Identified skeletal collections: the testing ground of anthropology?

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Chapter 1

Introduction

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This chapter aims to give a broad overview of the topics covered in this book, along with a background and discussion of what identified skeletal collections are. There are two themes which run through the book: uses of identified collections and ethical issues surrounding their existence and use. These themes are broad and the chapters in the book are therefore wide-ranging, covering everything from descriptions of specific collections (Chapters 2 and 3), to relating data from living people with that associated with collections (Chapters 3 and 8), via the testing of ageing methods (Chapters 5, 6 and 7), to problems of biased collections (Chapters 4, 5 and 9). They also cover the collection of the skeletons within both a legal framework and as creations with an anthropological purpose. It is important to remember throughout this introduction and the rest of the book that these skeletons represent once living people and that these remains and the biographical data associated with them (including age, sex or gender and cause of death) need to be treated with respect and dignity. In providing an overview of this book, this chapter will also discuss what respect and dignity may mean in this context and how research, dissemination (academic and to the general public) and new technologies (including social media) may impact on this. The overall objective of this chapter is to make the reader think critically about these issues.

What are identified human skeletal collections?

It will be seen that each chapter contains a slightly different definition or description of what these collections are. This is important, but it strikes at one of the main issues: if there is no definition of what they are then there can be no good discussion of their existence, use or treatment. For the purposes of this book, the aim was to keep the definition broad to be as inclusive as possible. This book covers identified skeletal collections derived from archaeological sources (Chapter 2 and 5), from dissections and other cadaver sources (Chapters 3 and 9) and those created from recent (or currently used) cemetery sites specifically for anthropological (or bioarchaeological or osteological) research (Chapters 7 and 8). This disparate starting point means that identified skeletons can be found in a wide range of differing environments (museums, university departments and churches) and be covered by different legislation (aside from country specific differences which also exist) as well as different codes of both practice and ethics (as will be discussed by the authors in this book). Almost universally (in the case of these collections), these skeletons are treated as anonymous individuals who have specific (and useful) data associated with them: normally age and sex (although it may be important to consider whether the sex of the individual has been socially constructed). However, it should be borne in mind that some skeletons are not discussed as anonymous individuals and this is predominantly the case for 'famous' or historically 'important' individuals, e.g. King Richard III of England, Henry VII of Luxembourg, the castrato singer Farinelli, and the novelist Samuel Richardson (Belcastro et al., 2011; Buckley et al., 2013; Mariotti et al., 2013; Scheuer et al., 1994; Scorrano et al., 2017).

The source of the skeletons causes biases in the structure of the collections (see specifically Chapters 4 and 5, but discussed throughout the book). The archaeologically derived collections are are often of those who could afford burial in such a way that they could be identified several hundred years later, e.g. they are buried with coffin plates or in a crypt (Caffell & Holst, 2010; Cox, 1995; Molleson & Cox, 1993; Scheuer & Bowman, 1995). In contrast, those derived from recent cemeteries are often considered to be of lower socio-economic status backgrounds (for details and a more in depth discussion of this see Chapters 6 and 7). Whereas those derived from anatomical dissections come from either end of the socio-economic scale, depending on the conditions during the period when the collection was amassed (Chapter 4). Furthermore, it can impact on the availability of documentary data and the information available (and quality of it) concerning each individual in the collection. Typically, as will be seen in this book, data tend not to be restricted to age and sex. Other information, such as name, address, occupation, place of death, date of death, cause of death, marital status and birth date are also included. This ensures that collections of these individuals are ideal for testing a variety of hypotheses and developing new recording methods (see below). However, limitations in the availability of the data as well as their quality and reliability does have an impact on the use of the collections (see Chapters 4, 5, and 8). The size of these collections is also variable, again in part depending on the source or purpose of the original collection. Much of the biographical data collected and how they were collected is based on contemporaneous anthropological views and for this reason 'race' or ethnicity is also listed, particularly in North America and South Africa (see Chapters 4, 5 and most specifically 9).

