. (2008). *The living and the dead: an analysis of the relationship between the two worlds during prehistory at the Lower Danube*. Târgoviște: Editura Cetatea de Scaun.

Siklösi, Z. (2007). Age and gender difference in Late Neolithic mortuary practice: a case study from eastern Hungary. In J. K. Kozłowski & P. Raczky (Eds.), *The Lengyel, Polgár and related cultures in the Middle/ Late Neolithic in Central Europe* (pp. 185–198). Kraków: Polish Academy of Arts and Sciences.

Sofaer, J., & Sørenson, M. L. S. (2013). Death and gender. In S. Tarlow & L. N. Stutz (Eds.), *The Oxford handbook of the archaeology of death and burial* (pp. 527–541). Oxford: Oxford University Press.

Sørenson, M. L. S. (1991). Gender construction through appearance. In D. Walde & N. D. Williams (Eds.), *The archaeology of gender: proceedings of the 22nd Annual Chacmool Conference* (pp. 121–129). Calgary: Archaeological Association of the University of Calgary.

Strathern, M. (1991). Self-interest and the social good: some implications of Hagen gender imagery. In S. Ortner & H. Whitehead (Eds.), *Sexual meanings: the cultural construction of gender and sexuality* (pp. 166–191). Cambridge: Cambridge University Press.

Strathern, M. (1988). *The gender of the gift*. Cambridge: Cambridge University Press.

Stratton, S., & Borić, D. (2012). Gendered bodies and objects in a mortuary domain: comparative analysis of Durankulak cemetery. In R. Kogălniceanu, R.-G. Curcă, M. Gligor, & S. Stratton (Eds.), *Homines, funera, astra: proceedings of the International Symposium on Funerary Anthropology. 5–8 June 2011, '1 Decembrie 1918' University (Alba Iulia, Romania)* (pp. 71–79). Oxford: Archaeopress.

Todorova, H. (2002a). *Durankulak, Band II, die prähistorischen gräberfelder von Durankulak, Teil 1*. Berlin–Sofia: Anubis.

Todorova, H. (2002b). *Durankulak, Band II, die prähistorischen gräberfelder von Durankulak, Teil 2*. Berlin–Sofia: Anubis.

Turek, J. (2011). Age and gender identities and social differentiation in the Central European Copper age. In L. Amundsen-Meyer, N. Engel, & S. Pickering (Eds.), *Identity crisis: archaeological perspectives on social identity. Proceedings of the 42nd (2010) Annual Chacmool Archaeology Conference, University of Calgary, Calgary, Alberta* (pp. 49–61). Calgary: University of Calgary.

van Gennep, A. (1960 [1909]). *The rites of passage*. Chicago: University of Chicago Press.

Wylie, A. (1991). Gender theory and the archaeological record: why is there no archaeology of gender? In J. Gero & M. Conkey (Eds.), *Engendering archaeology: women and prehistory* (pp. 31–54). Oxford: Blackwell.

Yordanov, Y., & Dimitrova, B. (2002). Results of an anthropological study of human skeletal remains of the prehistoric necropolis in the vicinity of the village of Durankulak. In H. Todorova (Ed.), *Durankulak, Band II, die prähistorischen gräberfelder von Durankulak, Teil 1* (pp. 325–348). Berlin–Sofia: Anubis.