



# □ An Ethical, Cultural and Historical Background for Cemetery-Based Human Skeletal Reference Collections

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## Abstract

In historically Protestant countries, human skeletal reference collections curated by research institutions have been amassed from bodies dissected by anatomists, typically unclaimed cadavers from morgues and hospitals, or from remains donated to science. In contrast to these anatomy-based and donation-based collections, skeletal reference collections in historically Roman Catholic countries on mainland Europe and in Latin America are for the most part derived from unclaimed remains exhumed from modern cemeteries and ossuaries at the end of the mandated interment period. While much has been written in English about the history, context and ethical framework of anatomy-derived collections, cemetery-based collections have received very little critical attention. The current paper addresses this gap, with particular reference to cemetery-derived collections in Portugal. The cultural and historical context of southern Europe is discussed, particularly Roman Catholic mortuary traditions and the influence of the Napoleonic Code, and these provide the background for an overview of the ethical issues raised by cemetery-derived collections. Here, general principles that should guide the work of human osteologists working in archaeological contexts are relevant, as regards consent, dignity and respect

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and benefits to science and education, because unlike their anatomy-derived counterparts, cemetery-based collections include individuals who were once buried.

## Introduction

Human skeletal reference collections are repositories of modern human skeletal and dental variation that are curated at public and private institutions for the purposes of research and teaching. Also referred to as “identified” or “documented” collections, these differ from other series of human skeletons, particularly those amassed from prehistoric and historic archaeological sites, in that the remains of the individuals they represent are purposely identified from ante-mortem records (Albanese 2003). Associated with these collections, a variety of records provide personal information, typically including the name of the individual, the sex, age, date and cause of death and place of birth or residence, among other data. Reference collections are also often distinguished by their size, encompassing hundreds or thousands of skeletons and/or skulls, and by the typically good preservation and completeness of the remains. These collections have been extensively sought after and used to test and develop methods of osteological analysis, for comparative modern human reference in human evolutionary studies and as the basis for anthropological and medical training and research in normal skeletal variation (e.g. Tobias 1991; Brauer 1992; Albanese 2003; Hunt and Albanese 2005; Bekvalac *et al.* 2006; Kern 2006; Dayal *et al.* 2009; Usher 2009; Roberts and Mays 2011; Mann 2013; Ubelaker 2014; Watkins and Muller 2015; Weiss 2015).

Three broad types of skeletal reference collections can be recognised based on the source of the skeletons that are included in them: (1) unclaimed cadavers used for teaching anatomy and dissection, here called anatomy-derived collections; (2) body donations, or donation-based collections; and (3) historic or contemporary cemetery remains, or cemetery-derived collections. Anatomy-derived collections include some of the oldest reference collections in the world, sourced from unclaimed cadavers at local morgues and hospitals. These unclaimed bodies were made available to medical schools to be used for anatomy instruction, a practice which was common in several jurisdictions prior to the 1950s, and which resulted in the development of the Terry (Hunt and Albanese 2005), Hamman-Todd (Kern 2006), Cobb (Watkins and Muller 2015) and U-Iowa Stanford (Schermer *et al.* 1999) collections in the US, as well as the Grant collection in Canada (Albanese 2018) and the Raymond A. Dart (Dayal *et al.* 2009) and Pretoria (L'Abbé *et al.* 2005) collections in South Africa, just to name the best-known.

Body donation, as a means to expanding existing anatomy-derived collections or to develop new ones, is a more recent phenomenon in North America. This reflects substantial changes in social views toward anatomical instruction, as well as the advent of tissue transplant surgery and testamentary body donations instituted by legislation for scientific research (Hunt and Albanese 2005). The William Bass Donated Skeletal Collection at the University of Tennessee-Knoxville (Shirley *et al.* 2011), the Maxwell Museum Documented Skeletal Collection at the University of New Mexico (Komar and Grivas 2008; Edgar and Rautman 2014) and the Texas State University Donated Skeletal Collection (Martinez 2013) are examples of such recent collections. The distinction between collections

derived from body donations and from unclaimed cadavers for anatomical instruction may not be clear cut, since many earlier anatomy-derived collections eventually started to incorporate body donations, such as the Terry (Hunt and Albanese 2005) or Raymond A. Dart collections (Dayal *et al.* 2009). Similarly, recent donation-derived collections started off by incorporating unclaimed remains donated from medical examiners, such as the William Bass Collection (Christensen 2006; Shirley *et al.* 2011).

In contrast with these two types of collection, cemetery-derived reference collections are found almost exclusively at institutions in western and southern Europe or in Latin America. These collections are comprised of unclaimed skeletonised remains exhumed from temporary/leased graves or cleared from temporary/leased secondary interments at local contemporary managed cemeteries in various cities. The amassing of cemetery-derived collections has not experienced significant changes in social views or in legislation, and a diverse group of old and more recent cemetery-based collections is now available in Portugal (Cardoso 2006; Cunha and Wasterlain 2007; Ferreira *et al.* 2014; Cardoso and Marinho 2016; Escoval 2016), Spain (Pastor *et al.* 1995; Rissech and Steadman 2011; Alemán *et al.* 2012; Aguado-Henche *et al.* 2015), Italy (Facchini *et al.* 2006; Belcastro *et al.* 2017; Carrara *et al.* 2018; Cattaneo *et al.* 2018), Greece (Eliopoulos *et al.* 2007; Kranioti *et al.* 2008; Kranioti *et al.* 2011), France (Menecier 2006), Belgium (Orban and Vandoome 2006), Switzerland (Lopreno 2006), Austria (Sjøvold 1995); Mexico (Valenzuela Jiménez 2007; Chi-Keb *et al.* 2013), Colombia (Sanabria-Medina *et al.* 2016), Brazil (Cunha *et al.* 2018), Argentina (Bosio *et al.* 2012; Salceda *et al.* 2012) and Chile (Garrido-Varas *et al.* 2014; O’Bright *et al.* 2018).

However, although some works in English provide basic information about the collections in these countries (for example, Quigley 2001; Usher 2009; Weiss 2015; Lambert and Walker 2018, in addition to the works cited above), cemetery-based skeletal collections represent peculiar and poorly understood assemblages of human remains for which the broader history and cultural context is largely unknown in the English-speaking world. Although there are some notable exceptions (e.g. Sharman and Albanese 2018), the amassing of cemetery-based collections occurs under a framework that is often regarded as bizarre in formal and informal conversations. This contrasts sharply with what has been the history of amassing skeletal reference collections in North America, South Africa, the UK and even northern Europe. To the Anglophone biological anthropology audience, the social history behind the development of many of the anatomy- and, more recently, donation-based collections is fairly well-known and their background has been carefully examined (Hunt and Albanese 2005; Christensen 2006; Kern 2006; Shirley *et al.* 2011; Watkins and Muller 2015; Weiss 2015; Muller *et al.* 2017). In addition, a comprehensive ethical framework for the use of these anatomy- or donation-derived collections has been developing and debated for some time (Christensen 2006; Edgar and Rautman 2014; Holland 2015; Weiss 2015). A good understanding of the differences between anatomy-/donated- and cemetery-derived collections will help researchers and other stakeholders to make more informed choices about research potential and limitations, and regarding how to address management issues and ethical dilemmas.