While this book focusses on a limited geographical area: Britain, Canada, Portugal, South Africa and the USA. It should be noted that other countries hold similar collections derived from the same type of sources. Therefore, it is important to remember that the collections and the consideration surrounding them are not limited to a few countries or continents (Alemán et al., 2012; Belcastro et al., 2017; Chi Keb et al., 2017; Eliopoulos et al., 2007; Facchini et al., 2006; Rissech & Steadman, 2011; Ross & Manneschi, 2011; Salceda et al., 2012; Ubelaker, 2014). This is a further bias both within this book and in numerous other publications: a fixation on a limited range of collections used mostly because they are well known, easy to access, and (aside from the Portuguese collections) are mostly in English speaking countries. Beyond the geographical limitations there are also temporal aspects: most (although not all) collections consist of individuals who died during the past 150 years. Therefore they only provide a very short temporal snapshot of the human skeleton. The British identified collections (Chapters 2 and 5) include individuals from earlier times but they too are limited to the post-mediaeval period. These biases will be discussed below.

Conception of the book

This book was originally conceived after a conference session '*Identified Skeletal Collections: The testing ground of anthropology?*' presented at the 17th World Congress of the International Union of Anthropological and Ethnological Sciences in Manchester, in August 2013. The session was organised due to the number of studies being undertaken on identified skeletal collections and a lack of discussion surrounding their existence and use. These collections, as will become very clear in the subsequent chapters, are very widely used (particularly by students) and there is often reanalysis of the same collections to test the same (or the same type of) questions and this is reflected within this book. Reanalysis leads to repeated handling of remains and it is well known that re-handling can lead to deterioration of the remains (Caffell et al., 2001). Collection management is, therefore, also an important consideration. It is also important to remember that, as the field develops, new technical methods develop, e.g. three-dimensional scanning and printing as well as studies of DNA. This means new questions can be asked, while new methods also need to be tested and compared to older ones meaning that re-analysis can be necessary. In addition to this it is also necessary to consider how this research is disseminated to the broader public, for example through museum displays, academic and non-academic publications and, increasingly digitally via websites, blogs and social media.

Within the context of this book, the main aspect to be discussed was the use of identified skeletal collections in relation to the ethical aspects involved in their curation (and possibly original provenance). These collections straddle a limbo between the skeleton (rarely identified to a particular individual) and the fleshed cadaver. Unlike fleshed cadavers (IFAA, 2011), which are also identifiable, there has been little discussion about how research on these skeletons should be undertaken and what should be reported. There is therefore a need for discussion whether such guidelines are needed, what they should cover and how often they should be updated. Whether these guidelines need to be different to those covering non-identified remains also needs to be considered or whether the same guidelines (perhaps derived from guidelines and codes of practice for anatomical cadavers) can be applied to all remains. If guidelines are needed, then should they be local to a country, a type of collection, or global basic standard? As can be seen from the chapters, local conditions affect what is already in place. It should be noted at this point that this is a different question to whether new legislation is needed to cover these collections, which (as can be seen in this book but see also (Márquez-Grant & Fibiger, 2011) are already covered by existing laws and precedents.

Why are they so useful?

As stated above identified collections are very widely used, particularly by students and the first step in considering ethics is to understand why they are so useful. Every chapter of this book discusses the uses and importance of these collections for anthropological and archaeological research. Numerous specific and general examples of these types of research are covered throughout the book, so this introduction will only consider these broadly.

Starting with the forensic importance of these collections, it may be thought that DNA analysis has superseded morphometric skeletal analysis for identifying skeletal human remains. However, DNA does not survive in all burial environments (Collins et al., 2002). Comparative DNA is also needed for identification purposes which may not always be available. For these reasons morphometric methods to estimate both age and sex are needed, and they need to be appropriate for the population (Ross & Manneschi, 2011). This need for population specific approaches is discussed below, as well as in detail in Chapter 4. Methods for estimating age and sex are also needed in archaeological contexts. Without such methods (as well as other osteological approaches including palaeopathological) it would, for example, have been an expensive guess to do confirmatory DNA testing on the skeleton identified as Richard III (Buckley et al., 2013). In more normal archaeological contexts without such methods it would be impossible to undertake any demographic research or to study the effect of disease on population health: particularly which groups were more vulnerable to specific diseases.

