

Reading Between the Lines: Disparate Data and Castration Studies

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5.1 INTRODUCTION

Castration¹ has been intertwined with human history throughout Afro-Eurasia for millennia. Possibly beginning with the Secondary Products Revolution (SPR) (Chalcolithic to Bronze Age, roughly 6200–4500 BCE) (Greenfield, 2010; Orton, 2014; Sherratt, 1983; Taylor, 2002) in the Fertile Crescent (Scholz, 2001; Tougher, 2002, 2008), castration spread through ancient empires, including the Assyrian, Roman, Chinese, Byzantine, Islamic, and Ottoman (Doran, 2010; El-Cheikh, 2005; Marmon, 1995; Matthews, 1994; Mitamura, 1970; Tougher, 2002, 2008, 2013), and religions, including the cult of the *Magna Mater*/Cybele, Bahuchara Mata, and various Christian sects, from ancient times, through the *castrati*² singers, to the USSR in the 1950s CE (Barbier, 1998; Engelstein, 1999; Lane, 1978; Mukherjee, 1980; Nanda, 1999; Scholz, 2001; Vermaseren, 1977), and even to the modern day with the use of chemical castration for criminals and prostate cancer patients (Aucoin and Wassersug, 2006; Brett

¹Castration is here defined as the removal of either the testicles or the testicles and the penis. This was referred to in Reusch (2013b) as partial and complete castration, respectively, however, the technical terms are actually castration and castration with penectomy. Both forms have been practiced throughout human history, as far as can be discerned, with removal of the testicles only most popular in Europe and portions of the Fertile Crescent and removal of both testicles and penis most popular in Africa, portions of the Fertile Crescent, and Asia. In animals, only the testicles are removed, to the author's knowledge.

²Historically, there have been a number of terms used to refer to castrated individuals. The two most popular terms have been *castrati* and *eunuch*. Both terms have specific cultural and historical meanings (*castrati* is used to refer specifically to the European singers employed by opera and church choirs in the Early Modern period and *eunuch* comes from a Greek term meaning “guardian of the bedchamber” and refers to castrated servants' employment in the domestic sphere of households), and have therefore been used only in those appropriate settings within this paper. All other references to castrated persons will use the term castrate.

et al., 2007). Several fields have contributed to the study of castration throughout time, including history, medicine, archaeology, paleopathology, zooarchaeology, gender studies, and sexuality studies (Beard, 2012; Davis, 2000; Dreger, 1998; Eng et al., 2010; Fausto-Sterling, 2000; Ringrose, 2003; Scholz, 2001; Tougher, 2008; Wilson and Roehrborn, 1999). Castration's development, early history, and physical and social effects are, however, not well understood, especially within the medico-anthropological literature.

Castrates form a group of historically visible, often extremely powerful, intersex individuals. Through their connection to rulers and religion, castrates were often positioned to affect the policies of many hierarchical organizations with secular and religious political control. They are often upbraided in historical documents *because* of their ability to adversely affect rulers and kingdoms (Scholz, 2001; Tougher, 2008; Tsai, 1996). They also formed a highly visible third gender category in many societies (Herdt, 1994; Ringrose, 1994), which may have affected wider societal views of sex and gender norms. Despite their great influence on human history, very little is actually known about castrates as individuals or as a group. Castrates are an artificially constructed intersex category, but naturally intersex individuals have existed throughout recorded human history (Dreger, 1998; Leick, 2003; Reis, 2005). As only one intersex skeleton has ever been identified archaeologically (Ghosh, 2015), the ability to better recognize intersex individuals would allow the history of these conditions to be traced through time, adding depth to our current clinical understanding.

This work stems from a doctoral project that was originally undertaken to determine the effects of prepubertal castration on the development of the male skeleton, which changed to a multifold, interdisciplinary examination of the effects of castration in order to more clearly delineate skeletal change and aid castrate identification. This project required a careful literature review to find casual anecdotes and throwaway references, as well as gaining access to obscure papers and the private notes of previous castration scholars. Gender, sex, sexuality, and identity literature covering both past and modern societies was consulted in order to formulate ideas of how castrates may have perceived themselves both as a group and within their wider societies. Modern medical and endocrinological literature was

consulted in order to understand the possible physical effects of castration. Given the lack of human remains available for study, it was necessary to consult zooarchaeological and veterinary studies of castration to determine which changes were common across mammalian species and therefore likely due to the castration. The project sought to bring these disparate strands of data together to create a comprehensive and coherent narrative of social and skeletal change that could be used to identify castrate skeletons within archaeological collections in the future.

