

# Mortuary Excavation and Recording Approaches

Selin E. Nugent, Oxford Brookes University, Oxford, United Kingdom

## Abstract

Mortuary archaeology examines the treatment of the dead, consisting of the study of human remains as well their funerary landscapes, monuments, and material assemblages. Human societies respond to and treat death in diverse ways between cultures and throughout time, which provides archaeologists with the opportunity to gain insight into the funerary rituals, the relationship between the living and the dead, and the social, political, and economic organization of the populations of study. This entry reviews excavation and recording techniques in mortuary archaeology as well as contemporary topics of importance in this field.

## Key Points

- Definition of foundational concepts in mortuary archaeology
- Critical research plan design and impact assessment as the foundation for ethical research with human remains and culturally-sensitive spaces
- Professional approaches to the excavation, recording, and storage of burials and cemeteries
- Major digital developments in the state of the art in mortuary archaeology research

## Glossary

**Block lifting** process of removing any element along with the soil it is attached to so that it can be excavated more delicately at a later time

**Cremation** process of burning of the human body, which may be identified based on the color, fragmentation, and warping of the bones

**Datum** a starting point which provides a frame of reference for measuring locations on the surface of the earth

**Extended** body position in which the legs are at an angle of 180 degree to the axial skeleton

**Flexed** body position in which the legs are at an angle less than 90 degree to the axial skeleton

**Inhumation** the burial of human remains within the ground

**Mortuary archaeology** a subfield of archaeology, which studies the treatment of the dead, consisting of the study of human remains as well their funerary landscapes, monuments, and material assemblages

**Multiple burial** burial type in which two or more individuals are placed within the same feature

**Native American Graves Protection and Repatriation Act** American legislation that states that museums receiving government funding must attempt to return archaeological materials to Native Americans if the natives claim the material, and that native organizations must be consulted when Native American materials are found or are expected to be found

**Open-access** the practice of providing unrestricted access to scholarly material, including written research publications, data, statistical analysis code, and imagery

**Primary burial** burial type in which the human remains have not been disturbed since they were buried in the position in which they were found by excavators

**Prone** body position in which the individual is resting on the front facing downward

**Provenance** the origin of archaeological materials

**Remote sensing** the use of imagery obtained from satellite or aircraft scanning devices in order to document information about archaeological sites and features visible on the earth's surface

**Secondary burial** burial type in which the human remains decomposed or were processed in a separate location and were then collected or disinterred before being placed in the space in which they are found during excavation

**Semi-flexed** body position in which the legs are at an angle between 90 and 180 degree from the axial skeleton

**Single burial** single individual within a feature

**Soluble consolidant** a conservation-grade material with adhesive qualities that can support or bind friable archaeological materials during the excavation process, and which can be easily dissolved with the appropriate solvent without causing damage

**Supine** body position in which the individual is on the back facing upwards

## Introduction

Mortuary archaeology examines the treatment of the dead, consisting of the study of human remains as well their funerary landscapes, monuments, and material assemblages. The study of mortuary rites has been a staple of anthropological and archaeological research since the founding of these fields. The abundance of mortuary contexts available in the archaeological record, and the oftentimes ample material, biological, and ecological evidence available in mortuary contexts, has provided opportunities to address questions of ancient culture, ecology, and behavior (Ashmore and Geller, 2005; Brown, 1995).

Human societies respond to and treat death in diverse ways, which provides archaeologists with opportunities to gain insight into the funerary rituals, the relationship between the living and dead, and the social, political, and economic organization in the past. To this end, mortuary analysis, over the course of its long history of study, has been used to investigate a wide range of social phenomena such as social complexity (Saxe, 1970; Goldstein, 1981), ideology (Curet and Oliver, 1998; Wrobel, 2014), and territoriality (Chapman, 1981) to name a few topics. The increasing integration of bioarchaeological perspectives (Duday, 2006) has additionally incorporated a wider range of anthropological considerations for study related to the ecology and biology of ancient populations. Bioarchaeological studies have integrated mortuary archaeology to address the subjects of identity (Arnold, 2007; Gregoricka, 2013; Mattson, 2021; Swerida and Nugent, 2019), social relationships (Chesson, 2001; Howell and Kintigh, 1996; Nugent, 2019; Weiss-Krejci, 2011), and social systems (Andrushko, 2007; Pechenkina and Delgado, 2006). This concept was the foundation of a major turning point in bioarchaeological theory and approaches to how human skeletal remains were studied in the context of ancient social organization and complexity (Knudson and Stojanowski, 2008; Quinn and Beck, 2016).

Contemporary mortuary analysis has developed into an interdisciplinary and powerful approach in addressing current issues of interest in anthropology and archaeology, such as the materiality of social structure, agency, inequality, and social memory.

