



Ethics and Practice in the Excavation, Examination, Analysis, and Preservation of Historical Mummified Human Remains

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Abstract European perspectives on the study of human remains, particularly mummified individuals with associated material culture, highlight the multidisciplinary research potential of these rare discoveries. The diverse evidence associated with mummified remains offers unique potential to consider how the deceased was experienced over time. Scientific analyses reveal the complex taphonomic processes leading to the selective survival of tissue and cultural items. Medical approaches to mummies have been long established, but historical examples can combine cultural and historical sources with the palaeopathological to develop more nuanced understandings of disease and lifestyle, identifying both individual biographies and wider cultural trends in mortuary practice. Study of mummies raises ethical considerations similar to those for skeletonized remains, but given the greater recognition of their humanity, further social and religious considerations are relevant. Investigation needs to be set against the local legislation and the feelings of the mummies' gatekeepers and, in some cases, their descendant communities.

Extracto Las perspectivas europeas sobre el estudio de restos humanos, particularmente los individuos momificados con cultura material asociada, destacan el potencial de investigación multidisciplinaria de estos

descubrimientos poco comunes. La diversa evidencia asociada con los restos momificados ofrece un potencial único para considerar cómo se experimentó al difunto a lo largo del tiempo. Los análisis científicos revelan los complejos procesos tafonómicos que conducen a la supervivencia selectiva de tejidos y elementos culturales. Los enfoques médicos acerca de las momias se han establecido desde hace mucho tiempo, pero los ejemplos históricos pueden combinar fuentes culturales e históricas con las paleopatológicas para desarrollar una comprensión más matizada de enfermedades y estilo de vida, identificando tanto biografías individuales como tendencias culturales más amplias en la práctica mortuoria. El estudio de las momias plantea consideraciones éticas similares a las de los restos esqueletizados, pero dado el mayor reconocimiento de su humanidad, son relevantes otras consideraciones sociales y religiosas. La investigación debe considerar la legislación local y los sentimientos de los guardianes de las momias y, en algunos casos, de sus comunidades descendientes.

Résumé Les points de vue européens sur l'étude des restes humains, en particulier les individus momifiés avec une culture matérielle connexe, mettent l'accent sur le potentiel de recherche multidisciplinaire de ces découvertes rares. Les preuves variées associées aux restes momifiés offrent un potentiel unique afin d'examiner comment l'expérience relative aux défunts a évolué au cours du temps. Les analyses scientifiques révèlent les processus taphonomiques complexes conduisant à une survie sélective de tissus et d'objets

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culturels. Les approches médicales des momies sont établies de longue date, mais les exemples historiques peuvent combiner des sources culturelles et historiques au paléopathologique afin de développer une compréhension plus nuancée de la maladie et du mode de vie, en identifiant les biographies individuelles mais aussi les tendances culturelles plus vastes dans la pratique mortuaire. L'étude des momies soulève des considérations éthiques qui sont similaires à celles concernant les restes de squelettes, mais étant donné la reconnaissance accrue de leur humanité, des considérations supplémentaires de nature sociale et religieuse sont pertinentes. La recherche doit tenir compte de la législation locale et des sentiments des gardiens des momies et, dans certains cas, de leurs communautés de descendants.

Keywords human remains · mummies · ethics

Introduction

Human remains present unique challenges for historical archaeologists, in both ethical and practical ways, because of the cultural expectations in society at large and particularly of the gatekeepers of many of the places where such remains may be found. This applies to all human remains, but some of the emotive and symbolic associations with mummified remains create even greater ambivalence. These concerns range from health risks from surviving soft tissue through to religious associations with sanctity because of the uncorrupted flesh. Moreover, some of the mummies can be identified as named individuals with living descendants who may also have justifiable interest in the treatment of the remains. Mummified remains are relatively rare and present conservation and management challenges, together with ethical decisions regarding analysis, that require the taking of samples or movement of remains for study, which may have long-term taphonomic implications. The articles here consider not only the human remains, but the associated finds that may also be unusually well preserved. These throw light on the mortuary process and, to varying degrees, wider past cultural practices and attitudes. Numerous studies have been conducted on historical mummified remains and associated material culture, creating a knowledge base on disease, lifeways, and items associated with the mortuary process. Whilst there are distinctive traditions of

research linked to ancient Egyptian or Andean mummies, for example, the references in this article only relate to the historical period.

Experiencing the Deceased

Skeletal human remains, even fully articulated, are sufficiently foreign in their appearance to create a distance between the deceased person and the living viewer. Many archaeologists have excavated skeletons, but have never seen a recently deceased person. These experiences are completely different because of the way people empathize with each other, using facial features, stature, clothing, and hair style to recognize the identity of another person. The skeleton has none of these. Archaeologists still must consider skeletal remains as those of deceased people—they are not mere scientific samples (see the discussion of ethics, below)—but frequently there are employed protocols for the excavation, recording, and analysis of such remains that emotionally distance the investigator from the deceased person.

The issues of empathy and emotional reaction are of a completely different order of magnitude, however, when considering mummified remains (Cox 1998; Boyle 1999). Here the recognition of a person once alive, albeit potentially from centuries before, creates a relationship that is powerful not only for scientific investigators, but also for gatekeepers, such as church authorities or descendant groups. The presence of clothing, other textiles, and artifacts rarely found in skeletonized graves, such as wooden and leather items, further reinforces the close parallels between the living and deceased, the present and the past. This is both an opportunity and a responsibility for those privileged to have access to such remains.

Mummified remains provide contextual and associative data that throw light on the post-death biography of the corpse. It is possible to consider how the deceased were experienced in the past—when the individuals died, as they were prepared for burial (Cherryson 2018), as interment took place, and subsequently at intervening points in time between interment and the present, as many mummies have been periodically encountered over time, as with that of Vicar Rungius (Väre et al., this issue).

The bodies also had agency once interred, as Kallio-Seppä and Tranberg (this issue) highlight with reference to early 18th-century Oulu, where under-floor church burial led to the congregation experiencing unpleasant and what were considered unhealthy odors emanating from the beneath their feet. Medical views of the time considered this “miasma” to be a cause of disease (Mytum 1989; Tarlow 2000; Hotz 2001; Kallio-Seppä and Tranberg, this issue), and the use of plant remains within the coffin to mitigate or mask the effects of decay are well-attested archaeologically. The strength of the odors within the church buildings increased as intramural interment became popular over the first decades of the 18th century, though, ironically, the congregations then suffered during services as the many recent burials affected the atmosphere. In Oulu under-floor church burial was stopped in 1769, and church burial was completely prohibited in Finland in 1822 (Kallio-Seppä and Tranberg, this issue), but in many other European countries this was only achieved at a later date. Burial within churches was finally prohibited in England from the 1840s onwards, and many urban burial grounds were closed over the same period. This, as in Finland, was part of a wider concern regarding health implications of urban life, of which burial traditions were just one component.