5.2 ESTABLISHING THE ORIGIN, SPREAD, AND HISTORICAL PRESENCE OF CASTRATION

Castration and castrates have been woven through human historical documents for millennia. Usually associated with kings, elites, and power, human castrates appear to have thrived once hierarchical power structures became common (most likely by the 4th millennium BCE) (Taylor, 2002). They tend to fall into two major categories, castrates associated with rulers and castrates associated with religions, though some blending between the categories could exist, depending on the power structures inherent in a society (Reusch, 2013a). However, in some societies, such as the Byzantine Empire, castrates could be found in all social strata, from court officials to prostitutes (Ringrose, 2003; Tougher, 2008).

Based on available zooarchaeological information, animal castration seems to have begun around the SPR (Greenfield, 2010; Sherratt, 1983), during which castration is thought to have been developed as a method of retaining male animals past the 2-year growth period normal for meat and milk (primary products) production. The prolonged life of the castrated animals gave the benefit of secondary products such as wool and draught labor, while castration protected already well-established breeding programs. Getting secure dates for the beginning of animal castration is difficult, due to the limitations of detecting castrated animals within the archaeological record (Davis, 2000).

The first possible references to human castration come from Uruk (~4000 BCE), in the myths of the cult of the goddess Ishtar/Inanna,

especially “The Descent of Inanna”³ (Taylor, 2002). The next potential indications come from other Mesopotamian cultures such as Sumer, Ur, the Akkadian Empire, and the Assyrian Empire (~3rd Millennium–1st Millennium BCE) (Asher-Greve, 1997; Dalley, 2002; Siddall, 2007; Tadmor, 1983), in visual art and textual references to the *ša reši*, or man with two heads, which has controversially been taken to mean eunuch (Briant, 2002; Tougher, 2008). From this, it seems that either sometime between the SPR and the formation of the hierarchical, religious civilizations of Mesopotamia, or in concert with the development of animal castration during the SPR, the castration of animals was carried over into humans. This was possibly a side effect of war and slavery, or the formation of social hierarchies (Coughlan, 2012; Taylor, 2002). It is probable that the formation of the stratified, hierarchical societies made possible by agriculture led to the conceptualization of lower status people or prisoners of war as comparable to animals, making their castration a matter of population control (Taylor, 2002). Alternately, it is possible that the use of intersex individuals within daily life, temple rituals, and court functions (Leick, 2003) became normalized during this period, resulting in the production of artificially intersexed people through human castration when “natural supply” (natural-born intersex individuals) was not enough to meet demand.

Castration soon spread throughout the Fertile Crescent and surrounding areas. The Mesopotamian sources are followed by possible references in Egyptian documents (from the 19th Dynasty, c.1300 BCE) (Kadish, 1969) and descriptions in Persian and Greek documents (Llewellyn-Jones, 2002; Patterson, 1982; Tougher, 2008). Chinese oracle bones use the characters for eunuch from at least 1300 BCE (Jay, 1993; Tsai, 1996). Once the Romans brought the cult of Cybele, also known as the *Magna Mater*, to Rome in 204 BCE, castration became fairly commonplace in the Mediterranean basin (especially the eastern portion) through the spread of castrated *galli* priests and household servants (Beard, 2012; Tougher, 2013; Vermaseren, 1977). By the time the capital of the Roman Empire moved to Constantinople (CE 323), castrates were

³While these myths largely come from Protoliterate Period (2900–2750 BCE) cuneiform tablets found in the Ishtar temple complex in Uruk, it is generally agreed by scholars that these myths are older than the surviving written forms, that castrates were associated with the cult at an early period, and that the cult originated in Uruk probably in the early Uruk period (4500–3750 BCE) (Bi and Xiao, 2009; Taylor, 2002).

in charge of the emperor's household and held several positions within government (Ringrose, 2003; Scholz, 2001; Tougher, 2008). When the Ottomans conquered Constantinople in CE 1453, castrates continued to serve at court, but in slightly modified roles (Scholz, 2001; Segal, 2001). Islamic countries had utilized castrates heavily within military, political, and administrative roles from the Abbasid dynasty (CE 750–1258). They spread their use at royal courts across Afro-Eurasia from India and Central Asia to the Iberian Peninsula and North and Central Africa (Marmon, 1995; Segal, 2001; Ware, 2011), but the Turkish court was one of the largest Islamic consumers of castrates (Fig. 5.1).