The purpose of this paper is to provide the historical and cultural context for cemetery-based reference collections in broad strokes, as there are many commonalities between the

different cemetery-based collections in Europe and Latin America. This paper does not wish to cover in detail the reasons why researchers decided to amass collections, but instead focuses on their broad cultural and historical background and discusses the underlying conditions that allowed these collections to be amassed. Because of the commonalities between collections in Europe and Latin America, cemetery-based collections also share a number of ethical concerns and considerations that will be examined here. As a starting point and foundational example for the discussion of these historical, cultural and ethical issues, this paper will use the case of Portugal, and the many cemetery-based reference collections that have been amassed in the country's academic institutions over time. As such, this paper is also intended largely for an English-speaking biological anthropology audience, who will be able to better appreciate how cemetery-based collections spring from different paths of the history of anatomy and of biological anthropology that intersect with pre-Reformation Christian burial practices – more specifically Roman Catholic or in the case of Greece, Orthodox - and Napoleonic law reforms in Europe, as well as Latin America's distinct colonial past. Discussions in this paper may even prove useful to European biological anthropologists, who tend to skim over the differences between cemetery and anatomy-based skeletal reference collections and often fail to recognise properly and appreciate their distinct historical and socio-cultural nature and significance.

### **A Brief History**

Portugal pioneered the development of skeletal reference collections in the nineteenth century and made significant contributions to the early historical developments of European biological anthropology. Despite its small size, the country has a rather thriving and unusual history of having amassed several very large and meticulously documented cemetery-derived collections over the last hundred years (Lubell and Jackes 1997; Santos 2018, 2019). Inspired by the collections amassed by Paul Broca (1824–1880) in France, and by the teachings he received at the School of Anthropology in Paris, Francisco Ferraz de Macedo (1845–1907), a Portuguese physician and the father of Portuguese biological anthropology, amassed at his private house in Lisbon one of the earliest thoroughly documented skeletal collections in the world. This was perhaps the earliest collection (amassed circa 1882–1889) to systematically incorporate detailed biographic information from the skeletal remains of each individual included in it and on a large scale, as its over 1000 skulls and 300 skeletons were fully identified as to sex, age and place of birth (Cardoso 2006, 2014). This systematic amassing of skeletal material from one source with detailed biographic data stands in stark contrast with most, if not all, of the earlier skeletal collections, which aimed at assembling a wide range of geographic and pathological varieties of humans (e.g. Morton *et al.* 1839; Davis 1867; Turner 1884; Duckworth 1899). This includes the substantial collection accumulated by the Broca Museum by 1880, which included crania collected from the catacombs in Paris (Vallois 1940). These catacombs, as the secondary interment location for the city's overflowing cemeteries, would serve as the precursor source for all subsequent cemetery-based skeletal reference collections, including Ferraz de Macedo's.

The uniqueness of Ferraz de Macedo's collection, however, extends into other domains. Unlike most anatomical scholars of his time, who resorted to using grave robbers or

other dubious methods to amass their collections (Dias 1989, 2012; Giménez-Roldán 2016), Ferraz de Macedo collected the remains meticulously after being granted official permission from the Lisbon municipality to collect unclaimed remains from local cemeteries. He was also committed to an ethically sourced collection, which is illustrated by him not seeking recognised legal ownership over the remains, and even discussing provisions for the remains to be returned to the Municipality of Lisbon (Macedo 1882). As a consequence, Ferraz de Macedo established a sound precedent that is at the foundation of the several – and sizeable – existing cemetery-based skeletal reference collections currently curated at Portuguese academic institutions.

Between the 1910s and the 1940s two other Portuguese researchers, Eusébio Tamagnini at the University of Coimbra and António Mendes Correia at the University of Porto, amassed similar collections from unclaimed remains made available by local cemeteries in the cities of Coimbra (Cunha and Wasterlain 2007) and Porto (Correia 1917; Cardoso and Marinho 2016), respectively. However, although cemeteries have been the main source of material for skeletal reference collections in Portugal, cadavers used for teaching anatomy and dissection were also incorporated into skeletal collections between the 1890s and the 1940s in university departments of anthropology (Cunha and Wasterlain 2007) and anatomy (Cunha 1926). More recently, the University of Coimbra further expanded its collections by incorporating modern unclaimed remains from a non-local cemetery in the city of Santarém (Ferreira *et al.* 2014), and another similarly recent collection has been amassed at the University of Évora (Anselmo *et al.* 2016; Escoval 2016) with skeletons collected from the local municipal cemetery. The Ferraz de Macedo collection was eventually donated to the National Museum of Natural History in Lisbon in 1907, where it was almost completely destroyed by a fire in 1978. It has since been replaced by a larger but similarly sourced cemetery collection amassed by Luís Lopes and the author of this paper between 1981 and 2004 (Cardoso 2006, 2014).

At about the same time (ca. 1890–1940) as the earliest Portuguese skeletal reference collections were being developed, thoroughly documented collections were also being amassed by George Huntington (Mann 2013), Carl Hamman (Kern 2006), Robert Terry (Hunt and Albanese 2005), W. Montague Cobb (Rankin-Hill and Blakey 1994) and Raymond Dart (Dayal *et al.* 2009) in the US and South Africa, by sourcing unclaimed cadavers used for anatomy and dissection instruction. These have become known as some of the most important and much sought-after skeletal reference collections in the world, and eventually some were further expanded by T. Wingate Todd (Kern 2006), Mildred Trotter (Hunt and Albanese 2005) and Philip Tobias (Dayal *et al.* 2009). These collections were far larger than those in Portugal; to the best of the author's knowledge, only institutions in Italy were amassing similarly sizeable and meticulously documented skeletal collections from cemeteries. Behind these were Fabio Frassetto at the University of Bologna (Belcastro *et al.* 2017) and Enrico Tedeschi at the University of Padua (Carrara *et al.* 2018). Frassetto collected unclaimed remains from cemeteries in Sardinia (Sassari) and Emilia Romagna (Certosa) during the first half of the twentieth century, having previously collected remains from Certosa as early as the 1880s (Chantre 1886). Concurrently, Tedeschi collected both unclaimed remains from cemeteries in northeastern Italy and unclaimed cadavers from hospitals and other relief organisations in the city of Padua.

Many of these collectors also amassed skeletal material from other origins, including from archaeological sites. However, it is during this time that the repository of human skeletal variation we recognise as the documented, identified or reference collection was created. This occurred simultaneously to the amassing of earlier collections (Chantre 1886; Vallois 1940) which were equally systematic in their process but more oriented towards documenting “racial” diversity and anatomical abnormalities, mostly focused on crania, while sampling from a variety of sources.

While many other cemetery-derived reference collections would be amassed in continental Europe over the twentieth and into the twenty-first centuries, there is a gap of about 50 years before the second wave of collections was assembled. One of the earliest of this second wave is curated at the University of Genève, Switzerland and was amassed in the early 1990s by Christian Simon (Lopreno 2006). This was followed by collections amassed at the University of Barcelona, Spain, spearheaded by Carme Rissech (Rissech and Steadman 2011), at the University of Athens, Greece, led by Anna Lagia and Constantine Eliopoulos (Eliopoulos *et al.* 2007) and at the University of Milan, Italy under the direction of Cristina Cattaneo (Cattaneo *et al.* 2018). All of these collections sourced unclaimed remains from local cemeteries. Similar collections in Latin America have also only been amassed within the last 20 years. This includes two collections in Mexico, the earliest of which was initiated by Talavera González at the Instituto Nacional de Antropología e Historia in Mexico City (Valenzuela Jiménez 2007), and a more recent collection amassed by a team of researchers led by Vera Tiesler at the Universidad Autónoma de Yucatán, in Merida (Chi-KeB *et al.* 2013). In Bogotá, Colombia, the Instituto Nacional de Medicina Legal y Ciencias Forenses has been amassing a large collection of unclaimed remains from cemeteries in the city since 2009. Similar collections have also been amassed in Argentina: a multi-institution team is leading the Chacarita Project, where unclaimed remains are excavated from the Chacarita cemetery in Buenos Aires (Bosio *et al.* 2012), and in the nearby city of La Plata, another similar collection is being amassed by a research team from the Universidad Nacional de La Plata, sourcing unclaimed remains from the city’s municipal cemetery (Salceda *et al.* 2012). Unclaimed remains from cemeteries are again the source for skeletal material in the collection curated at the Universidad de Chile in the city of Santiago (Garrido-Varas *et al.* 2014; O’Bright *et al.* 2018) and the various collections housed in different institutions in Brazil and described by Cunha *et al.* (2018). Beyond Latin America, but still within the context of Spanish historical colonialism, a recent cemetery-derived collection has also been assembled in the Philippines (Go *et al.* 2017).