Historical mummies are also sometimes on display to the wider public, most often in religious contexts, but occasionally in secular museums; the latter are often treated in the same way as prehistoric or Egyptian mummies. Mummy exhibitions have recently received considerable attention regarding the ethics of display, and visibility of historical mummies is discussed further below (see “Ethics”).

Scientific Opportunities

The ways in which mummified remains have been scientifically approached have been from one of three perspectives: taphonomic, medical, and cultural. These each display a distinct range of techniques and often involve scholars from widely divergent academic traditions, but gradually there has emerged an appreciation that studies of mummies benefit from a multidisciplinary approach, as is the case with the articles published here.

Taphonomy

The deceased was interred in the past either in an earth-cut grave or within a stone- or brick-built crypt or tomb (Litten 1985, 1999; Association of Diocesan and Cathedral Archaeologists 2010). Both forms could be outside or within a church building. Those environments that have remained permanently dry have a possibility of mummification, and these have been more commonly encountered beneath church buildings than in burial grounds, though examples from the latter are known. Such environments also offer opportunities for excellent survival of coffins and their fittings and the grave structures, as well as human remains (Mytum and Burgess 2018b).

Mummies immediately draw attention to taphonomic processes because of their distinctive level of preservation (Piombino-Mascali, Gill-Frerking et al. 2017). They raise questions of why they survive (often when nearby interments have not survived in a similar state) and why and how the human remains and associated cultural items have often experienced very different taphonomic trajectories (Garland and Janaway 1989; Nawrocki 1995; Janaway 2002). In some Polish contexts, silk textiles survived to a much greater extent than other fabrics, for example (Grupa, Majorek et al. 2014; Grupa, Kozłowski, Jankauskas et al. 2015; Grupa, Kozłowski, Krajewska et al. 2015). This variety is highlighted by Lipkin, Ruhl et al. (this issue) with regard to textile survival compared with that of human skeletal or soft-tissue remains.

Survival is also affected by body treatment and the length of time and location of display of the body before interment. This affects the degree of decay that has taken place in an exposed environment before the coffin is sealed and interred to create a distinctive microenvironment. How the body has been dressed and the degree to which bacteria and insect infestation can take place prior to disposal will depend on the cultural practices of the mourning and funeral rituals, and the climate at that time; some burials interred in crypts during the winter when the ground is frozen will have experienced very different conditions from those interred at the height of a hot and humid summer (Lipkin, Ruhl et al., this issue). Korean mummies appear to survive, not through any deliberate process, nor the normal arid or permafrost burial conditions, but because the lime/soil mixture barrier placed around the wooden coffin formed a sealant, creating a microenvironment within which decomposition was halted (I. Lee, E.-J. Lee et al. 2009:310).

Some of the Sicilian mummies, particularly those of more recent date, exhibit deliberate attempts at enhancing preservation. In some cases embalming techniques have been applied, and in others structural features enabled bodily fluids to flow away and so encouraged mummification. These interventions may lead to complex post-death biographies (Fornaciari et al. 2010; Panzer, Zink et al. 2010). Nevertheless, the main factor in survival in crypts or chapels, based on recent analyses of remains in Palermo, Piraino, Savoca, and Novara di Sicilia, has been the desiccating atmosphere (Piombino-Mascoli, Panzer et al. 2011). A checklist for recording the state of preservation of soft tissue using data from CT scans has been developed using the Palermo mummies (Panzer, Augat et al. 2018).

The coffins of the more affluent classes in Britain often had several layers, called “shells,” and from the later 18th century normally included a lead layer to help preserve the body and limit smells—and the supposed unhygienic miasma—spreading up to the congregation above (Litten 2002; Mytum 2004). It is noteworthy that the Polish and Finnish remains, even of individuals placed in highly prestigious locations and with elaborate grave clothing, were only placed in single-layer wooden coffins, albeit sometimes elaborately decorated. Thus, some well-preserved remains in Britain are due to the effective sealing of the lead coffin, but in many cases there and across Europe it was the desiccating conditions beneath church floors—in either earthen graves or within crypts with circulating air—that created conditions in which mummification was possible.

Medicine

Traditionally, mummies have been investigated by medical researchers, and so their main focus has been on cause of death and the medical conditions that the mummified person had to endure (Pap et al. 1999; Piombino-Mascoli, Kozakaitė et al. 2014; Seiler et al. 2017). X rays can provide information on the skeleton and have been applied extensively in Sicily and Korea (Shin et al. 2003; Piombino-Mascoli, Panzer et al. 2011:27–28), though they can also be used to identify cultural items hidden within textiles (Gostner et al. 2013). Many of the traditional skeletal studies can be achieved through these means. Stable-isotope analysis of dense bone was also undertaken on Sicilian remains (Piombino-Mascoli, Panzer et al. 2011:29).

Recent developments in CT scanning have allowed more extensive noninvasive examination of mummified remains, and this has transformed the subject, as many more cadavers are available in these circumstances. These scans revealed some information in their own right, but further processing of the data creates 3-D virtual-reality images of internal organs that transform the level of interpretation possible without dissection (Lim et al. 2008). Parasites linked to individuals can sometimes be identified with skeletonized remains, but this is more easily achieved with mummies (Pye, this issue). Examples include those from the intestines of the Korean general Gyeongsun, who died in 1622 (I. Lee, E.-J. Lee et al. 2009:317), and an 18th- or 19th-century Palermo mummy infested with whipworm (Kumm et al. 2010).

The survival of tissue offers the opportunity to study mummified skin surfaces, including skin structure (Chang et al. 2006) and any tattoos or other decorative treatments, as well as to record fingerprints. Recent developments in limited physical intervention and rehydration have allowed fingerprinting to be achieved at a high standard (Fields and Kimberley Molina 2008).

Cultural Approaches

Mummified remains reveal many aspects of the culture in which the individual lived and died. These can be considered at both the scale of the individual—providing a particularly rich range of sources to compile personal biographies—and, from a number of interments—cultural trends in burial dress and body treatment. The frequent survival of textiles and vegetation provides many opportunities to add to the understanding of postmortem treatment and pre-depositional display of the corpse and what may accompany the interment.

The medical approaches to the mummified remains, combined with any associated historical sources, can together create a rich narrative of the life of the individual, albeit often with a focus on physical conditions, accidents, and aspects of diet. Clothing may reflect social status and occupation, and, in some cases, the patterns of wear, repair, and reuse of clothing can reflect either long personal association with the deceased or the circulation of clothing items before final disposal within a mortuary context. In some cases corpses were interred wearing their everyday clothes, revealing how clothing was used in combination. Vicar Rungius had a range of

high-status clothing items, whilst for the burial of Swedish vicar Winstrup only some clothing was used, with fabric strips wrapped around parts of the body instead (Väre et al., this issue). It is notable that later burials in Finland had special funerary clothing, a trend that has also been noted in England, suggesting both a change in attitude regarding the way the deceased should be treated and also the emergence of funerary professionals with access to specialized products (Janaway 1993, 1998; Litten 2002). These may be incomplete, but suitable for appearances in the coffin, and made in ways that would not last in normal circumstances, with limited stitching and no hems. The variety of clothing used within British graves has been recently reviewed by Cherryson (2018). A Korean example of a clothed mummy being studied in a multidisciplinary project is provided by E.-J. Lee, Oh et al. (2013).