Meanwhile in China, eunuchs expanded into several aspects of court life, including serving in the government by the Zhou Dynasty (1045–256 BCE) (Kutcher, 2010). After Qin unification (221 BCE), eunuchs worked as gatekeepers, servants, and messengers in the palace, slowly gaining full control of the domestic affairs of the imperial palace over millennia (Jay, 1993; Scholz, 2001). Under the influence

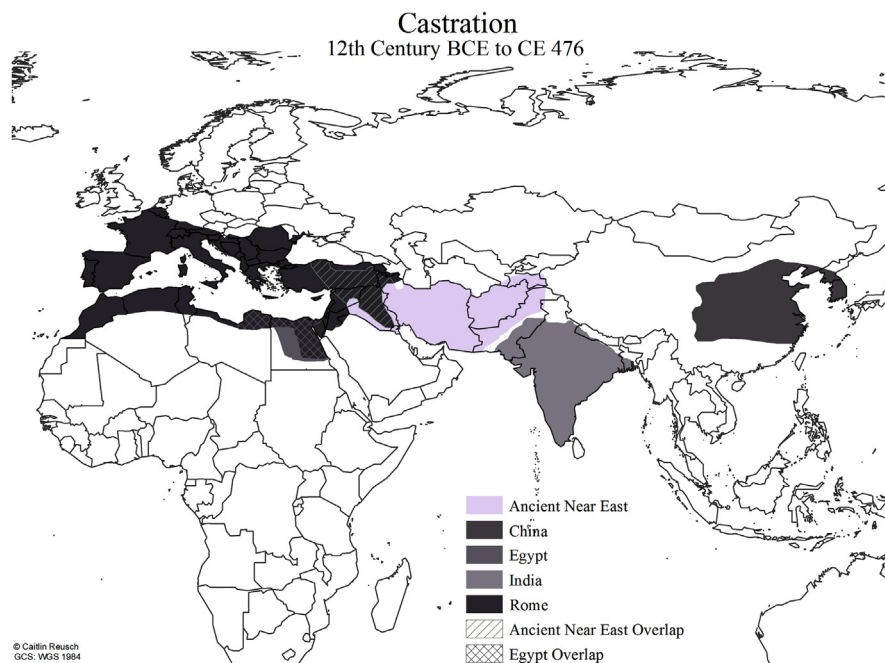


Figure 5.1 Distribution of human castration from the 12th century BCE to CE 476. Source: Reusch, C. October 1, 2015. Early Castration: 12th Century BCE to 476 CE [map], first ed. 1:69,510,943; Base world map citation: Erle, S. July 30, 2008. *TM_WORLD_BORDERS-0.1* [GIS shapefile], third ed. <<http://www.mappinghacks.com/data/>> (accessed 01.10.15).

of the Ming Dynasty (CE 1368–1644), castration spread to the royal courts of Korea and Vietnam, which also sent eunuchs as tribute to the Chinese capital during both the Ming and the Qing (CE 1644–1912) Dynasties (Jay, 1993; Mitamura, 1970).

In India, historic castration is more difficult to follow. Castration is mentioned in Vedic sacred texts (1500–1000 BCE) (Bullough, 2002), and eunuchs served in Mughal courts (CE 1526–1857) (Scholz, 2001), but the castrates for which India is most famous are the *hijras*. Devotees of Bahuchara Mata, they dress as women and sing, dance, and offer blessings at weddings and the birth of sons (Mukherjee, 1980; Nanda, 1999; Preston, 1987). They have existed from before the British conquest of India (CE 1817–18) to the modern day, though not all modern *hijras* are castrated (Preston, 1987; Scholz, 2001) (Fig. 5.2).