Although cemetery-based collections are more prominent in southern Europe, and provide a much easier, faster and cheaper way to amass documented skeletal collections, anatomy-derived collections were also amassed throughout the twentieth century and are found in various institutions in Spain (Trancho *et al.* 1997), Italy, (Giraudi *et al.* 1984; Di Vella *et al.* 1994; Massa 2006) and as mentioned above in Portugal (Cunha 1926; Cunha and Wasterlain 2007). They are also available in some Latin American countries (Sánchez-Mejorada *et al.* 2011; Gómez-Valdés *et al.* 2012; Cunha *et al.* 2018), as well as in France (Mennecier 2006). In contrast, institutions in historically Protestant northern Europe and post-communist eastern Europe seem to curate almost exclusively anatomy-



derived collections, such as those in Finland (Niinimäki 2011), the Netherlands (Van der Merwe *et al.* 2013), Romania (Ion 2011; Soficaru *et al.* 2014) and the Czech Republic (Brzobohatá *et al.* 2016; Guyomarc'h *et al.* 2016). Anatomy-derived collections are also found in East Asia (Case and Heilman 2005; Mann and Tuamsuk 2016; Techataweewan *et al.* 2017), and donation-based collections are growing in North America and South Africa.

In the UK and the Netherlands, a unique and somewhat distinct set of cemetery-derived collections has been available for research. This includes the Spitalfields (Molleson *et al.* 1993), St Bride's (Scheuer and Bowman 1995) and Bethnal Green (Ives and Humphrey 2017) collections in the UK and the Middenbeemster collection in the Netherlands (Palmer 2012; Ziesemer 2013). These are distinct from the continental European collections in that they are comprised of archaeologically excavated skeletons from early modern burial sites or crypts, where the individuals are subsequently identified through coffin plates and church records. Similar to these collections is the now re-interred and unique North American skeletal collection which resulted from the partial excavation of the nineteenth-century St Thomas Anglican Church cemetery in Belleville, Ontario, Canada (Saunders *et al.* 1995). Unlike the other collections discussed here, these are not derived from contemporary managed cemeteries and, therefore, are more akin to archaeological heritage.

The social circumstances that have facilitated the amassing of cemetery-derived collections are unique and result from early developments of the history of anatomy and anthropology in southern Europe that intersect with Roman Catholic (or in Greece, Orthodox) mortuary practices and traditions, and Napoleonic law reforms that were translated into cemetery regulations. By extension, the same set of circumstances occur in Latin America (and the Philippines) because of colonisation by the Portuguese and the Spanish.

### **The Cultural Context**

Roman Catholic mortuary traditions and practices have had a significant role in providing the sociocultural and even legal context for the amassing of human remains from managed cemeteries in southern Europe and Latin America, through cemetery history, legislation, regulations and practice. In these cemeteries, particularly in urban areas, temporal/leased burials, followed by exhumation of remains, grave reuse and secondary interments are common practice. For various reasons, the decommissioning of graves and abandonment of remains by the families at various stages of the process is common, at which point unclaimed remains are sourced for collections. The Christian practice of reusing graves, or removing remains from graves to ossuaries or charnel houses on a regular basis to avoid overcrowding in the churchyards, was common in medieval Europe (Ariès 1991; Colvin 1991; Kselman 1993; Mattoso 1996; Horn 2006; Curvers 2010; Dexeus 2015; Kerner 2018), and it was still the usual practice in Roman Catholic churchyards up to the mid- to late nineteenth and early twentieth centuries in southern and central Europe (A.P.D.G. 1826; Ferreira 1880; Pina-Cabral and Feijó 1983; Boissavit-Camus and Zadora-Rio 1996; Pezzini 2010; Chroustovský and Průchová 2011; Rebay-Salisbury 2012; Kenzler 2015) and Latin America (Caballo 2005; Zucchi 2006), when increased urbanisation led to overcrowding of these spaces and perceived

health hazards, and the subsequent development of new public cemeteries built outside towns across Europe and the Americas. These medieval practices, however, became incorporated into nineteenth-century cemetery legislation in continental Europe when Napoleonic reform laws were adopted by various countries. These civil reforms removed cemeteries from the sphere of the Church and placed them under government control and mandated the turnover of graves not bought in perpetuity and the re-burial of remains in ossuaries (Majastre 1977; Ariès 1991; Goody and Poppi 1994; Queiroz 2002; Heessels and Venbrux 2009; Bertrand 2015; Dexeus 2015).

The placement of cemeteries under government control effectively secularised the management of burial grounds in large parts of continental Europe, which became administrated by municipalities as perpetual or temporary concessions in both countries of Orthodox (O'Rourke 2007; Eliopoulos *et al.* 2011) and Catholic tradition (Catroga 1999; Figueiredo 2006; Cabaço 2009; Pezzini 2010; Vidor 2012; Bertrand 2015; Samelo 2016). Temporary burial, exhumation and reburial understood as a component of the mortuary ritual is perhaps best documented ethnographically for the Orthodox tradition in Greece (Dubisch 1989; O'Rourke 2007; Tzortzopoulou-Gregory 2010; Blagojević 2013). In comparison, similar ethnographic accounts are practically absent for Catholic southern Europe and are only mentioned in passing or given only limited attention (Pardo 1989; Boissavit-Camus and Zadora-Rio 1996; Musgrave 1997; Bertrand 2000, 2015; Fornaciari *et al.* 2010; Pezzini 2010; Vidor 2012). Similar ethnographic accounts are also generally absent from Latin America (O'Neill 2012; Picanço and Essensfelder 2015). There are certainly national and regional differences in mortuary ritual, cemetery operation and specific legislation, as well as in the practices of grave reuse, exhumation and the management of secondary interments. What is common to all of the cemetery-derived collections, though, is that access to skeletons for the amassing of research collections by museums and universities in Europe and the Americas has been facilitated by secular institutions such as municipalities, through disposition of unclaimed remains in temporary/leased burials by cemetery authorities. All cemetery-based collections are accessioned from managed cemeteries under agreements with various municipal and state authorities that oversee the management of these spaces.

The case of Portugal illustrates the process by which mortuary ritual and cemetery regulations facilitate the amassing of unclaimed remains for collections. Although the details described below are specific to one country, the general principles and practices also apply to other Catholic countries with similar laws and traditions. In Portugal, Napoleonic reforms were enacted in the 1835 legislation (*Diário do Governo*, of 21 September), which mandated the construction of municipal cemeteries outside towns. These were built with temporary and permanent burial concessions, as well as primary and secondary burial plots. In many Portuguese urban cemeteries, permanent burial plots can be purchased but temporary grave concessions are a large component of available burial space. Each temporary grave provides burial for a single body for a period of three to five years. This period can be extended if the remains are not fully skeletonised once the grave is opened for exhumation. At the end of the concession period, the family is notified, and the skeletonised remains of the decedent are exhumed for a fee. If the exhumed remains are claimed, the family can have them cremated or placed



in an ossuary (*ossário*), where remains are kept in small urns or coffins in individualised compartments/niches. These secondary burial spaces can be purchased permanently, but more commonly they are leased as temporary concessions ranging from a period of one to 50 years, and renewable for as long as the family wishes – unlike the temporary primary burial plots, which have a fixed term no-renewable concession. Much like traditional burial plots, ossuaries are places of memory and worship, and are usually kept and cared for by families over many years or decades.