Age, gender, and occupation can affect mortuary behaviors, as seen by the high proportion of clerics and high-status individuals within the mummified population, as these were the people who were interred in locations most likely to lead to high levels of preservation. Clothing also was clearly used to reveal occupation and status, but research on children by Lipkin, Ruhl et al. (this issue) reveals how complex the treatment and accompanying material culture can be, even for infants.

The odors associated with decomposition have already been noted, and various strategies to reduce these occur widely, sometimes through spread of ideas, but also independently solved by those responsible for preparing the bodies for interment. In Britain the lead lining of wooden coffins was one solution, and in North America sealed cast-iron coffins could have provided a similar result. These sealed conditions may lead to high levels of preservation, though they can also create microenvironments that assist decay; in many cases, however, the containers do not remain airtight in the long term, so decay trajectories can lead to very poor preservation. One of the most frequently chosen methods for the amelioration of odors was the incorporation of aromatic vegetation within the coffin, noted as macroscopic remains found around bodies in British and Finnish coffins (Cherryson et al. 2012:78–79; Tranberg 2016), and placed in body cavities in Palermo, identified by microfossils and pollen (Piombino-Mascoli, Panzer et al. 2011).

The discovery of well-preserved human remains indicates some particular qualities of the deceased within

several belief systems within the historical period. Both Taoist and Buddhist explanations of such survival have been documented with reference to medieval and more recent miraculous defying of decay (Sharf 1992). The mummy of a Korean general Gyeongsun (1561–1622) was buried in clothing as stipulated by Confucianist ritual codes (I. Lee, E.-J. Lee et al. 2009:316).

Roman Catholic recognition of incorruptibility of the flesh as a potential sign of sanctity is documented from medieval times to the present (Geisbusch 2008; Freeman 2011). Sensory factors—not only visible preservation, but also smell (Brazinski and Fryxell 2013)—could also be significant in the process of assigning saintly status. First-class relics are parts of the saints themselves, second-class relics are surviving material culture found directly associated with a saintly corpse, such as textiles and a wooden staff or crozier. Both were accorded a high status and often have many miracles attributed to them (Smith 2015). One mummified saint with associated material culture could therefore generate numerous distinct relics, and, as a result, the deceased corpse may not only have a much longer biography than it did whilst alive, but also more geographically dispersed and multiple-relic life histories. Third-class relics are those items that have touched first-class relics, so there is, potentially, an infinite number of third-class relics, but these are very much less venerated than first- and second-class relics. The cult of relics is still part of Roman Catholic and Orthodox church theology and practice, ensuring both the preservation of mummified remains in these contexts and their continued cultural significance, though limiting archaeological study.

Ethics

Ethics and practice in the excavation, analysis, and display of late medieval and postmedieval human remains are framed around the religious and cultural contexts of their discovery and the resultant legislative frameworks that also control and influence the agency of the researcher. In addition, there are archaeological and scientific ethical principles that apply, though these are not always in correspondence with other perspectives. As most historical burials were interred within church-controlled burial grounds, particularly in Europe, but also in many other colonized areas, the importance of the relevant denominational perspective

on human remains is often a major factor in ethical discussions and in structuring practice (Advisory Panel on the Archaeology of Burials in England [APABE] 2005, 2017). There are also museological perspectives that operate for those mummies in secular museum contexts, but these views also interact with wider secular social perspectives of the dead and also the diversity of religious opinion regarding treatment of the dead. As mummies are amongst the human remains most fascinating to visitors, church and museum authorities have often developed policies regarding their conservation and visibility, particularly in the face of the rise in “dark tourism” (Walter 2009), of which thanatourism is particularly relevant (Seaton 2002; Young and Light 2016).

A bioarchaeological perspective of ethics has been elaborated by Walker (2000), using wider scientific and UNESCO statements to outline the following three fundamental rules: human remains should be treated with dignity and respect, descendants should have the authority to control the disposition of the remains of their relatives, and preservation of archaeological collections of human remains is an ethical imperative, owing to their importance for understanding the history of the human species. However, these statements raise as many questions as they resolve. In the first, the key debate is over what is considered dignified and respectful; in the second, who the descendants are—genetic, cultural or religious. Not surprisingly, bioarchaeologists consider the third ethic unproblematic; it is not discussed at all by Walker (2000:21–24). In contrast, the advice of the Society for Historical Archaeology (1993) is brief, but does recognize the highly contextual nature of any policy and practice:

All human remains must be treated in a dignified manner and with respect for the deceased individuals. Due to the wide range of potential situations, specific treatment and the ultimate deposition of human remains must be handled case by case and in accordance with applicable laws and religious traditions.

With this in mind, some of the laws and traditions that shape historical mortuary archaeology are worthy of further consideration.

Ethics of Excavation and Scientific Analysis

The diversity of denominational attitudes toward human remains, in general, and ones with remarkable preservation, in particular, varies greatly. It is therefore not possible to review here all the different perspectives on human remains, but several numerically significant approaches are provided here. Even within a denomination much may depend on the local controllers of the burial ground, whether secular administrators or religious leaders, as to how they consider that the denominational framework should be applied and in what circumstances.

The Roman Catholic Church has long considered human remains important (Weiss-Krejci 2013), but that there was no need to maintain the integrity of the body is exemplified by the numerous charnel houses where the remains of those disturbed by the interring of subsequent burials could be placed (Musgrave 1997; Kenzler 2015). During times when prayers for the soul of the deceased were particularly prominent, these charnel houses were themselves foci for prayer. In some cases, Our Lady of the Conception of the Capuchins, Rome, and the Sedlec Ossuary, Czech Republic, for example, human remains could be used to create visually striking reminders of human mortality (Quigley 2001; Koudounaris 2011).

Protestant churches have a variety of views regarding the body, stemming from reactions to Catholic teachings at the time of the Reformation. Tarlow (2010) has demonstrated, however, that individuals’ sincerely held religious or philosophical beliefs have a complex relationship with their emotions and actual practice both in the early modern period and today. For some religious groups, human remains can be treated the same as any category of finds recovered in excavation, for others they are fundamentally different and require particular treatment.

Archaeologists have considered their ethical positions regarding the excavation and study of remains from the relatively recent past. This was brought to the fore by the Spitalfields crypt clearance, which some considered to be inappropriate, given the volume of data known from historical sources, the relatively recent dates of death, and that known descendants could be traced, whilst others saw these factors as positives (Cox 1997). Sayer (2017) has also considered the ethics of excavating human remains, including historical remains, in advance of development and the attitudes of

the British public toward archaeologists excavating cemeteries. Lipkin and Kallio-Seppä (this issue) note that they have a policy of not publishing facial images of mummies.