However, archaeologists must also be aware of legal and ethical considerations when excavating human remains. The ways that human societies bury their dead vary dramatically over space and time, so there is no universally applicable method for excavating a burial. Excavation methods need to be adaptable to different types of burials encountered.

## Overview and Key Issues

### Mortuary Archaeology Ethics

The interaction with the dead and mortuary spaces is an act of negotiation between the living. Mortuary spaces and human remains must be treated with great respect in accordance with professional ethical guidelines, the preferences of indigenous and descendant communities, and national laws (Sayer, 2010). This includes the handling (Caffell and Jakob, 2019; de Tienda Palop and Currás, 2020), narrative (Bernbeck, 2015; Mura, 2022; Pluciennik, 2015), and display (Licata et al., 2020; Smith and Hirst, 2020; Swain, 2002) of funerary spaces in scholarly research. Prior to undertaking any research activities in mortuary contexts, archaeologists must first assess the potential impact of their proposed research plans and implement approaches that tangibly ensure the respectful and responsible treatment of the dead and mortuary spaces. Research, especially invasive excavation-based methods, should not proceed without appropriate and thorough due diligence in the planning phases, a level of care that should continue throughout the research process.

It is important to recognize the past harms caused by archaeological researchers studying mortuary spaces and human remains in order to appreciate how dramatically archaeological investigation has changed since the 19th/early 20th centuries as well as reflect where the profession can progress and improve further. 19th century archaeologists, often backed by museums and collectors, would gather artifacts and human remains from around the world with little to no regard for obtaining permission of indigenous communities or documenting the provenance, or the origin information, of the items. Often, human remains were treated as artifacts, rather than human individuals, and were obtained in unethical ways such as rogue excavations in which only crania were collected or the sale of entire mummified individuals to private collectors, in the case of Egyptian mummies.

By the 1960s in North America and Europe, archaeologists began to develop professional ethical standards around general archaeological practice. But it was not until the 1980s that human remains were specifically addressed in debates leading to further expansion of professional guidelines and national legislation. One example of such legislation is the Native American Graves Protection and Repatriation Act (NAGPRA, PL 101–601) in the United States, which states that museums receiving government funding must attempt to repatriate archaeological materials to Native Americans if they claim the material, and that native organizations must be consulted when Native American materials are, or are expected to be, found.

Present day archaeologists studying mortuary spaces and human remains take a less invasive approach toward their research that minimizes physical disruption to the site through novel technological methods as well as by prioritizing the continued analysis of existing collections and data over new excavation. One such less destructive approach is the use of ground-penetrating radar to identify burials before breaking any ground and potentially disturbing graves. This is especially important if indigenous and descendant communities do not approve of burial disruption, as is the case, for example, in Poland where ground penetrating radar is especially useful to locate and mark lost burial sites from the Holocaust in order to respect Jewish laws against disturbing burials (Colls, 2016).

Mortuary archaeology ethics is, of course, an ongoing area of growth and discussion as researchers apply new methods and consider new research questions. This is especially the case with novel laboratory based approaches, such as ancient DNA, radiometric, and biogeochemical research, which requires destructive sampling of skeletal remains to work. Each new study must therefore weigh and justify the potential scientific value of the research against the potential social harms it may cause to any relevant stakeholders before proceeding.

### **Identifying Mortuary Sites**

In some cases, mortuary features may be easily identifiable on the surface, for example, in the case of monumental burial features such as burial mounds and mausoleums. However, in many other circumstances, such as simple pit burials, the archaeologist may require employing a diverse toolkit of invasive and non-invasive site identification methods to detect and record less visible mortuary features.

### ***Non-invasive Approaches***

Non-invasive approaches can be divided into aerial imagery, surface survey, and geophysical survey. Aerial imagery from aircrafts, drones, or satellites can reveal disturbances in the soil, vegetation, waterways, and others caused by the presence of subterranean archaeological features. Systematic surface survey may be utilized to identify evidence for disturbed mortuary features, such as funerary architecture, scatters of human bone fragments, and material objects associated with funerary rites. Of course, this may not be appropriate if the site is not disturbed. In such instances, geophysical survey (i.e., magnetometry, ground-penetrating radar) can be employed to identify certain mortuary features based on the physical properties of the subsurface materials. The effectiveness of these methods depends on the type of mortuary feature and soil conditions. For example, pit burials may not be as detectable as stone-lined cists or chamber tombs.

### ***Invasive Approaches***

Invasive approaches may be employed for the purpose of more precisely recording mortuary features which have been identified with an approximate location or dimensions from non-invasive approaches. This involves removing surface vegetation and/or soil in order to expose soil differences and the boundaries of the features.