However, if remains are unclaimed by relatives at the time of exhumation from the primary temporary burial, they will be deemed by cemetery authorities to be abandoned. This is also the case if the lease for an ossuary comes to its term and it is not renewed. However, this designation is not made before multiple notifications are sent to the family over a period of many months or years, and eventually as a last measure the cemeteries will publish notices in the local newspapers alerting families to pending renewal of leases or fees owed. If relatives and family still fail to claim the remains and/or pay the fees, the remains are then cleared to provide space for new interments. Unclaimed remains are first stored and then incinerated, after which the ashes are deposited in a columbarium. Before 1998, unclaimed remains were reburied in a communal grave/ossuary, but new legislation has since prohibited this. In practice, it is not lack of payment that triggers the removal of remains from temporal burial locations; rather, it is the need for space for new interments. In many cities, cemeteries have been active for more than 150 years and have little to no space in which to expand. Since burial space cannot be refused to those who cannot afford even temporary concessions, reuse of burial plots is an effective way to address this problem. More recently, however, the increasing popularity of cremation has decreased the turnover of temporary graves and the pressure over temporary plots (Cabaço 2009).

Portugal's procedures are not exactly the same as those of Spain or Latin American countries, but the traditions are comparable and these are the countries where unclaimed remains in temporary or leased plots are the source for skeletal reference collections in museums and universities (Eliopoulos *et al.* 2007; Lemp *et al.* 2008; Rissech and Steadman 2011; Alemán *et al.* 2012; Bosio *et al.* 2012; Salceda *et al.* 2012; Chi-Keb *et al.* 2013; Belcastro *et al.* 2017; Cattaneo *et al.* 2018). Therefore, in some sense, incorporation into collections has served as a means of disposition of unclaimed remains by cemeteries. In terms of burial tradition and how that intersects with the practice of amassing collections, the differences reside in the details that (1) countries and cemeteries differ in lease duration for temporary or leased burials (from two to 10 years or more), and (2) some collections incorporate unclaimed remains exhumed directly from temporary primary graves, whereas in others they are obtained from unclaimed secondary internments.

Access to unclaimed remains at cemeteries is thus an important first step in the amassing of collections. However, Roman Catholic practices and traditions have also facilitated this practice through the cultural acceptance of contact with, and the disturbance of, human remains from cemeteries and other contexts. In Catholic countries the manipulation and dissection of bodies was already common and practised widely as part of the veneration of the dead (Bynum 1994; Park 1994, 1995; Buklijas 2008; Nafte 2015). Specifically, the Catholic Church established, in parallel with Western medicine, a

distinct tradition of dissection, preservation and display of human remains through the cult of relics or of the remains of martyrs and saints (Park 1994, 1995; Wortley 2006; Walsham 2010; Nafte 2015; Kerner 2018). These relics, which have an intermediary role in establishing a dialogue between the Church and its communities through Mass, feast days, other ceremonies and ordinations, form a vast imagery of human remains and of mummies that is visible in Catholic churches around the world, and, along with later exhumation as a frequent component of burial ritual, this has normalised frequent or prolonged contact with human remains, in comparison with Protestant practices.

Grave turnover and secondary interments were still common in Protestant countries in the early modern period (Holmes 1896; Musgrave 1997; Curvers 2010; Kenzler 2015), and grave reuse has continued in some central and northern European countries, such as the Netherlands (Heessels and Venbrux 2009), Norway (Kerner 2018) and Switzerland (Lopreno 2006). Other examples include the eighteenth-century Assistens cemetery of Copenhagen, Denmark (Anthony 2016), as well as the nineteenth-century Catholic cemetery in Montreal (Watkins 2002), reflecting French culture in Canada. However, in much of the Protestant world such practices have died out, particularly in Western Anglophone countries (Goody and Poppi 1994; Mytum 2003, 2009; Sayer 2011; Raeburn 2012; Boyle 2015; Gade 2015). Burials are expected to be permanent, and the recent dead in particular are to be left undisturbed. Protestants regarded ossuaries and charnel houses as superstitious (Goody and Poppi 1994; Mytum 2003, 2009; Kenzler 2015), but contact with human remains is now generally seen as strange or even abhorrent, and dissection has traditionally been seen as desecration of the body. In addition, there were traditionally different views about the nature of death. For Italians, for instance, death was seen as was a quick and radical separation of the soul from the body, while in England it was perceived as a slow and gradual process (Park 1995; see also Goody and Poppi, 1994). Such differences reflect and impact attitudes towards the disturbance of the dead for scientific purposes, whether for archaeological projects or the amassing of reference collections, even in a less religious age.

Consequently, although graves are reused for new interments in Protestant countries, exhumation in managed cemeteries is understood only as a rare practice that occurs for judiciary or medicolegal reasons, and burial rights are maintained in perpetuity (but see Heessels and Venbrux 2009). These practices contrast with the Catholic tradition. According to St Augustine, exhumation and disassociation of the skeleton are no obstacles to resurrection (*de cura pro mortuis gerenda*), whereas in the Protestant tradition the permanency of burials formally reconciles death with resurrection (Lambert and Walker 2018).

In this context, the contrast with anatomy- or donation-based collections amassed in historically Protestant countries may even be seen as repulsive when considering the history of grave robbing as means of procurement of cadavers for teaching anatomy and dissection, which had a great impact on law in North America and Britain (Richardson 1987, 2006; Hulkower 2016).

Although anatomy- and donation-based collections mostly consist of remains from individuals who were never buried, in countries where this is allowed, legislation ensures the strict regulation of the use of the human body for scientific purposes, and in the

case of donations, the reinterment or cremation of remains after a certain time period. Cemetery-based collections, on the other hand, are typically more loosely regulated by cemetery legislation, which typically does not include specific stipulations about the use of unclaimed remains for research purposes. An exception here is Italy, where legislation is at the foundation of collections such as the one curated at the University of Milan (Cattaneo *et al.* 2018), but more usually the legal framework draws on pre-existing general principles, provisions and practices of the law by analogy, and this is the case with cemetery-based collections in Portugal (Conselho Nacional de Ética para a Ciências da Vida 2015; Cardoso *et al.* 2020).

The adoption of the Napoleonic Code in much of southern Europe, and by expansion its principles in the Spanish and Portuguese colonies in Latin America and the Philippines, also affected access to information about human remains, and this too has also been significant for building collections (for Italy and Greece see Eliopoulos *et al.* 2007; Belcastro *et al.* 2017; Carrara *et al.* 2018; Cattaneo *et al.* 2018; for Latin America see Bosio *et al.* 2012; Salceda *et al.* 2012; Sanabria-Medina *et al.* 2016; Cunha *et al.* 2018). Previously, vital records such as births, marriages and deaths had been under the control of the Roman Catholic Church and governed by canon law (Mousourakis 2015). The Napoleonic Code required a more centralised civil registration, and so introduced a more diligent and standardised method of recording all vital statistics. Although access to information such as sex, age, date and cause of death is today dependent on privacy laws in the various jurisdictions where reference collections are curated, access to such information is less rigid in countries where law is based on a civil code than on common law derived from judicial opinions and court precedents. In common law countries access is often dependent on the personal interest, and disclosing information in records must outweigh the public's interest in maintaining confidentiality (Solove 2002).