Sarah Tarlow's recent (Tarlow 2016b) edited volume of European case studies has reference to ethics in only two chapters—her own (Tarlow 2016a) and that of another British author, Angela Boyle (2016). Not one of the nine European contributors mention ethics even once. Indeed, very little on this subject has been addressed in print for most of the Continent, a situation also reflected in the other articles here, two recent Polish monographs, and in the numerous studies of the Palermo mummies (Piombino-Mascali, Panzer et al. 2011; Grupa, Kozłowski, Jankauskas et al. 2015; Grupa, Kozłowski, Krajewska et al. 2015). This does not mean that negotiations and permissions were not undertaken, but, rather, this is not seen as requiring comment or acknowledgment. Ethics are highly contextual, as the recent studies in Giles and Williams (2016) indicate with the diversity of approaches within the British profession, the public, and across Europe; research in Finland also involves highly contextualized agreements between the various stakeholders, with privacy being a major consideration, within the code of ethics for Finnish archaeologists (Suomen Arkeologinen Seura 2017; Lipkin and Kallio-Seppä, this issue).

Non-Christian religions also have very varied attitudes toward human remains; the views of indigenous groups in North America and Australia are now well known in archaeological circles, but the same applies to all religions, though within these, as within Christianity, there may be little agreement; investigations of Jewish graves have become increasingly sensitive (Colomer 2014). It is notable that in Korea there is also a significant role for descendants. Invasive investigations of medieval and later mummies were not allowed by families, who wished to reinter or cremate the remains (I. Lee, Kim et al. 2007:559). Associated material culture, including wooden coffins, textiles, and even books, could be retained in museums, and noninvasive methods, such as radiography and endoscopy, could often be employed, but it was the development of 3-D tomography that transformed noninvasive investigation and has often proved acceptable to descendants. As a result, within the terms of the Vermillion Accord (World Archaeological Congress 1989), CT scans have been conducted on a number of mummified corpses. Archaeologists therefore have to be

particularly sensitive and aware of the particular contexts within which they may work.

Ethics of Display

The display of human remains within Roman Catholic ritual contexts is accepted and is functionally associated with theology and liturgy; its policy was retained in the Second Vatican Council (Vatican II) in 1963, with regulations regarding authentication last outlined in 2017. The human remains—mummified or skeletal—provide a prompt for prayer and contemplation of human mortality, and, in the case of saints' relics, with the potential for miracles. The contrasting views of the Protestant Church of England are discussed below, but other Protestant contexts are more relaxed. In Finland, the display of mummified remains was made accessible to interested visitors; Nikolaus Rungius was placed in a glass-lidded coffin under trapdoors in the floor of Keminmaa church during the 1930s in order to protect him from the visitors who came to see the remains (Väre et al., this issue).

Mummies have traditionally been a feature of many museum collections and displays, but in recent years there have been some professional concerns with the motivations behind displays and of the visitors who flock to observe the remains (Swain 2002; Curtis 2003; Jenkins 2011). The concern with the display of human remains has sometimes also included skeletal material, but has most often been regarding remains with soft tissue—bog bodies and mummies. Recent work in England has revealed a public acceptance and desire for sensitive and educational mummy displays (Exell 2016). Some of the mummies in the Palermo Capuchin Catacombs are now a significant secular tourist attraction; the ethics and social implications of their display as an attraction have been recently published by Polzer (2018).

Values, Beliefs, and Practices: The Example of England

England contains many historical burial grounds continuing from the Middle Ages and now under Protestant Anglican control. Nonconformist denominations, such as Baptists and Quakers, created their own burial grounds from the 18th century onwards, enabling interment without Anglican clerical interference, but most

burial was controlled by the Anglican church well into the 19th century. From the 1820s, independent cemeteries began to be established, often by Nonconformists, but with provision for all denominations, at last breaking the Anglican church monopoly. From the middle of the 19th century, most urban Anglican churchyards were closed to new burial, and local government cemeteries were created in many places, with areas for each denomination (with those consecrated by the Church of England then having some control by the church); in rural areas Anglican churchyards have continued in use up to the present day. Control of burial grounds—and any access by archaeologists—therefore varies considerably, though often involves the Church of England.

Secular Legislation

English secular law provides part of the structure that affects archaeological practice with regard to burial. For historical archaeology, in most cases, heritage law is irrelevant—laws created largely regarding health concerns are those that are significant.

Public pressure from the effects of bodysnatching to supply cadavers for medical student training eventually led to the passing of the 1832 Anatomy Act, whereby those dying in institutions and unclaimed by families could be supplied to medical schools, and bodysnatching was no longer a threat (Mytum and Webb 2018). This issue was particularly problematic because in English and Scottish law the human corpse cannot be treated as property and therefore cannot be stolen (Woodhead 2013). Therefore, more-ancient human remains cannot be property, which makes them something of an anomaly within cultural heritage management. For archaeologists, the Burial Act of 1857 is still significant, as it set up arrangements for the disturbance of human remains. The most common reason for which the act was designed came from families that had purchased a family plot in a cemetery and wished to exhume already deceased family members and rebury them together in the family grave space. In effect, in terms of the 1857 Burial Act, archaeological excavation is seen as exhumation.

The Home Office—one of the British government departments—was until recently responsible for licensing the removal of human remains—including archaeological excavation—under the 1857 Burial Act, though for those under Anglican control the church also needed to give permission and could set conditions. The church

was relatively effective in enforcement, but the secular authorities did not have this as a high priority, and the rules regarding treating remains were often flouted (Sayer 2009:200). The Human Tissue Act 2004 requires a license when human remains are less than 100 years old (White 2013), with implications for clearance in advance of development where burials come from the early 20th century.

The British government established a new Ministry of Justice in 2007, with responsibilities including administration of the 1857 Burial Act. This new ministry decided that licenses were not required for archaeological excavation, in contrast to the previous Home Office interpretation. This removed a large amount of bureaucracy, though faculty permission was still required from Anglican burial grounds. However, in 2008 the ministry reintroduced controls, this time more draconian than those of the Home Office, imposing a two-year time limit during which excavated remains could remain available for study before being reburied (Moshenska 2009; Parker Pearson et al. 2011:6). There is usually a time limit set on remains excavated from Anglican-controlled burial grounds, but this ruling affected prehistoric and Roman, as well as Christian burials, including those of groups with no concerns over the retention of human remains, such as the Quakers. Protests from archaeologists mounted, some exceptions were allowed, and then in 2010 a campaign was started in the media and by lobbying Parliament for a more balanced interpretation of the secular law.

During 2011 the secular policy was changed once again, allowing retention of newly excavated human remains within museums (Parker Pearson et al. 2011:7–9). Unfortunately, these various interpretations of the 1857 legislation indicate that it is not fit for purpose in the 21st century, but there is no political appetite to introduce more-effective burial legislation. Much stronger controls on quality of operation, but also limitations on study, remain for the Anglican-controlled burials.