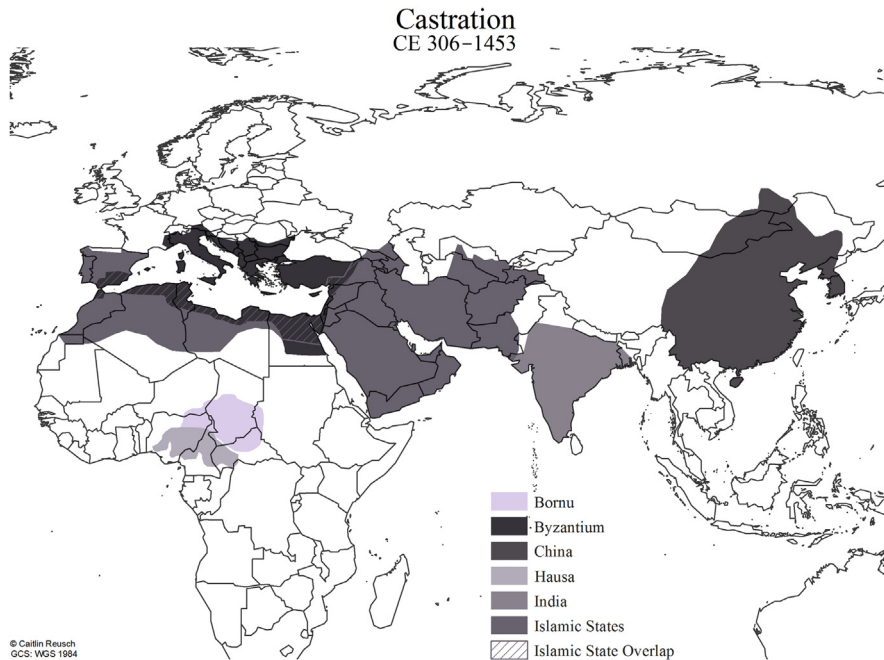


Figure 5.2 Distribution of human castration from CE 306 to 1453. Source: Reusch, C., October 1, 2015. Middle Castration: 306 to 1453 CE [map], first ed. 1:69,510,943; Base world map citation: Erle, S., July 30, 2008. *TM_WORLD_BORDERS-0.1* [GIS shapefile], third ed. <<http://www.mappinghacks.com/data/>> (accessed 01.10.15).

The castrates most familiar to Western audiences are the *castrati* singers of the Baroque and later periods in Europe (16th–20th centuries CE). There is some confusion as to when exactly the Papal chapel first admitted castrated singers (Gerbino, 2004), but in CE 1589, Pope Sixtus V issued a bull which officially included four individuals explicitly described as castrates in the choir, and in CE 1594, Pope Clement VIII allowed Italian *castrati* to join the choir (Gerbino, 2004; Jenkins, 1998; Milner, 1973). By CE 1640, *castrati* were found in church choirs across Italy, and many had become operatic stars (Jenkins, 1998; Rosselli, 1988). Although the taste for *castrati* in opera and wider church choirs faded over time, they were still employed in the papal choir until Pope Leo XIII prohibited their creation and addition to the choir in CE 1878 (Bullough, 2002). Alessandro Moreschi, the last *castrati*, died in CE 1922 (Scholz, 2001).

Christianity was involved with castration from its earliest days, as several church fathers had self-castrated as a sign of devotion and chastity (Scholz, 2001). The major motivation for *castrati* as singers was a perceived prohibition of women singing in church choirs (Barbier, 1998; Scholz, 2001). The Christian sect associated with castration that has received the most attention and concern from authorities is the Skoptsy. Springing from an offshoot of Russian Orthodox Christianity around CE 1700, this sect practiced self-castration and breast mutilation in an effort to remove “impure” signifiers of sex within humans (Engelstein, 1999; Tandler and Grosz, 1910). The Romanov (CE 1613–1917) and succeeding Bolshevik (CE 1917–22) and Soviet (CE 1922–91) governments tried to eradicate the sect, which caused many members to flee to Romania, where they set up several successful settlements (Pittard, 1934; Wilson and Roehrborn, 1999). It is thought that the sect died out in the 1950s CE (Engelstein, 1999) (Fig. 5.3).