The process by which cemetery-derived collections are amassed can also help to explain why there are often differences in the quality of biographic information that is associated with each individual, when compared to anatomy-derived collections. While accuracy as regards cause of death in death records can be questioned in both types of collections, due to reasons that are not related to record keeping (e.g. Maudsley and Williams 1996; Sington and Cottrell 2002), age information in cemetery-derived collections can be considered more reliable than from anatomy-derived collections. The latter incorporate unclaimed remains from hospitals and other poor relief institutions, and previously it was not uncommon for hospital staff to have given an estimated age at death on death certificates (Sharman and Albanese 2018). In cemetery-derived collections, however, age is reported from relatives at the time of death, and although this can also be fraught with issues, there are death and birth records (and other records) in one place from which to draw upon, making it easier to identify and fix problems.

### **An Ethical Framework**

Cemetery-based skeletal reference collections have been studied for decades but, unlike their anatomy- and donation-based counterparts, very little discussion has been generated among either the public or academic circles about their legal and ethical ramifications. While some authors have touched on the subject, only Thomas D. Holland (2015)

has engaged thoroughly with the principles that govern the scientific analysis of human remains in a broad sense. These principles are directly applicable to anatomy- and donation-derived skeletal reference collections, as they incorporate values and codes that are applicable to the use of human cadavers for anatomical or medical research. However, while cemetery-based collections share many ethical concerns with anatomy- or donation-based collections, such as the issue of consent, in many other respects they are more analogous or akin to archaeological collections. Specifically, the process of amassing cemetery-based collections, like archaeological research, effectively disturbs the dead by removing remains from burial. In contrast, human remains in anatomy- or donation-based collections were never buried, nor were they given funerary treatment. On the other hand, there are also archaeological and anatomical/medical ethical debates that are not applicable to skeletal reference collections. This includes, for example, the focus of the medical ethics rationale on bodily integrity and the therapeutic use of body parts or organs, and the more general emphasis of archaeological ethics with the appropriation of indigenous sites and the remains of the long dead. Although much has been written about the ethical dilemmas around the excavation, study and long-term curation of archaeological remains (e.g. Goldstein and Kintigh 1990; Klesert and Powell 1993; Alfonso and Powell 2007), it is perhaps Phillip Walker (2008) who has best laid out the general principles that should guide the work of human osteologists working in archaeological contexts. Drawing from the principles put forward by Holland (2015) and Walker (2008), the following sections discuss three ethical concerns that need to be examined and tentatively reconciled with regards to the amassing, curation and study of skeletal reference collections in general and with cemetery-based collections: (1) consent, (2) dignity and respect and (3) benefits to science and education.

### **Consent**

The desires of individuals incorporated in anatomy- or cemetery-based collections are not usually known. In cases where the next of kin is unknown or where remains have not been claimed, jurisdiction over disposal is handed to the state, through government institutions. This transmission of disposal rights, though, can raise ethical concerns, namely whether the state is justified in using the remains of these individuals for research and teaching purposes without their consent or the consent of their next of kin, thus violating the “right of sepulchre” (Holland 2015). In the case of anatomy-based collections this prevents remains from being buried and receiving funerary treatment, and in the case of cemetery-based collections it results in remains being removed from burial and their funerary context.

In cemetery-derived collections, when consent is transferred to the municipalities, the decision to dispose of the remains is legitimised by their legal mandate to manage the cemeteries and serve the local community. In the case of the Portuguese Constitution, for example, cemeteries are given public interest status because of their contribution to the welfare of the general public (Samelo 2016). The mandate of cemetery authorities is then satisfied by continuously providing space for new interments, thus enabling the exercise of the right of sepulchre of the more recently deceased. This is particularly important because the state – through the municipalities – cannot refuse to bury

individuals, and therefore it is the state's obligation to provide burial space and, thus, dignity to the deceased. Exhumation or disposition of unclaimed remains, therefore, is not just a mere administrative procedure. It then rests in the community – through the municipality, the authority of disposal of the remains – to fulfil that goal. In the case of municipal cemeteries, the manifestation of consent is thus transferred to local communities – through their representatives – in ways that can be seen as similar to those that act upon the disposition of archaeological human remains in many other places.

If exhumation of remains carried out at managed cemeteries and their subsequent amassing by institutions is understood as an unlawful cessation of burial rights, then this concern must also be articulated in the context of all human remains retrieved archaeologically. This is particularly true in countries of Catholic tradition where there has not been a change in doctrine and funerary traditions as occurred in countries which experienced the Reformation. Such is the case of the UK, for example, where ethical and legal conflicts have arisen around the retention or reburial of post-medieval or post-Reformation archaeological remains (Mays 2005; Boyle 2015; Renshaw and Powers 2016), in contrast with the less problematic issue of remains retrieved from pre-Reformation Christian sites. Similar concerns about cessation of burial rights have been raised relative to a distinct set of cemetery-derived reference collections comprised of archaeologically excavated skeletons from early modern burial sites or crypts in Protestant Europe and North America, where the individuals are subsequently identified through coffin plates and church records. This includes the Spitalfields (Molleson *et al.* 1993), St. Bride's (Scheuer and Bowman 1995) and Bethnal Green (Ives and Humphrey 2017) collections in the UK, the Middenbeemster collection in the Netherlands (Palmer 2012; Ziesemer 2013), and the – now re-interred – St. Thomas collection in Belleville, Canada (Saunders *et al.* 1995). On the other hand, because cemetery-derived collections – regardless of how they were developed or under which religious tradition – disturb the dead in the same way as archaeological research, the issue of posthumous harm can or should be addressed in the context of archaeological ethics and under dignity and respect towards remains (see below).

In addition to the lack of explicit consent, doubts have also emerged in Portugal about whether the remains that are incorporated in cemetery collections have legitimately been considered unclaimed or abandoned (Alves Cardoso 2014a, 2014b) and thus whether their disposition by the cemeteries is causing unduly posthumous harm to decedents and their kin. One reason for this suspicion is that the unclaimed may represent a poor and marginalised segment of society, lacking autonomy over their lives (and final resting place after death) and thus without the opportunity or the option to exercise their rights. Specifically, concerns have been raised by Alves Cardoso (2014a, 2014b) about whether cemeteries in Portugal have done everything in their power to reach out to families before remains are deemed unclaimed and cremated. However, while she discusses incorporation of unclaimed remains in cemetery collections, her emphasis seems to be on consent about removal of remains from primary and secondary burial by cemetery authorities, rather than consent about their subsequent use for scientific purposes. In this respect, it would also be interesting to ponder whether cemeteries are justified in using cremation as a means of disposing of unclaimed human remains. Cremation is

a very recent type of disposal: traditionally, it has been considered abhorrent by the Catholic Church and some minority groups. Consequently, it is possible that cremation in some cases goes against the wishes of some decedents or their relatives.

The issue of whether individuals and families have had the opportunity to exercise their rights also raises the question of how and whether socioeconomic inequalities may affect families' ability to pay cemetery fees for secondary interments or to purchase perpetual burial plots. The notion that skeletal reference collections, by incorporating the unclaimed, target the poor, and embody poverty and inequality, is at the root of ethical discussions about anatomy-based collections. The unclaimed bodies of poor, immigrant, criminal and indigent individuals were sent to medical schools in the early twentieth century for dissection rather than buried at the expense of taxpayers, and some eventually were incorporated in anatomy-derived collections (Ginter 2008; De La Cova 2011; Nystrom 2014; Muller *et al.* 2017). This means that because dissection and subsequent incorporation in collections were firmly secured within a politically and economically sanctioned structure which targeted the poor to provide training material for the medical elite, anatomy-derived collections represent a form of imposed violence on the poor that is extended after death (De La Cova 2011; Muller *et al.* 2017).