Ecclesiastical Legislation

The Church of England (Anglican, Episcopalian) is the established Protestant church with its own particular place within the British constitution, with some of its bishops sitting in the House of Lords, and its own parallel legislative system (canon law). Permission to work on consecrated ground—including archaeological

excavation or exhumation—requires permission. The application is submitted to the diocesan advisory committee, which considers the proposal and makes a recommendation (to approve, approve subject to conditions, or refuse) to the chancellor, who makes the final decision. The chancellor is a lawyer who is judge of the bishop's consistory court, which acts as the arena for hearing appeals against faculty decisions in that diocese.

Recent developments in the faculty process copy changes in the secular system, so a statement of significance and statement of need now accompany any application. These statements are of considerable importance, as the church's default position is that human remains should not be disturbed, so justification has to be provided. Chancellors base their decisions on canon law and local precedent and tradition, so rulings in one diocese may not be identical to those in another. For example, one diocese may allow a research excavation within a church to obtain samples for DNA analysis from a particular burial to help clarify the identity of an individual, and another may refuse this as inappropriate, as what is deemed an effective argument within a statement of need would vary. For those burials under Anglican control, the legal interpretation of the Ministry of Justice means that matters are now simplified for excavations of Anglican burials, temporary storage or handling of human remains outside consecrated ground (for example for archaeological/osteological analysis), and then reinterment. These are all done under canon law only, and the secular authorities are not involved at all.

Although almost all medieval burials were of Roman Catholics and within that denomination's theological understanding of human remains, the Anglican church is recognized as the continuance of the Catholic tradition in England and Wales, and so takes on that role for ground that is still consecrated; for other medieval burials, such as those at monasteries abandoned after the Dissolution, this does not apply, and only secular legislation is valid.

Relevant stakeholders may not only be Christian groups; some Jews objected to the analysis of human remains from a medieval Jewish burial ground in York (Lilley et al. 1994), causing the cessation of scientific study of the remains and their removal to a Manchester synagogue until they could be returned for reburial on the site from which they had come. In Britain this was an early case that highlighted the variation in cultural attitudes toward the treatment of human remains and which

began the debate on the ethics and practice of their scientific study.

National Professional Standards both for Fieldwork and for Subsequent Analysis

In the last 20 years the Anglican church has clarified and codified its attitudes, with a working group of members proposed by the Church of England and Historic England preparing guidance (APABE 2005). The English scientific community wishing to remove and study human remains bases its principles on general cultural ethical values, as exemplified in the secular legal structure and with an assumption that increase in knowledge is to be encouraged (British Association of Biological Anthropology and Osteoarchaeology Working-Group for Ethics and Practice 2010). The Anglican church has revised its policies in the light of experience and new scientific analyses requiring much smaller samples (APABE 2017). In between these two reviews, some pagans attempted to change the guidelines regarding retention of prehistoric remains, though in the end this was unsuccessful (Thackray and Payne 2009; Wallis and Blain 2011). Religious communities may also claim consideration regarding the treatment of human remains, as with the case of the Roman Catholic Cistercian order becoming involved with the burials at the site of the Cistercian abbey of St. Mary Stratford Langthorne, London, lost at the Dissolution and since built over, but where human remains were excavated during development (APABE 2017:28–29). Some large-scale infrastructure projects requiring clearance of burial grounds can also involve a combination of archaeologists and exhumation contractors, which can lead to collaboration and effectiveness if the project design is well considered (Emery and Wooldridge 2011).

Conclusions

Mummies provide numerous opportunities for increasing understanding of many aspects of the past, with a focus on sensory experiences surrounding death and burial visitation (Kallio-Seppä and Tranberg, this issue), on identity and body treatment (Lipkin, Ruhl et al., this issue; Pye, this issue), and in terms of individual biography (Lipkin, Niinimäki et al., this issue; Väre et al., this issue). The medical conditions identifiable from soft tissue through new techniques, such as scanning and the obtaining of very small samples for analysis, mean that

methodological advances continue to offer new opportunities. The articles here show the strength of combining cultural and scientific perspectives (including medical perspectives where appropriate); traditionally, mummy research has had too great a focus on the medical aspects, with results not well integrated with wider cultural understanding. Indeed, these articles reveal the vibrant state of a multidisciplinary, historical mortuary-research environment (Mytum and Burgess 2018a).

Just as incorporating past cultural context has become increasingly significant in the study of mummified human remains, in some parts of the world ethical consideration beyond that of scientists has now become more significant. There is no doubt that ethical concerns regarding archaeological treatment and study of historical human remains have been of greater prominence in Britain than in Europe, though in the Finnish context the ethical issues have been explicit and discussed between interested parties, even if not greatly expanded upon in print (Lipkin and Kallio-Seppä, this issue). In North America burials of nonindigenous peoples have been center stage, though this has often influenced a more sensitive and collaborative relationship with stakeholders, including descendant communities, as well as legally responsible gatekeepers (Beaudry 2009).

A review of the British situation reveals protocols and associated justifications that have taken time, argument, and, on occasion, conflict to define and refine. Learning from these lessons may allow other countries to develop effective ways of incorporating appropriate ethical frameworks within all aspects of protection, excavation, analysis, display, storage, and reburial of mummified and, indeed, human skeletal remains in their specific contexts.

Declarations

Conflict of Interest The author declares that he has no conflict of interest.

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References

- Advisory Panel on the Archaeology of Burials in England (APABE)
2005 *Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England*. English Heritage, London, UK.
- Advisory Panel on the Archaeology of Burials in England (APABE)
2017 *Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England*, 2nd edition. Historic England, London, UK.
- Association of Diocesan and Cathedral Archaeologists
2010 *Archaeology and Burial Vaults. A Guidance Note for Churches*. Association of Diocesan and Cathedral Archaeologists Guidance Note 2. London, UK.
- British Association of Biological Anthropology and Osteoarchaeology Working-Group for Ethics and Practice
2010 British Association of Biological Anthropology and Osteoarchaeology: Code of Ethics. British Association of Biological Anthropology and Osteoarchaeology <<http://www.babao.org.uk/assets/Uploads-to-Web/code-of-ethics.pdf>>. Accessed 5 May 2019.
- Beaudry, Mary C.
2009 Ethical Issues in Historical Archaeology. In *International Handbook of Historical Archaeology*, Teresita Majewski and David Gaimster, editors, pp. 17–29. Springer, New York, NY.
- Boyle, Angela
1999 A Grave Disturbance: Archaeological Perceptions of the Recently Dead. In *The Loved Body's Corruption: Archaeological Contributions to the Study of Human Mortality*, J. Downes and T. Pollard, editors, pp. 187–199. Cruithne Press, Glasgow, UK.
- Boyle, Angela
2016 Approaches to Post-Medieval Burial in England: Past and Present. In *The Archaeology of Death in Post-Medieval Europe*, Sarah Tarlow, editor, pp. 39–60. De Gruyter Open, Warsaw, Poland.
- Brazinski, Paul A., and Allegra R. P. Fryxell
2013 The Smell of Relics: Authenticating Sainly Bones and the Role of Scent in the Sensory Experience of Medieval Christian Veneration. *Papers from the Institute of Archaeology* 23(1). PIA: Papers from the Institute of Archaeology: University College London <<https://pia-journal.co.uk/articles/10.5334/pia.430/>>. Accessed 8 September 2020.
- Chang, Byung Soo, Chang Sub Uhm, Chang Hyun Park, Han Kyeom Kim, Gui Young Lee, Han Hee Cho, Myeung Ju Kim, Yoon Hee Chung, Kang Won Song, Do Sun Lim, and Dong Hoon Shin
2006 Preserved Skin Structure of a Recently Found Fifteenth-