These collections also play an important role in interpreting skeletal changes and for identifying diseases in skeletal remains (some examples of this include, Cardoso, 2008; Henderson et al., 2013; Santos & Roberts, 2006). Clinical data can be used as a foundation, but this rarely focusses on the bone changes and some diseases no longer progress to causing bone changes due to modern interventions, e.g. antibiotics. Therefore studying pre-antibiotic era skeletons and focussing on hard tissue changes provides details not readily available in clinical literature. This, for example, has been a particular focus of my own research studying the impact of occupations on muscle attachment sites to the skeleton: attachment sites which are primarily studied in relation to rheumatological conditions in modern clinical literature (Henderson et al., 2017). Such aspects are particularly important for archaeological research aiming to reconstruct lives in the past, including health, disease and disability. Here the other biographical data associated with the skeletons becomes more important. Cause of death can assist in differentiating lesions occurring in similar regions but with different causative agents, e.g. pulmonary tuberculosis and bronchitis (Santos & Roberts, 2006). Data on occupation can also enable morphological changes, such as those at joints or muscle attachments, to be studied in relation to the working life (Alves-Cardoso & Henderson, 2013). These type of data have more limiting factors than those of age and sex, as they are deeply grounded in governmental aims and broader socio-cultural perceptions as well as scientific knowledge. Two aspects of these limitations are focussed on in this book: namely the designation of 'race' (Chapter 9, but other chapters also deal with this) and occupation (Chapter 8).

Biases

The limitations outlined above are only part of a broader set of biases which occur in these collections. These biases are important to consider not only in terms of why they occur, but the impact on the data collected. This is not the first discussion of biases present in skeletal collections (see Herring & Saunders, 1995), but these remain important and sometimes overlooked issues. Biases are discussed in all chapters, but in this section I will draw your attention to certain types of bias.

Both temporal and geographic biases have been alluded to above. The biggest bias in this book, as well as within each collection, is that of time. The majority of collections discussed in this book were built up in the twentieth century, typically of individuals alive in the early part of that century. This is a general trend for most of the collections which exist. Britain is an unusual exception in this respect with most of the identified collections coming from cemeteries which have long since ceased to be used for burial, e.g. the collection from St. Bride's Church in Fleet Street and the more well known Spitalfields collection (see Chapters 2 and 5 as well as Cox, 1995; Scheuer & Bowman, 1995). Such skeletons may be ideal for testing methods applicable to the pre-modern world. Changes in stature, demographics and medical practices, however, mean that these collections may be less appropriate for the development and testing of forensic standards. Chapter 7 discusses the needs of modern forensics particularly the need for standards to be tested on more recent identified collections: more recent even than those of the early- to mid-twentieth century.

There is often a belief that anthropological methods need to be developed that are appropriate to specific populations, a specific example of this is stature methods for which exist for many different populations (examples of which include Cardoso & Gomes, 2009; Mays, 2016; Ross & Manneschi, 2011). In the past the concept of 'race' was an important reason for this. As discussed in many of the chapters, this concept also shaped the structure and demographic profile of some of these collections. Skeletal differences were often attributed to 'race' in the past, while the terms ethnicity and ancestry are often used today. In several chapters (but specifically 4, 5 and 9) the importance of differences in socio-economic status leading to differential access to resources is considered with relation to these skeletal differences. These socio-economic differences form another bias both within and between collections. Not only do these differences have to be disentangled from geographic, but also temporal variation. It is also important to note that identifying an individual's (or a population's) socio-economic status or their access to resources based solely on the documentary data held within an identified collection is limited by the historical evidence (Alves Cardoso et al., 2016). Life-course biographical data, i.e. data describing an individual's whole life, are typically very limited, as discussed in Chapter 8. However, geographical biases should not be entirely discounted, but these also need to be considered in relation to environmental differences, particularly local disease-burdens.

The final obvious bias is demographic: these collections (as with most cemetery or archaeologically-derived skeletal assemblages) rarely represent a normal living population (Walker, 1995). Furthermore, the documentary data, particularly age, can be biased by how it is collected. Socio-cultural biases can play a role here, particularly in how the different sexes are viewed with females often under-represented in collections created from dissection rooms (see Chapters 3 – 5). A comment also needs to be made about the difference between biological sex and gender. Expressed very simplistically, gender is how we ourselves or society perceive us, whereas biological sex is genetically determined. It is therefore important to consider how the collection was created and where the documentary data come from when using the term 'sex' and when testing sex estimation methods. Similarly the source of documentary data may affect the age ascribed to some skeletons (most chapters discuss this issue). This is particularly important when testing ageing methods or when studying skeletal changes associated with the ageing process.

These, and other biases and limitations, should always be considered when developing and testing methods for analysing skeletal remains. However, these are human remains and not just materials to be used and for this reason it is also important to consider the ethics of their study.