Ethical concerns with anatomy-based collections are further heightened because dissection and body snatching were seen and institutionally sanctioned as ways to punish criminals or discriminate against the poor in North America and Britain. The reason why the use of the word "unclaimed" (or abandoned) with reference to cemetery collections may be considered offensive or insulting rests precisely on the meaning and history of the word as representing discrimination against the bodies of the powerless that were used for dissection and incorporation in anatomy-based collections. While previous to the 1832 Anatomy Act in England and Wales all social classes were at risk of clandestine exhumation for dissection, this legislation was enacted in response to the public outcry about illegal trade in corpses, but also to create a source of the dead from the unclaimed in hospitals, prisons and poor or workhouses (Richardson 1987, 2006). In contrast, body snatching was considered to be less common in continental Europe, and there was less concern over the issue (Park 1994). In addition, dissection was less ethically charged because of an old Roman legal principle that "the crime ends with death" (Buklijas 2008), meaning that dissection was less associated with a further posthumous "punishment" for criminals, and due to the dead body being perceived as being emptied of personhood (Park 1995, 2006). Consequently, the concept of the unclaimed in cemetery-based collections has a much less ethically charged history.

However, although in some collections it is clear that burial plots reserved for the poor were the target (e.g. Belcastro *et al.* 2017), and that temporary/leased concessions will likely include the majority of the poor, it is unclear whether the option of a temporary, rather than a permanent, grave is strictly economic (Vanderbyl *et al.* 2020). There are also reasons other than financial why graves become abandoned. In fact, loss of close kin over the years or decades and other social phenomena of emotional disconnection between families and their deceased are possibly the main factor behind the abandonment of graves and ossuaries (Sousa 1994; Xisto 2012). Xisto (2012), for example, describes the duty to maintain graves or ossuaries as being burdensome for families,



so that ties are lost, and relatives stop visiting cemeteries and attending graves. These issues are common in the cemeteries of major cities, due to issues of migration and social isolation, as well as relaxation or loss of religious norms and traditions. Further, even in those cases where burial practices are affected by socioeconomic conditions of the individual or of his/her family, these may be contingent on the time of death and do not necessarily indicate life-long poverty (Hunt and Albanese 2005; Vanderbyl *et al.* 2020).

As a point of contrast, although visiting the graves of relatives remains a duty in many traditionally Protestant countries, the perpetual nature of the burials by no means suggests that graves are permanently cared for, or that they are not also abandoned or neglected by families and next of kin (Goody and Poppi 1994; Harvey 2006; Strange 2003; Anthony 2016). For example, Anthony (2016) describes the case of cemeteries in Denmark, where 80% of the graves in managed cemeteries are abandoned. In such cases, relatives are either deceased, have moved away from the area of the burial, or for a variety of reasons, no longer take responsibility for caring for their relatives' graves. Often these abandoned plots represent the end of generational continuity (Francis *et al.* 2000).

Depending on the jurisdictions, the issue of consent is expressed in the law, at least to some extent. As discussed above, the use of dissection as part of the punishment imposed on criminals and resorting to body snatching and grave robbing to obtain cadavers had a great impact on North American and British legislation, under which bodies cannot be used for organ transplant or donated to science unless consent is given by the living individual (or parents in the case of children). In contrast, several European countries have a system where consent is assumed unless an individual opts out (McHanwell *et al.* 2008). Although occurring in a generally *post hoc* process, cemetery-derived collections can thus address the issue of consent by confirming whether individuals being sourced from cemeteries have opted out of donation programs. Portugal, for example, has an opt-out body and organ donation system created in 1994 (National Registry for Non-Donors – RENNDA), whereby researchers can identify individuals who have objected to the donation of their remains for research. Because new skeletal reference collections in Portugal can include the remains of the very recently deceased (e.g. Escoval 2016; Ferreira *et al.* 2014; Cardoso *et al.* 2020), this should be a concern of all curators in support of ethically sourced material.

Tied to the issue of consent is the more general concern regarding reburial of collections – including archaeological – and whether biological anthropologists are justified in curating human remains *in aeternum* when there was no explicit or expressed consent. While existing legislation can address these concerns partly – such as the case of body, organ and tissue donation in Portugal referred to above – this will perhaps also rely on the balance between the dignity and respect that must be given to human remains in collections and the benefits they can provide to societies. This is where agreements between the different stakeholders – communities and scientists – can be an essential instrument for disposition or curation. Transference or donation of human remains from cemeteries to research institutions and museums is not equivalent to individuals donating their remains for research and education purposes (or their organs for transplant). Therefore, in the absence of consent from the individual or family, the stewardship of cemetery-based collections under these agreements is also perhaps better framed as

that of archaeological human remains as generally outlined by Joyce (2002) and others. Specifically, rather than claiming ownership of remains, scientists share the responsibility of their stewardship.

At the end of this section it is important to make an important distinction between cemetery-derived collections amassed in Europe and in Latin America. While disposition of unclaimed remains from cemeteries can be said to rest in local descent communities, and community engagement projects enact that authority and address issues of consent, these communities can be quite distinct. Because of the recent colonial past, descent communities in America include settlers and indigenous communities. To complicate matters further, settler nations also include different settler groups with very different histories, such as African-American communities descended from slaves or recent immigrants. To avoid the perpetuation of colonial wrongs, settler and indigenous communities are working together and sharing authority, resolving conflict and taking control over the disposition of the remains of their own ancestors. This concern is similar to ethical considerations about the archaeological disturbance of indigenous and settler sites in North America (Ubelaker and Grant 1989; Scott 1996; Colwell and Nash 2015; Nicholas *et al.* 2010) and Latin America (Scaramelli and Scaramelli 2014; Overholtzer and Argueta 2018), with often quite different outcomes. For example, in contrast with the US or Canada, in Mexico the cultural relationship with the dead – which stems partially from and intersects with Catholic traditions – and the symbolic nature of bones has led to a decolonisation of archaeology through the celebration of indigenous culture that involves the desired display of human remains (Overholtzer and Argueta 2018). Similarly, the cultural legacy of the Catholic church, such as the display of relics of saints and martyrs, has prompted the development of museums of mummies in Mexico where the recently deceased are exhibited (Caballo 2005). This stands in stark contrast with traditionally Protestant countries and their colonies, where displays of the dead are generally unacceptable, or at least much more ethically charged.

Much has been written and said about decolonising archaeology and the repatriation of indigenous human remains in the Anglophone world, and it is beyond the purpose of this paper to dedicate any significant space to its discussion here. It is important, nonetheless, to emphasise the intersection between the Catholic Church and local indigenous practices in Latin America, which have resulted in a different ethical debate (Overholtzer and Argueta 2018). Despite broad social contexts (e.g. Trigger 2008) and the many geographical variations associated with this debate (e.g. Hitchcock 2002), in the end the same principle applies to both archaeological and contemporary cemetery remains, in that authority over their disposition rests with the direct descent community, whether it is indigenous, settler or immigrant. While there a firm belief that human remains collected without the consent of the individual or his/her family or community should be repatriated or destroyed, it is also important to highlight that the issue of consent is also historically and culturally situated.