### **Mortuary Feature Types**

There are numerous ways in which the remains of the dead may be treated and it is important to be familiar with variations in mortuary customs that may be encountered during excavation in order to recognize the appropriate excavation method for any given funerary treatment. Burials can first be categorized based on where the individual decomposed. In primary burials, the human skeletal remains have not been disturbed since they were buried. This identification is supported if the skeletal remains are found in normal anatomical position. In secondary burials, the human remains decomposed in a separate location and were then collected or disinterred before being placed in the space in which they are excavated. This identification is supported if the skeletal remains are disarticulated and elements may be missing. Burials can also be categorized based on how the human remains were processed. Inhumation involves the burial of human remains within the ground. Cremation involves burning of the human body and may be identified based on the color, fragmentation, and warping of the bones. Cremation can take place outside of the final burial location, resulting in a secondary burial, or within the burial location itself, which would be a primary burial. Mortuary features can also be distinguished by the number of individuals within a feature. A single burial involves a single individual within a feature. A multiple burial involves two or more individuals within the same feature. A multiple burial may be a primary feature where multiple individuals are placed together or a secondary feature (e.g., an ossuary) where numerous individuals are placed after being decomposed/dismembered elsewhere.

### **Excavation and Documentation**

Prior to beginning any excavations, processes for recording the excavations are critical to ensure consistency and, later, accurate interpretation of the results. The area of interest for excavation should be surveyed and mapped, documenting the location of each feature and excavation plot in relation to a datum, or chosen reference point.

Burial excavation can be a lengthy process in order to ensure that exposing the context is done respectfully and complex assemblages are recorded methodically. Once the burial is excavated, the original context is effectively lost. Therefore, a delicate balance must be found between taking time to fully expose human remains and any artifacts in the assemblage while also minimizing the length of exposure time that may damage the delicate bones or lose contextual data. This balance is especially important for excavations involving complex burial sites, such as mass burials or large cemeteries, or excavations involving challenging human remains, such as those of subadults or cremated bones. Such a balance can be struck by employing an osteologist in the planning stages for excavation, whose expertise in human skeletal remains and burial contexts will allow to accurately and quickly identify human remains as excavations proceed. Further, archaeologists involved with mortuary excavations should have some osteological training in order to maximize the amount of accurate data obtained during the excavation process.

Excavating burials begins with determining the excavation area and defining the boundaries of the mortuary feature(s). Generally, excavation areas are selected based on findings from non-invasive methods (see above). Then removing surface vegetation and surface soil can help provide further information to the excavator on the burial size and shape based on various factors such as soil color, composition, and surface features. For sites with a large surface area (e.g., to identify the spatial relationships between many burials in a cemetery), or those with heavy erosional deposits over the excavation area, cautious use of heavy machinery may be appropriate in order to minimize the excavation time in sterile soil conditions.

Once the boundaries of the burial(s) are identifiable, the excavator should record dimensions, depth from the surface, distance of the burial edge/corner points from the datum, orientation, and soil conditions. The feature should also be photographed with a North arrow, scale, and photo board with site and feature information as well as drawn/mapped to scale labeled with relevant site and feature information. Multiple photographs should be taken from various angles throughout the excavation process to ensure the feature is fully documented throughout.

Before proceeding to excavating the feature or any human remains and objects any further, excavation managers must consider the number of trained excavators available to work on burials and determine the order and time during which excavation progresses within mortuary features. The exposure of skeletal remains to air and sunlight should be minimized due to the risk of damage, so excavation should progress carefully and quickly with little to no interruption. If working within a cemetery with multiple burials, one should be completely excavated before proceeding to the next burial. Damage can also be limited during the course of excavations through protective measures such as using a sheet or tent as a sun shade to limit sun exposure.

Exposing the mortuary assemblage should be done by removing layer by layer the soil with small hand tools within the feature, carefully delineating the skeletal remains, leaving some buffer to prevent bones from being fully exposed until nearly the end of excavation. The excavator can limit the amount of friction and soil movement that could potentially damage the bones by starting to remove a layer of soil from the center of the burial outward. This will most likely expose the abdomen area, the bones of which are generally better interlocked in place, than the hands and feet, which should be exposed last due to their loosely connected nature. This is important not only to protect the bones but also to prevent any loose bones from moving out of context until they can be properly recorded. Notes should be taken throughout this exposure process, recording the soil characteristics and any objects or non-human bone found within the burial fill in regular intervals. Numerous aspects of the human skeletal remains must also be recorded, which may provide insight into cultural practices of funerary treatment when the mortuary data is later interpreted. These data include the position and orientation of the skeleton. The skeleton may be (a) supine, or on the back facing upwards, (b) prone, on the front facing downward, or (c) laying on the left or right side. The legs may be (a) extended, in which the legs are at an angle 180 degree to the axial skeleton, (b) flexed, in which the legs are at an angle less than 90 degree to the axial skeleton, or (c) semiflexed, in which the legs are at an angle between 90 and 180 degree from the axial skeleton. All burial fill should also be passed through a screen to ensure all small objects and bones are accounted for.