Identified but anonymous

In this section I want to consider the anonymous nature of these collections and how they are treated as collections rather than as individuals. Unlike the skeletons of 'famous' individuals who are discussed (both in the media and in academic publications) by name, these skeletons remain anonymous. Rather than 'refleshing' their lives through skeletal analysis combined with historical documents, as with these 'famous' individuals, their lives are typically considered at a population level. Exceptions to this do exist where osteobiographies of individuals in collections have been published (e.g. Lopes *et al.*, 2010; Scheuer *et al.*, 1994) and where names have been (I think in hindsight, inappropriately) published (Henderson *et al.*, 2013). The International Federations of Anatomist guidelines state that donors should normally remain anonymous (IFAA, 2011) and this is typical for most medical publishing, although there is an acknowledgement that this can be hard to achieve when images or unusual conditions are published (BMJ, n.d.). Should this guideline also be in place for individuals represented in these collections, whatever their initial provenance? Or is the removal of identity (via anonymisation) a continuation of socio-economic differences and deprivations in death? Does this also misrepresent archaeology to the general public, giving the impression that there is a greater focus on the 'famous' than the general population?

Continuing social stratification from life into death in these collections has previously been discussed in detail (Muller *et al.*, 2017) and also Chapter 9 of this book. Naming individuals in these collections would not change this. However, using the research undertaken to reflesh the skeleton can be a good way to engage the wider community via outreach projects, as discussed in Chapter 2 and 9. As discussed in this latter chapter, this can be a good approach to encouraging currently under-represented groups into academia.

New technologies should also dissuade those keen to publish names of individuals in these collections. Three-dimensional representations already exist on the internet in the public domain, images of bones are shared via social media and three-dimensional printing means that (if the point cloud data are available or can be reconstructed) these could be printed by anybody with the resources available. Guidelines for the new digital era are needed and are currently being developed for the UK for the British Association for Biological Anthropology and Osteoarchaeology. Advances in genetics and biomolecular research, alongside traditional palaeopathology, also mean that retaining anonymity is sensible. The presence of heritable disease or genes for them identified in skeletal material should not lead living individuals to worry that they may also have the diseases or may carry them. Ethical and practical guidance covering these areas may also be needed for skeletal collections and could be based on existing genetic guidance (e.g. ISOGG, n.d.).

Dignity and respect

Finally, it is important to remember that all guidance points out the importance of retaining dignity and respect for the human remains under study. While there have been many arguments demonstrating that harm cannot be perpetuated against the deceased, as the subject of the harm does not exist (Scarre, 2013). This lack of a subject may also be important when considering the structural violence framework discussed in Chapter 9. Approaches to replacing this subject, for example by However, it cannot be denied that harm can be perpetuated to the living by disrespecting the supposed rights of the deceased. This is especially obvious in the case of disaster management where it has been argued that the care of the dead and the living are intimately connected (Woods, 2014), but I think this could be extended to the study of these identified collections. Respecting the dead, in this sense, is very much about respecting the living. Nevertheless, as discussed by Scarre (Scarre, 2013), the concept of respect as well as that of dignity when not clearly articulated raise further questions. Future guidelines need to clearly define these terms as well as consider how they can be used.

What is clear from many of these chapters is that a multidisciplinary approach is needed to working with these collections. The dangers of removing the individuals from their geographical, temporal, socio-economic, socio-cultural and socio-political contexts as well as remembering the frameworks for these within which we as researchers work, are clear: they limit our ability to correctly interpret the results and perpetuate biases within the collections. Again, these are not new ideas, the problems of working on post-mediaeval skeletons without a historian assisting with the documentary data was discussed more than two decades ago (Cox, 1995). I feel we also need to be working in an interdisciplinary context when creating guidelines and codes of practice with assistance from other fields including bioethicists, philosophers and, including anatomists in those countries where anthropology, archaeology and anatomy are disparate fields.

The aim of this introduction was to provide a background to the broad themes running through this book as well as raise questions in the minds of the reader. We are priviledged to work with these remains and we must always remember that some people disagree with their study and some vehemently wish to remain buried forever once they are dead. For these reasons (amongst others), I think it is important to maintain the highest academic and ethical standards throughout our work. Hopefully, this book will also demonstrate why these identified collections are so vital to archaeology, anthropology and forensic science (as well as other related fields), but also provoke discussion surrounding best practice and ethical standards.

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