From the study of the historical spread of castration, it is possible to determine where best to target searches for castrated remains, as well as to show archaeologists and paleopathologists where they need to be mindful of finding castrate skeletons within larger skeletal populations. This research also highlights the great number of historically important cultures that employed castrates, often in close proximity to rulers whose thinking they could influence. This often led to jealousy and competition with intact male courtiers and bureaucrats, who viewed castrates as part-males, feminine in nature, or semihuman

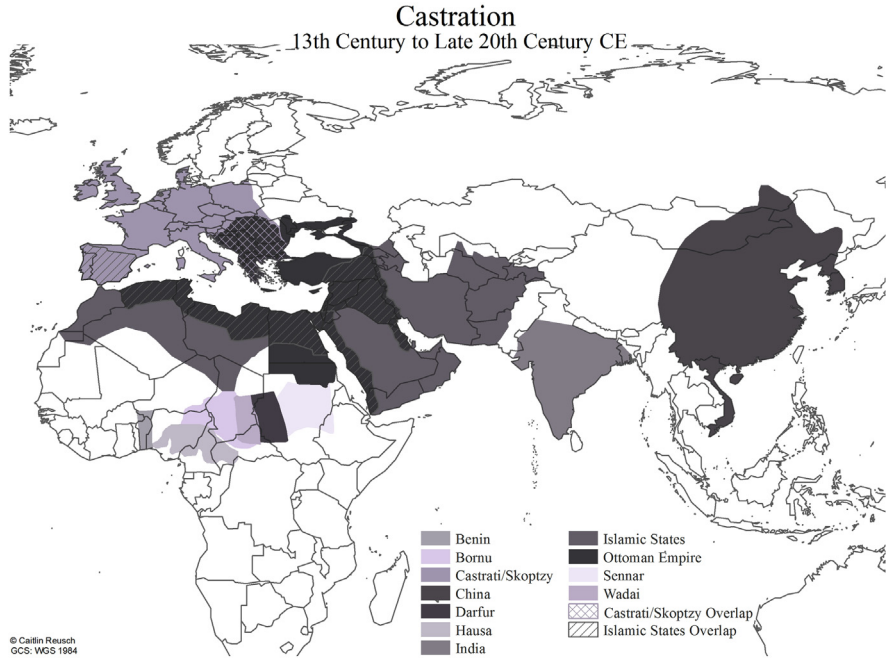


Figure 5.3 Distribution of human castration from the 13th-late 20th centuries CE. Source: Reusch, C. October 1, 2015. Late Castration: 13th Century to Late 20th Century CE [map], first ed. 1:69,510,943; Base world map citation: Erle, S. July 30, 2008. *TM_WORLD_BORDERS-0.1* [GIS shapefile], third ed. <<http://www.mappinghacks.com/data/>> (accessed 01.10.15).

monsters (Magie, 1924; Patterson, 1982; Scholz, 2001; Tougher, 1997). As these individuals were the ones most often writing about castrates, both historical and modern perceptions of castrates have been colored, affecting how and by whom they have been studied.

5.3 ESTABLISHING THE PHYSICAL EFFECTS OF CASTRATION

5.3.1 Historical Accounts of the Effects of Castration

Several historical authors have addressed the effects of castration on both male physiology and psychology. Sometimes these accounts were used to denigrate castrates themselves or teach moral lessons about the evils of castration and castrates. Herodotus described the revenge one of Xerxes' eunuchs took upon his castrator (Hornblower, 2003). Aristotle gave the first real account of the effects of prepubertal castration in animals and humans, noting their inability to procreate or develop secondary sexual characteristics, seemingly making castrates female (Aristotle, 1984 (8(9).50)). Galen agreed with Aristotle's

contention that castrates were essentially men made into women (Ringrose, 1999), and this view of castrates continued into the present day, affecting the labeling of figures in ancient art, especially from the Fertile Crescent and Egypt, as castrates if they appear male but with long limbs, a small head, breast development, round hips, a lack of a beard, and slight to morbid obesity (Kadish, 1969; Ringrose, 1999).

Late Ottoman eunuchs were described as thin, but with increasing fat as they aged, having wrinkled faces, jutting teeth, stunted chins, and long, flabby limbs and short torsos (von Bayern, 1923). The Chinese thought of castrates as never having beards or body hair but also avoiding male balding, as having high-pitched voices, disproportionately long limbs, and fat over the hips, buttocks, and breasts, as well as looking attractive in their youth, gaining weight in their middle age, and looking feminine when they aged (Jay, 1993). *Castrati* were called boyish and effeminate, possessing female speaking voices, disproportionate limbs, small heads and shoulders, plentiful head hair, beardless faces, wrinkles late in life, breasts, a tendency to obesity, large, rounded pelves, and “barrel” chests, likely due to their intensive vocal training (Freitas, 2003; Jenkins, 1998, 2001; Krimmer, 2005; Potter, 2007). *Hijras* have been described as feminine, possessing high-pitched voices, slender, delicate limbs, fat on the buttocks and legs, and a disproportionate upper to lower body ratio (Mukherjee, 1980).