- Century Mummy in Daejeon, Korea. *Journal of Anatomy* 209(5):671–680.
- Cherryson, Annia Kristina
2018 Dressing for the Grave: The Archaeological Evidence for the Preparation and Presentation of the Corpse in Post-Medieval England. In *Death across Oceans: Archaeology of Coffins and Vaults in Britain, America, and Australia*, H. Mytum and L. Burgess, editors, pp. 37–55. Smithsonian Institution Scholarly Press, Washington, DC.
- Cherryson, Annia Kristina, Zoë Crossland, and Sarah Tarlow
2012 *A Fine and Private Place: The Archaeology of Death and Burial in Post-Medieval Britain and Ireland*. University of Leicester, Leicester Archaeology Monographs Issue 22. Leicester, UK.
- Colomer, Laia
2014 The Politics of Human Remains in Managing Archaeological Medieval Jewish Burial Grounds in Europe. *Universitetsforlaget Nordisk Kulturpolitisk Tidsskrift* 17(2):168–186.
- Cox, Margaret
1997 Crypt Archaeology after Spitalfields: Dealing with Our Recent Dead. *Antiquity* 71(271):8–10.
- Cox, Margaret
1998 Eschatology, Burial Practice and Continuity: A Retrospection from Christ Church, Spitalfields. In *Grave Concerns: Death and Burial in England 1700 to 1850*, Margaret Cox, editor, pp. 112–125. Council for British Archaeology, Research Report 113. York, UK.
- Curtis, Neil G. W.
2003 Human Remains. The Sacred, Museums and Archaeology. *Public Archaeology* 3(1):21–32.
- Emery, Philip A., and Kevin Wooldridge
2011 *St Pancras Burial Ground: Excavations for St Pancras International, the London Terminus of High Speed 1, 2002–3*. Museum of London Archaeology, London, UK.
- Exell, Karen
2016 Covering the Mummies at the Manchester Museum: A Discussion of Authority, Authorship and Agendas in the Human Remains Debate. In *Archaeologists and the Dead: Mortuary Archaeology in Contemporary Society*, H. Williams and M. Giles, editors, pp. 233–250. Oxford University Press, Oxford, UK.
- Fields, Roy, and D. Kimberley Molina
2008 A Novel Approach for Fingerprinting Mummified Hands. *Journal of Forensic Sciences* 53(4):952–955.
- Fornaciari, Antonio, Valentina Giuffra, and Francesco Pezzini
2010 Secondary Burial and Mummification Practices in the Kingdom of the Two Sicilies. *Mortality* 15(3): 223–249.
- Freeman, Charles
2011 *Holy Bones, Holy Dust: How Relics Shaped the History of Medieval Europe*. Yale University Press, New Haven, CT.
- Garland, A. Neil, and Robert C. Janaway
1989 The Taphonomy of Inhumation Burials. In *Burial Archaeology: Current Research, Methods and Developments*, C. A. Roberts, F. Lee, and J. Bintliff, editors, pp. 15–37. British Archaeological Reports, British Series 211. Oxford, UK.
- Geisbusch, Jan Winfried
2008 Awkward Objects: Relics, the Making of Religious Meaning, and the Limits of Control in the Information Age. Doctoral dissertation, Department of Anthropology, University College London, London, UK.
- Giles, Melanie, and Howard Williams
2016 Introduction: Mortuary Archaeology in Contemporary Society. In *Archaeologists and the Dead: Mortuary Archaeology in Contemporary Society*, H. Williams and M. Giles, editors, pp. 1–18. Oxford University Press, Oxford, UK.
- Gostner, Paul, Marco Bonelli, Patrizia Pernter, Angela Graefen, and Albert R. Zink
2013 New Radiological Approach for Analysis and Identification of Foreign Objects in Ancient and Historic Mummies. *Journal of Archaeological Science* 40(2):1003–1011.
- Grupa, Małgorzata, Tomasz Kozłowski, Rimantas Jankauskas, Dawid Grupa, Magdalena Krajewska, Sandra Krakowska, Magdalena Majorek, Jacob Mosiejczyk, Marcin Nowak, Sebastian Nowak, Magdalena Przymorska-Sztuczka, and Adrianna Wojciechowska
2015 *Archaeolog Tajemnice krypty w kaplicy św. Anny/Secrets of the Crypt in St. Ann's Chapel*. Stowarzyszenie Centrum Aktywnych Gniew, Gniew, Poland.
- Grupa, Małgorzata, Tomasz Kozłowski, Magdalena Krajewska, Dawid Grupa, Natalia Janowska, Krzysztof Jarzęcki, Dariusz Kurzawa, Natalia Mucha, Marcin Nowak, Sebastian Nowak, and Magdalena Majorek
2015 *An Historia Kościoła św. Oswalda w Plonkowie/History of St. Oswald's Church in Plonkowo*, Vol. 1. Stowarzyszenie Centrum Aktywnych Gniew, Gniew, Poland.
- Grupa, Małgorzata, Magdalena Majorek, and Dawid Grupa
2014 Selected Silk Coffin Upholstery from 17th and 18th Centuries on Polish Lands. *Sprawozdania Archeologiczne* 66:399–416.
- Hotz, Mary Elizabeth
2001 Down among the Dead: Edwin Chadwick's Burial Reform Discourse in Mid-Nineteenth-Century England. *Victorian Literature and Culture* 29(1): 21–38.
- Janaway, Rob
1993 The Textiles. In *The Spitalfields Project. Volume I—The Archaeology. Across the Styx*, Jez Reeve and Max Adams, editors, pp. 92–119. Council for British Archaeology, Research Report 85. York, UK.
- Janaway, Robert
1998 An Introductory Guide to Textiles from 18th and 19th Century Burials. In *Grave Concerns: Death and Burial in England 1700 to 1850*, Margaret Cox, editor, pp. 17–32. Council for British Archaeology, Research Report 113. York, UK.
- Janaway, Rob
2002 Degradation of Clothing and other Dress Materials Associated with Buried Bodies of Archaeological