### ***Dignity and Respect***

In addition to the issue of consent and exploitation of unclaimed remains for amassing collections, their disturbance can be considered harmful when perceived as undignifying

and disrespectful. Because disposition of unclaimed remains from cemeteries rests in the local descent communities, as represented by the municipalities, skeletal reference collections provide a unique opportunity to connect research and curation with social involvement and impacts. Because this engagement can successfully address communities' concerns and interests, such projects are important manifestations of respect towards human remains amassed in cemetery-based reference collections. To the best of the authors' knowledge, no community engagement projects have been undertaken in Portugal led by institutions housing skeletal reference collections, including the years during which the author curated the collection at the National Museum of Natural History and Science in Lisbon (Cardoso 2006). Although incompletely realised, the exception is perhaps the BoneMedLeg cemetery collection, which was amassed in partnership with the Municipality of Porto, and included community engagement and outreach activities as part of the agreement (Cardoso *et al.* 2020). On the other hand, harm is not reducible to communities, but to the dead themselves as the living persons they once were (Scarre 2003, 2006). Of course, this is not unique to reference collections, but dignity and respect can be manifested in many ways.

One of the many ways to express respect, and the most relevant to reference collections, is perhaps the duty not to unduly or maliciously violate the privacy of personal information (Holland 2015). This right to privacy is not often given very much attention (but see Bosio *et al.* 2012 and Renshaw and Powers 2016 for examples of expressed concerns about privacy in the Catholic and Protestant tradition, respectively), presumably because personal identifiers, such as the name or the address of the individuals, are kept separate from other more research-relevant information or are restricted access. Although this may not always be the case, researchers should be increasingly concerned with keeping databases free of personal identifiers and providing researchers with information secure and/or anonymised.

Another way to manifest respect and preserve the dignity of the individual is through increased scrutiny of research involving human remains in general, and skeletal reference collections in particular, by ethics committees. For example, the work of biological anthropologists in Portugal and in other European countries seems yet to be scrutinised systematically by ethics reviews (see papers in Marquez-Grant and Fibiger 2011). Although current biomedical based regulatory models of ethics committees may be ill-suited to social anthropology research (e.g. Roriz and Padez 2017), in principle there is no reason why biological anthropology cannot benefit from such scrutiny. For example, García-Mancuso (2014) reports how access to the collection at the Universidad Nacional de La Plata, in Argentina, requires ethics approvals from the bioethics committee. This applies particularly to forensic anthropology (and to a certain extent for biological anthropologists who work with human remains), whose sister discipline – forensic pathology – has already been under scrutiny by biomedical ethics commissions for years. These ethics reviews are important to ensure that remains are treated with respect and are not handled improperly, unjustifiably subjected to destructive analysis, used for dubious research purposes or misrepresented in any way.

These concerns can be particularly acute in the case of reference collections that include the recently deceased, as is currently the case in many new cemetery-derived

collections. The issue of representation (see for example Passalacqua *et al.* 2014; Scarre 2003) is important, as it can be undignifying and disrespectful (or perceived to be), but this is often overlooked, as the examples below illustrate. The use of certain titles for research studies, papers or presentations can be considered disrespectful or offensive, and their choice and use deserve some reflection. This is the case, for example, of the titles used by Gonçalves and co-workers on a series of papers (Gonçalves 2013; Gonçalves *et al.* 2018; Vassalo *et al.* 2019) to describe their experimental study with bone burning using the new Coimbra collection. Another example is the online tool created by the Forensic Anthropology Laboratory at the University of Coimbra, which is titled “Crania Playground”.<sup>1</sup> The playful suggestion of the project’s title may raise concerns about the treatment of remains as possibly being disrespectful, particularly because the educational value of the 3D images provided is not made clear. Similar concerns can be raised by the 3D images of recent crania provided through the online digital database of the National Museum of Natural History and Science in Lisbon.<sup>2</sup> The issue is not with the quality of the research, or of an intention to be disrespectful, as the projects and their titles were probably geared towards attracting greater interest. However, due to the particularly sensitive nature of identified remains, specifically the fact that they are so recent, and the various other legal and moral/ethical issues that arise around them, it is important to be careful in how research with these collections is portrayed.

Much information can be gleaned from skeletal remains, but access to it sometimes requires the destruction of specimens. The principles of respect and dignity can conflict with this type of analysis, and a lack of discussion and reflection about the extent to which biological anthropologists feel justified in destroying skeletal material for research purposes demands strict and thorough ethical reviews. Although the concern applies to any skeletal collection, in this example the research involves a cemetery-derived reference collection. Gonçalves and co-workers (Makhoul *et al.* 2015; Gonçalves *et al.* 2018; Vassalo *et al.* 2019), whose research project was already mentioned, are carrying out a large-scale experiment where a sample of skeletons from the new skeletal reference collection in Coimbra is experimentally burned. Half of each skeleton is burned and the other half is left unaltered to determine the effects of fire and heat on the dimensions and physical integrity of bone (Makhoul *et al.* 2015; Gonçalves *et al.* 2018; Vassalo *et al.* 2019). It is not the merit of the team or of the research that is in question – experimental studies are important for a variety of archaeological and forensic applications – but rather that such an unmatched destruction is perhaps insufficiently justified, or can be perceived as unjustified. In addition, it sets perhaps a very unusual precedent. This is particularly worrisome given the unique nature of reference collections, their rarity and the various international recommendations pertaining to skeletal collections. These specify that destructive analysis should be treated as exceptional, restricted to a minimum amount of material, and it should be ensured that such activities are not detrimental to the long-term survival of the studied material (Ahrndt *et al.* 2013; ICOM 2013a). Following such provisions clearly demonstrates dignity and respect towards human remains.

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1. <http://fa.uc.pt/the-collection/crania-playground/>

2. <http://digital.museus.ul.pt/collections/show/30>

Another way by which respect or dignity is demonstrated is by proper curation, use and display of human remains. This is not unique to skeletal reference collections, but their more sensitive nature may warrant additional precautions. As well as the aforementioned privacy precautions and safeguards as regards destructive analysis, several museum and professional groups standards provide recommendations about proper storage and conservation conditions for human skeletal collections that should be applied to cemetery-derived reference collections (Mays 2005; Ahrndt *et al.* 2013; ICOM 2013a). Unfortunately, however, museums and academic institutions are often faced with financial difficulties that prevent them from meeting ideal conditions.

Other important considerations include clear policies, outlining information about regulations in terms of access request for research, use for educational purposes, data collection, use of digital imagery, dissemination of results, intellectual property and resolution of conflict. Although one may be inclined to develop a set of rules and/or ethical guidelines for the specific use of skeletal reference collections, the effort might be better directed at developing rules or guidelines for all types of human remains, with perhaps specific provisions for remains with certain specificities such as reference collections or fossil specimens. Although such documents have been generated and made public by a number of institutions in the UK (Mays 2005) or Germany (Ahrndt *et al.* 2013), they have been lacking in Portugal and other parts of Europe.

### **Value to Science, Education and Society**

Holland's (2015) and Walker's (2008) guidelines, referenced above, directly address the principles laid out by the Vermillion Accord on Human Remains (1989), namely regarding respect for the wishes of the dead, their communities, relatives or guardians, on one hand, and the scientific and educational value of human remains on the other. Perhaps more importantly, they agree that conflicts resulting from the disposition of human remains should be negotiated and expressed in agreements that respect the concerns of the communities and of scientists.

Amassing, curation and analysis of human remains, therefore, rests on a balance between or resolving conflicts that arise from those two principles: on one hand, the legitimate needs of scholarly research and education, and their role in providing public service to the local and broader community; and on the other, the duty to respect the individuals represented by their skeletal remains, particularly the authority of the next of kin or of the descent community to perform a ceremonious and decent disposal of the remains, and the last known desire of the deceased. Similar considerations are already part of what scientists do when development and construction work involve destroying archaeological sites where human remains are present.