Studies of castrates carried out in the late 19th and early 20th centuries CE began to refine the understanding of the skeletal effects of castration. These studies, carried out to understand the processes of castration and its relation to the dawning field of endocrinology, took one of two forms: osteometric (skeletal) or anthropometric (living individuals). The osteometric studies were Lortet’s study of a castrate of Shilluk (Nilotic) origin now held in Lyon, France (Lortet, 1896), the examination of Nekht-Ankh, a 12th Dynasty (1991–1783 BCE) aristocratic mummy excavated in Rifeh, Egypt (Murray, 1910), and Tandler and Grosz’s autopsy of a Zanzibarian castrate who died in the Rudolfsspital in Vienna, Austria (Tandler and Grosz, 1909). These studies stated that castrate skeletons were often gracile and fine boned, with few strongly defined muscle insertion points, as well as possessing extremely long axial skeletons, often with still open epiphyses. The skulls and pelves were described as small and childlike, with disproportionately longer lower limbs than torsos.

The anthropometric studies included: Tandler and Grosz's examination of five Skoptsy men in Bucharest (Tandler and Grosz, 1910); followed by Koch's study of 13 Skoptsy men in Romania during World War I (Koch, 1921); then Wagenseil's descriptions of 11 Ottoman palace eunuchs of sub-Saharan African origin (Wagenseil, 1927) and 31 Chinese palace eunuchs (Wagenseil, 1933); and finally Pittard's examination of 30 Skoptsy men in Romania before World War I (Pittard, 1934). Common results of these studies were extreme length in the axial skeleton, disproportionate limb-to-torso length and *genu valgum* (knock knees), tall and narrow faces, enlarged pelves, kyphosis of the spine, tall and thin or fat body types, and the knowledge that earlier castration resulted in more extreme effects (Koch, 1921; Pittard, 1934; Tandler and Grosz, 1910; Wagenseil, 1927, 1933). The data contained within these reports provide an invaluable resource for castrate measurements, something that can no longer be easily obtained, as castrates no longer exist in large numbers and it is unethical to refuse treatment to intersex individuals out of scientific curiosity. These data were used in comparison with the modern paleopathologically obtained data in order to more fully describe the changes to the castrate skeleton, as well as for statistical analyses.

5.3.2 Modern Clinical and Anthropological Accounts of the Effects of Castration

Medicine, endocrinology, and animal studies can indicate what skeletal effects to expect from prepubertal castration. Animals castrated before puberty experience an elongation of the limbs similar to humans (Armitage and Clutton-Brock, 1976; Dahinten and Pucciarelli, 1986; Davis, 2000). Endocrinology shows that the reason for the skeletal changes stems from the loss of the testes, the major producer of androgens (male sex hormones) (Hiort, 2002; Hiort et al., 2007; Vanderschueren et al., 1998; Winters and Clark, 2003). Without androgens, skeletal masculinization cannot occur and epiphyseal fusion is delayed, because some androgens are turned into estrogens (female sex hormones), which halt bone growth (Kenny and Raisz, 2003; Vanderschueren et al., 1998). Without the main source of hormonal differentiation, male skeletons default to a more female state, resulting in intersex skeletons. This is often seen in individuals with congenital intersex conditions such as anorchia (Hegarty et al., 2007; Vinci et al., 2004), primary hypogonadism (Jay, 1993; Plymate, 2003), congenital hypogonadotropic eunuchoidism, testicular trauma, and androgen or



Figure 5.4 Axial skeleton of the Lyon castrate, displaying the open epiphyses, elongated humeri, expanded ribs, and unusual morphology of the skull and pelvic girdle. Source: Photo by author.

estrogen insensitivity syndromes (Plymate, 2003; Quigley et al., 1995; Winters and Clark, 2003). Most of these individuals are treated with hormones once their condition is discovered, making it difficult to use their measurements in comparison with archaeological castrates (Plymate, 2003; Quigley et al., 1995) (Fig. 5.4).

While few human castrate skeletons are readily available for examination, there have been skeletons discussed in the literature. Eng and colleagues (2010) described the skeletons of two Ming Dynasty eunuchs recovered during the excavation of a cemetery in Wutasi, Beijing, China. A team of Italian scientists described the remains of the famous castrato Farinelli, excavated in CE 2006 from a cemetery in Bologna, Italy, though his remains were unfortunately damaged due to water penetration of the burial plot. (Belcastro et al., 2011, 2014). The remains of the Lyon castrate and Nekht-Ankh were reexamined by the author to determine if modern paleopathological methods could elicit additional information about the effects of castration.