- and Forensic Interest. In *Advances in Forensic Taphonomy: Method, Theory, and Archaeological Perspectives*, William D. Haglund and Marcella H. Sorg, editors, pp. 379–402. CRC Press, Boca Raton, FL.
- Jenkins, Tiffany
2011 *Contesting Human Remains in Museum Collections: The Crisis of Cultural Authority*. Routledge, London, UK.
- Kenzler, Hauke
2015 Religion, Status and Taboo: Changing Funeral Rites in Catholic and Protestant Germany. In *The Archaeology of Death in Post-Medieval Europe*, Sarah Tarlow, editor, pp. 148–169. De Gruyter Open, Warsaw, Poland.
- Koudounaris, Paul
2011 *The Empire of Death: A Cultural History of Ossuaries and Charnel Houses*. Thames & Hudson, New York, NY.
- Kumm, Kelsey J., Karl J. Reinhard, Dario Piombino-Mascali, and Adauto Araujo
2010 Archaeoparasitological Investigation of a Mummy from Sicily (18th–19th century AD). *Anthropologie* 48(2):177–184.
- Lee, Eun-Joo, Chang Seok Oh, Se Gweon Yim, Jun Bum Park, Yi-Suk Kim, Myung Ho Shin, Soong Deok Lee, and Dong Hoon Shin
2013 Collaboration of Archaeologists, Historians and Bioarchaeologists during Removal of Clothing from Korean Mummy of Joseon Dynasty. *International Journal of Historical Archaeology* 17(1):94–118.
- Lee, In Sun, Myeung Ju Kim, Dong Soo Yoo, Young Seok Lee, Sung Sil Park, Gi Dae Bok, Seung Ho Han, Yoon Hee Chung, Byung Soo Chang, Yang Su Yi, Chang Seok Oh, and Dong Hoon Shin
2007 Three-Dimensional Reconstruction of Medieval Child Mummy in Yangju, Korea, Using Multi-Detector Computed Tomography. *Annals of Anatomy—Anatomischer Anzeiger* 189(6):558–568.
- Lee, In Sun, Eun-Joo Lee, Jun Bum Park, Seung Hee Baek, Chang Seok Oh, Soong Deok Lee, and Yi-Suk Kim
2009 Acute Traumatic Death of a 17th-Century General Based on Examination of Mummified Remains Found in Korea. *Annals of Anatomy—Anatomischer Anzeiger* 191(3):309–320.
- Lilley, Jane M., Gillian Stroud, Don R. Brothwell, and Mark Herbert Williamson
1994 *The Jewish Burial Ground at Jewbury*. Council for British Archaeology, York, UK.
- Lim, Do-Seon, In Sun Lee, Ki-Ju Choi, Soong Deok Lee, Chang Seok Oh, Yi-Suk Kim, Gi Dae Bok, Myeung Ju Kim, Yang Su Yi, Eun-Joo Lee, and Dong Hoon Shin
2008 The Potential for Non-Invasive Study of Mummies: Validation of the Use of Computerized Tomography by Post Factum Dissection and Histological Examination of a 17th Century Female Korean Mummy. *Journal of Anatomy* 213(4):482–495.
- Litten, Julian
1985 Post-Medieval Burial Vaults: Their Construction and Contents. *Bulletin of the Council for British Archaeology Churches Committee* 23:9–17.
- Litten, Julian
1999 Tombs Fit for Kings: Some Burial Vaults of the English Aristocracy and Landed Gentry of the Period 1650–1850. *Church Monuments* 14:104–128.
- Litten, Julian
2002 *The English Way of Death*. Robert Hale, London, UK.
- Moshenska, Gabriel
2009 The Reburial Issue in Britain. *Antiquity* 83(321): 815–820.
- Musgrave, Elizabeth
1997 Memento Mori: The Function and Meaning of Breton Ossuaries 1450–1750. In *The Changing Face of Death: Historical Accounts of Death and Disposal*, Glennys Howarth and Peter C. Jupp, editors, pp. 62–75. Palgrave Macmillan, London, UK.
- Mytum, Harold
1989 Public Health and Private Sentiment: The Development of Cemetery Architecture and Funerary Monuments from the Eighteenth Century Onwards. *World Archaeology* 21(2):283–297.
- Mytum, Harold
2004 *Mortuary Monuments and Burial Grounds of the Historic Period*. Kluwer Academic/Plenum, New York, NY.
- Mytum, Harold, and Laurie Burgess
2018a Where now? Future Agendas in Historic Mortuary Culture Studies. In *Death across Oceans: Archaeology of Coffins and Vaults in Britain, America, and Australia*, H. Mytum and L. Burgess, editors, pp. 285–301. Smithsonian Institution Scholarly Press, Washington, DC.
- Mytum, Harold, and Laurie Burgess (editors)
2018b *Death across Oceans: Archaeology of Coffins and Vaults in Britain, America, and Australia*. Smithsonian Institution Scholarly Press, Washington, DC.
- Mytum, Harold, and Katie Webb
2018 Bodysnatchers and Mortsafes: An Archaeology of Fear. In *Death across Oceans: Archaeology of Coffins and Vaults in Britain, America, and Australia*, H. Mytum and L. Burgess, editors, pp. 227–248. Smithsonian Institution Scholarly Press, Washington, DC.
- Nawrocki, Stephen P.
1995 Taphonomic Processes in Historic Cemeteries. In *Bodies of Evidence: Reconstructing History through Skeletal Analysis*, A. L. Grauer, editor, pp. 49–66. Wiley-Liss, New York, NY.
- Panzer, Stephanie, Peter Augat, Albert R. Zink, and Dario Piombino-Mascali
2018 CT Checklist and Scoring System for the Assessment of Soft Tissue Preservation in Human Mummies: Application to Catacomb Mummies from Palermo, Sicily. *International Journal of Paleopathology* 20:50–59.
- Panzer, Stephanie, Albert R. Zink, and Dario Piombino-Mascali
2010 Scenes from the Past: Radiologic Evidence of