Because skeletal reference collections should serve the local and global communities, through engagement and communication of the products of scientific inquiry, there is a set of additional ethical concerns that highlight the responsibility of scientists when undertaking scientific research. One such responsibility is the duty of long-term preservation and conservation of collections, which ensures that future generations of biological anthropologists, archaeologists and communities can benefit from the products of their

study. Tied to this responsibility is ensuring that these collections are created to be and remain widely accessible to the research community (Bowron 2003; Bosio *et al.* 2012).

As curators of collections, biological anthropologists have the ethical responsibilities of curation and conservation of human remains and making them available for research and training (Bowron 2003; Cassman *et al.* 2007). However, a natural conflict often arises between the responsibilities of biological anthropologists as researchers and as curators. This conflict is often exacerbated by institutions' own financial and structural limitations, which require them to resort to researcher-curators for the care of their collections. Researcher-curators are usually university professors or other full-time research staff whose main obligation is to teach and/or carry out research. Although full time curators can also be involved in research, this is often related to conservation and/or curatorial aspects of the collections under their care, and they typically do not have a research programme outside the scope of collections, their care and their management.

With researchers-curators who have a specific research program there is a potential and/or perceived conflict of interest that can damage the public image of institutions and raise ethical concerns. For example, the review of access requests needs to be carried out with the utmost rigour and impartiality to avoid raising concerns of intellectual property theft. Potential or perceived overlaps between the goals of an outside project submitted for review and that of an undisclosed ongoing or new project being implemented by the researcher-curator and his/her students are to be avoided. Similar problems can arise from guest curators who may have only a marginal interest in serving and protecting the institution and the public good, but a greater interest in personal gain from accessing a specific understudied collection. Ideally, of course, the role of the curator and the researcher should be kept separate, but this is not always possible. This, however, should not be a justification for unethical and unprofessional behaviour and practices.

These issues are particularly important in light of museums' and research institutions' accountability to the public and ICOM recommendations that human remains held in natural history museums should be considered in a context of custodianship or stewardship, rather than as the sole property of the institution in which the material resides (ICOM 2013b). These considerations are heightened by the nature of skeletal reference collections. Because of the interests and concerns that communities and the public may express about the incorporation of the recent dead in cemetery-based collections, their stewardship has much in common with that of archaeological collections (see Joyce 2002). In this sense, curators do not hold ownership of the collections or the right to carry out research. Instead, their stewardship stands on the privilege and responsibility to maintain, conserve and provide access to collections, subjected to negotiations with stakeholders.

## Conclusion

Skeletal reference collections are a unique scientific and cultural resource for biological anthropologists, particularly those specialising in the human skeleton. The continuing and increasing study of old reference collections (Albanese 2003, 2018; Komar and Grivas 2008; Cardoso and Marinho 2016; Muller *et al.* 2017) and the amassing of new



series is evidence of the scientific significance of this resource (Komar and Grivas 2008; Shirley *et al.* 2011; Alemán *et al.* 2012; Bosio *et al.* 2012; Martinez 2013; Edgar and Rautman 2014; Go *et al.* 2017; Sanabria-Medina *et al.* 2016). The amassing, study and long-term conservation of these collections has occurred within two large and distinct traditions: (1) that of anatomy- and donated-derived collections in traditionally Protestant countries, particularly within the Anglophone world, and (2) that of cemetery-derived collections in traditionally Roman Catholic countries, particularly in mainland western and southern Europe and Latin America. Because of the different traditions, the study of these collections should be framed and understood within their specific historical and cultural circumstances, in order to maximise the research outputs and the societal impacts and returns of that research. In addition, some of the ethical issues raised about the amassing, study and curation of skeletal reference collections is specific to each tradition – and even to different contexts within the same tradition – and need to be addressed properly in their own framework, which will assist researchers in engaging in ethical and professional behaviour. For example, the principle of consent as a historically and culturally determined category is now acknowledged in ethical debates about anatomical collections (Claes and Deblon 2018). These debates can only benefit our understanding of cemetery collections as well.

Perhaps one of the most significant issues that requires proper contextualisation is related to structural violence and consent, and whether it is morally right or justifiable to use the remains of the unclaimed for scientific purposes. In this respect, anatomy- and cemetery-based collections are significantly different, and it is paramount that the discussion of such ethical issues be framed appropriately to the cultural, historical and even political context (Vanderbyl *et al.* 2020). Although further investigation into this topic is needed, it is dangerous to assume that anatomy- and cemetery-based collections are similar and to draw universal moral conclusions. On the other hand, though, as the scientific use of unclaimed remains raises issues of structural violence and the perpetuation of marginalisation and poverty, it is important to consider that this use also provides a unique opportunity and also perhaps moral obligation to document the violence inflicted on marginalised and poor individuals neglected by society, thus giving them a voice they did not have in life (Zuckerman *et al.* 2014; Ion 2016). Recent examples here include works by De La Cova (2011), Nystrom (2014) and Watkins and Muller (2015), Muller *et al.* (2017) and Halliday (2019) with North American anatomy-based collections. Similar examples are also found for cemetery-based collections in works by Cardoso (2005), Cardoso and Garcia (2009), MacCord (2009), Holland (2013), Amoroso *et al.* (2014), Alves Cardoso *et al.* (2016) and Reedy (2017), which have provided key information often absent from written sources about the impacts of poverty and inequality on growth and development, and on the premature mortality of early twentieth-century populations. These collections are uniquely positioned to explore these and other similar questions, and their study can provide an additional ethical justification for research on cemetery human remains.

Despite the differences between anatomy- and cemetery-based collections, it is interesting to note that conflict situations arising from different contexts can reach similar compromises. This is illustrated when reconciling burial rights with the use of human

remains for research purposes in the Protestant and Catholic traditions is done by curating collections in the cemeteries (e.g. the Buenos Aires collection in Argentina – Bosio *et al.* 2012) or crypts (e.g. the St. Bride's collection in England – Scheuer and Bowman 1995) from where they were initially buried. Similar solutions have been negotiated for archaeological remains that are as recent as many of the cemetery-based collections (see, for example, Anson and Henneberg 2004). A different form of reconciling these principles is to rebury the remains after they have been studied for some time, as is the practice of the Odyssey Field School in Limassol, Cyprus.

North America has experienced a change in perceptions, attitudes and legislation in recent decades towards the scientific use of the dead body, where anatomy-based collections are giving way to donation-based collections. In contrast, in southern Europe and Latin America there has been little change. A good piece of evidence for that lack of change in perceptions, attitudes and legislation is that collections are still being curated and developed in this part of the world and at a seemingly fast pace (Alemán *et al.* 2012; Ferreira *et al.* 2014; Belcastro *et al.* 2017; Cattaneo *et al.* 2018; Cardoso *et al.* 2020), suggesting that, if anything, a change has occurred that actually encourages amassing collections. This does not mean, however, that curators and researchers in charge of cemetery-based collections are not concerned about or sensitive to ethics or legislation and changing attitudes towards the scientific use of the dead body.

Scientific and social considerations about the amassing, study and long-term care of reference collections are especially problematic, because they are uniquely positioned between the biomedical sciences and their ethical focus on generating scientific knowledge for use in helping to improve the health and well-being of individuals and societies, and anthropology with its ethical principles stemming from a strong belief in the power of cultural relativism to overcome ethnocentrism and encourage tolerance (Lambert and Walker 2018). Cemetery reference collections, in particular, are at the crossroads between cultural heritage management and biomedical research, and there are a number of ethical, moral and professional conduct and practice issues that form the basis for new or revived discussions. Chief among them is probably the issue of consent – if individuals had no objections, the moral picture would be simpler. However, once these collections are recognised as undeniable scientific and/or educational assets and a unique heritage resource by the local communities, their rarity becomes part of their uniqueness. As such, reaping the benefits of their study and taking responsibility for their conservation should also be wisely and respectably shared among the local and global communities.

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