Figure 5.5 Clockwise from top left: Front and right lateral views of the skull and front and superior views of the pelvic girdle of the Lyon castrate. Writing on the right lateral side of the skull says “Eunuque negre, 20 ans env^{om} (?), Le Caire, 1894. Dr Lortet(?)” (Black eunuch, 20 years, Cairo [where this individual died and was autopsied], 1894. Dr Lortet [the doctor who brought the skeleton back to Lyon]). Source: Photo by author.

A comparison of these skeletons found similar results to earlier studies of human and animal castrates, but added the observations that the pelvic girdle formed masculine sex characteristics, though the ilia form unusual, flared shapes, and the skull takes on feminine or indeterminate sex characteristics, with strongly prognathic maxillae and strong, heavy mandibles overpowering the more delicate craniofacial region. In essence, castrates appear to belong physically between male and female and adult and child in skeletal development (Reusch, 2013a) (Fig. 5.5).

5.4 DETECTING CASTRATES WITHIN ARCHAEOLOGICAL POPULATIONS

Examinations of the skeletons of the Lyon castrate and Nekht-Ankh, along with comparisons to the Eng and Tandler and Grosz skeletons, have highlighted some distinct characteristics of castrate skeletons (Reusch, 2013a,b). These characteristics may aid in the detection of castrates both during excavation and in the laboratory, but one of the

best ways of detecting castrates in large skeletal collections may be through the statistical analysis of their metrical data. The anthropometric measurements given by Wagenseil (Wagenseil, 1927, 1933) following Martin's (1914) standards (which use the same skeletal landmarks as osteometric measurements) were converted into osteometric measurements and added to the database of castrate skeletal measurements. Combined with data from complete skeletons derived from the FORDISC database (Ousley and Jantz, 2005), this allowed the separation of castrates from both males and females through the use of Linear and Mahalanobis Distance discriminant function analysis (Reusch, 2013a). This statistical method also clearly separated male, female, and castrated sheep from the Davis sample (Davis, 2000; Reusch, 2013a), making this method useful for detecting both human and animal castrates within archaeological collections.

5.5 CONCLUSIONS

While the lack of castrate skeletal material available to be examined might seem like an insurmountable challenge to a bioarchaeological examination of castration, this project actually gained a richer, more nuanced depiction of castrates through its need to develop information from multiple interdisciplinary sources of evidence. By studying historical accounts, castrates as physical and social individuals were highlighted, and the locations of castrate populations were mapped, allowing for the future detection of possible castrate burial places.

The lack of available skeletons also increased the need to understand historical interpretations of the physical body and the effects of castration on male bodies. It highlighted historical social prejudices toward castrates and the effects of personal bias on the interpretation of history. The need to rely on previously collected data also necessitated a closer mesh between anthropometric and osteometric data, giving new tools which can be used in other areas of anthropological research. The reworking of a useful statistical sexing tool, discriminant function analysis, to account for three sex groups (male, female, and castrate) allows intersex individuals to be pulled out from the wider population, making their detection easier. Further refinement of this method might allow for the separation of different intersex individuals from each other. This will not only aid human skeletal studies, but zooarchaeological ones as well, providing better methods of

determining when castration in humans and animals began, and giving us a clearer picture of the past.

While the use of disparate datasets can be a daunting task, it has the potential to greatly expand our knowledge of subjects, giving unique insights into topics sometimes considered mundane or irrelevant. By combining art, humanities, social sciences, sciences, and medicine in this study, more knowledge about the lives of castrates was obtained than would have been possible from a study of only their skeletons, and new and different uses of tools were found which could have a great impact on anthropology and archaeology in the future.

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This project would not have been possible 10 years ago. The time, effort, and money that would have been required to visit all 10 or so of the institutions that hold the one or two remaining copies of some of these works would have been impossible for a graduate student or even an employed scholar who was not independently wealthy. In the ongoing effort to employ interdisciplinary methods to archaeological and anthropological practice, it is likely that the Internet and digital humanities will provide a major source of information in the future. Training for the location, use, and interpretation of digital sources should be a priority now for the benefit of the discipline in the future.

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