- Anthropogenic Mummification in the Capuchin Catacombs of Palermo, Sicily. *RadioGraphics* 30(4):1123–1132.
- Pap, Ildikó, G. Józsa László, Imre Repa, Gábor Bajzik, Sr Lakhani, Helen D. Donoghue, and Mark Spigelman
1999 18–19th-Century Tuberculosis in Naturally Mummified Individuals (Vác, Hungary). In *Tuberculosis Past and Present*, G. Pálfi, O. Dutour, J. Deák, and I. Hutás, editors, pp. 421–428. Tuberculosis Foundation, Szeged, Hungary.
- Parker Pearson, Mike, Tim Schadla-Hall, and Gabe Moshenska
2011 Resolving the Human Remains Crisis in British Archaeology. *Papers from the Institute of Archaeology* 21:5–9.
- Piombino-Mascalì, Dario, Heather Gill-Frerking, and Ronald G. Beckett
2017 The Taphonomy of Natural Mummies. In *Taphonomy of Human Remains: Forensic Analysis of the Dead and the Depositional Environment*, E. M. J. Schotsmans, N. Márquez-Grant, and S. L. Forbes, editors, pp. 101–119. John Wiley & Sons, Chichester, UK.
- Piombino-Mascalì, Dario, Justina Kozakaitė, Algirdas Tamošiūnas, Ramūnas Valančius, Stephanie Panzer, and Rimantas Jankauskas
2014 Skeletal Pathological Conditions of Lithuanian Mummies. *Papers on Anthropology* 23(1):118–126.
- Piombino-Mascalì, Dario, Stephanie Panzer, Silvia Marvelli, Sandra Lösch, Arthur C. Aufderheide, and Albert R. Zink
2011 The “Sicily Mummy Project”: First Results of the Scientific Campaigns (2007–2010). *Academia* <https://www.academia.edu/3210906/The_Sicily_Mummy_Project>. Accessed 8 September 2020.
- Polzer, Natalie C.
2018 Ancestral Bodies to Universal Bodies—The “Re-Enchantment” of the Mummies of the Capuchin Catacombs in Palermo, Sicily. *Cogent Arts and Humanities* 5(1). *Cogent OA* <<https://www.cogentoa.com/article/10.1080/23311983.2018.1482994>>. Accessed 8 September 2020.
- Quigley, Christine
2001 *Skulls and Skeletons: Human Bone Collections and Accumulations*. McFarland, Jefferson, NC.
- Sayer, Duncan
2009 Is There a Crisis Facing British Burial Archaeology? *Antiquity* 83(319):199–205.
- Sayer, Duncan
2017 *Ethics and Burial Archaeology*. Bloomsbury, London, UK.
- Seaton, Anthony V.
2002 Thanatourism’s Final Frontiers? Visits to Cemeteries, Churchyards and Funerary Sites as Sacred and Secular Pilgrimage. *Tourism Recreation Research* 27(2):73–82.
- Seiler, Roger, Dario Piombino-Mascalì, and Frank J. Rühli
2017 Dental Investigation of Mummies from the Capuchin Catacombs of Palermo (circa 18th–19th Century CE). *HOMO: Journal of Comparative Human Biology* 68(4):274–282.
- Sharf, Robert H.
1992 The Idolization of Enlightenment: On the Mummification of Ch’an Masters in Medieval China. *History of Religions* 32(1):1–31.
- Shin, Dong Hoon, Young Hi Choi, Kyoung-Jin Shin, Gil Ro Han, Minyoung Youn, Chong-Youl Kim, Sung Ho Han, Jae Cheol Seo, Sung Sil Park, Yong-Jin Cho, and Byung Soo Chang
2003 Radiological Analysis on a Mummy from a Medieval Tomb in Korea. *Annals of Anatomy—Anatomischer Anzeiger* 185(4):377–382.
- Smith, Julia M. H.
2015 Relics: An Evolving Tradition in Latin Christianity. In *Saints and Sacred Matter: The Cult of Relics in Byzantium and Beyond*, C. Hahn and H. A. Klein, editors, pp. 41–60. *Dumbarton Oaks Research Library and Collection*, Washington, DC.
- Society for Historical Archaeology
1993 The Society for Historical Archaeology Standards and Guidelines for the Curation of Archaeological Collections. SHA Curation Standards and Guidelines, Research Resources, Society for Historical Archaeology <<https://sha.org/resources/curation-standards-guidelines/>>. Accessed 10 September 2020.
- Suomen Arkeologinen Seura
2017 Hyvään tieteelliseen käytäntöön (TENK) pohjautuvat eettiset periaatteet suomalaisessa arkeologisessa toiminnassa. (Ethical principles in Finnish archaeological activities based on good scientific practice [TENK]). Suomen Arkeologinen Seura <www.sarks.fi/arkisto/eettiset_ohjeet.pdf>. Accessed 24 August 2020.
- Swain, Hedley
2002 The Ethics of Displaying Human Remains from British Archaeological Sites. *Public Archaeology* 2(2):95–100.
- Tarlow, Sarah
2000 Landscapes of Memory: The Nineteenth-Century Garden Cemetery. *European Journal of Archaeology* 3(2):217–239.
- Tarlow, Sarah
2010 *Ritual, Belief and the Dead in Early Modern Britain and Ireland*. Cambridge University Press, Cambridge, UK.
- Tarlow, Sarah
2016a Introduction: Death and Burial in Post-Medieval Europe. In *The Archaeology of Death in Post-Medieval Europe*, Sarah Tarlow, editor, pp. 1–18. De Gruyter Open, Warsaw, Poland.
- Tarlow, Sarah (editor)
2016b *The Archaeology of Death in Post-Medieval Europe*. De Gruyter Open, Warsaw, Poland.
- Thackray, David, and Sebastian Payne
2009 Avebury Reburial Request: Summary Report. Manuscript, English Heritage and National Trust, London, UK. Historic England <<https://historicengland.org.uk/content/docs/consultations/avebury-reburial-request-summary-pdf/>>. Accessed 8 September 2020.

- Tranberg, Annemari
 2016 Burial Customs in the Northern Ostrobothnian Region (Finland) from the Late Medieval Period to the 20th Century. Plant Remains in Graves. In *The Archaeology of Death in Post-Medieval Europe*, Sarah Tarlow, editor, pp. 189–203. De Gruyter Open, Warsaw, Poland.
- Walker, Phillip L.
 2000 Bioarchaeological Ethics: A Historical Perspective on the Value of Human Remains. In *Biological Anthropology of the Human Skeleton*, M. A. Katzenberg and S. R. Saunders, editors, pp. 3–39. Wiley-Liss, New York, NY.
- Wallis, Robert J., and Jenny Blain
 2011 From Respect to Reburial: Negotiating Pagan Interest in Prehistoric Human Remains in Britain, through the Avebury Consultation. *Public Archaeology* 10(1):23–45.
- Walter, Tony
 2009 Dark Tourism: Mediating between the Dead and the Living. In *Dark Tourism: Mediating between the Dead and the Living*, R. Sharpley and P. Stone, editors, pp. 39–55. Channel View, Bristol, UK.
- Weiss-Krejci, Estella
 2013 The Unburied Dead. In *The Oxford Handbook of the Archaeology of Death and Burial*, Sarah Tarlow and L. Nilsson Stutz, editors, pp. 281–301. Oxford University Press, Oxford, UK.
- White, Liz
 2013 The Impact and Effectiveness of the Human Tissue Act 2004 and the Guidance for the Care of Human Remains in Museums in England. In *Curating Human Remains: Caring for the Dead in the United Kingdom*, M. Giesen, editor, pp. 43–52. Boydell Press, Woodbridge, UK.
- Woodhead, Charlotte
 2013 Care, Custody and Display of Human Remains: Legal and Ethical Obligations. In *Curating Human Remains. Caring for the Dead in the United Kingdom*, M. Giesen, editor, pp. 31–41. Boydell Press, Woodbridge, UK.
- World Archaeological Congress
 1989 The Vermillion Accord on Human Remains. Code of Ethics, World Archaeological Congress <<https://worldarch.org/code-of-ethics/>>. Accessed 5 May 2019.
- Young, Craig, and Duncan Light
 2016 Interrogating Spaces of and for the Dead as ‘Alternative Space’: Cemeteries, Corpses and Sites of Dark Tourism. *International Review of Social Research* 6(2):61–72.

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