At this stage, if the skeleton has been selected to be sampled for ancient DNA or biogeochemical analyses, a sample of a fully documented bone or tooth may be taken using sterile surgical gloves to limit sources of contamination from the excavators. Once the feature is fully excavated, the excavator can then prepare the burial for exposing final details and photographing and mapping the assemblage. The protective soil around the assemblage and any remaining loose soil and excavation tools can then be completely removed so that all aspects of the assemblage can be visible for final *in situ* photography and drawing. The final exposure can be done with spoons, soft wooden/bamboo tools, and small brushes. Fine metal tools, such as dental tools, may be particularly helpful for detailed excavation work around bone in dense, clay soils, but they are otherwise generally to be avoided due to the risk of damaging bone should they make contact. As part of the final recording process, measurements for depth and distance from the datum should be recorded on each object within the burial as well as on the cranium and feet.

### ***Removal and Storage***

Removal of the skeleton can proceed once all recording and documentation has been completed. Removal should proceed as delicately as the exposure process. All objects and skeletal elements removed should be labeled. Bones should be labeled as they are removed with the site name, feature number, skeletal element name, date, and (if relevant) the left and right sides indicated. Ribs, hands, and feet of the left and right side should be stored in separate containers. There are numerous options for storage containers for human skeletal remains removed from excavation, including plastic resealable bags, acid-free paper bags, aluminum foil, and soft cotton padding. The choice of container is at the discretion of an osteologist or conservator who can determine which option will preserve the bone best given their condition during removal. Any fragile bone that is prone to be damaged can be preserved during the removal process by using soluble consolidant, which can be dissolved at any point in the future, such as in laboratory conditions, when the bones can be adequately protected during analysis.

Special care should be taken to ensure all elements are collected, including teeth, fetal bones, mineralized deposits (e.g., gallstones and kidney stones), ear ossicles, and small hand/foot phalanges. This process may be aided with screening the final soil from the burial. If the bones are firmly positioned in the soil, this process may involve loosening soil beneath the bones to detach them from the soil or block lifting by removing any element along with the soil it is attached to so that it can be excavated more delicately at a later time, perhaps in laboratory conditions. Any further cleaning or preparation of the bones for laboratory analysis or long-term storage should proceed in a shaded area and the bones should be allowed to dry fully for protection within storage. Ultimately, all elements of the assemblage should be stored in rigid, protective containers which are properly labeled in a secure and protected building. Proper storage and curation of the objects and remains ensure the continued protection of these mortuary materials, which allows them to be easily located based on excavation records and documentation. This process ensures that these individuals and their funerary assemblage are not lost so that they can continue to be treated with due respect and any further analysis can be undertaken efficiently and accurately.

### **Summary and Future Directions**

The study of human funerary practices and human remains through mortuary archaeology, has been a central area of study from the earliest research endeavors in archaeology and has evolved dramatically over time. From early antiquarian studies to constructing interactive 3D visualizations of mortuary spaces, the study of the dead and their funerary spaces has captivated scholars and the public alike for the richness of information they provide and their evocative human connection to the past. The present-day professional study of burials and cemeteries is a complex process that requires significant planning, ethical research design, and appropriate specialist knowledge and skills to ensure results maximize data and preservation while minimizing negative social impact. With the adoption of novel digital tools, mortuary archaeology is evolving into a discipline in which research is becoming increasingly less invasive and more accessible to wider audiences.

Present day mortuary archaeology has benefited from the adoption of new digital research technologies and approaches, both in terms of innovative research methods, but also in minimizing the invasive excavation approaches toward a more sustainable, accessible, and ethical professional practice. This is, of course, not to say that there are no remaining challenges as new responsibilities toward progress and minimizing negative social impact arise with each new approach or methodology adopted by the discipline. Some recent trends in the area of mortuary archaeology are detailed in the sections below, but this list is by no means a comprehensive overview of the state of the art.

In line with the digitization of mortuary archaeology research, there is a growing movement toward open-access and public scholarship that makes research more accessible to wider audiences, especially relevant scholarly and public stakeholders. Open-access is the practice of providing unrestricted access to scholarly material, including materials such as written research publications, data, statistical analysis code, and imagery. Improving the accessibility of mortuary archaeology research provides opportunities for transparency in research, which is educational to the wider public, an avenue for research practice accountability, and presents critical opportunities for scholarship to build on or undertake reproducibility studies.

In summary, in the future, I foresee more emphasis in three domains:

#### **Digital Archiving**

Invasive processes, such as excavating mortuary spaces, are not repeatable and often lead to the damage or destruction of the original context. This means that recorded observations become the only remaining data of any excavated feature. Archaeological data has increasingly been stored digitally with more open-access databases and data publishing resources available over time. Recent developments in the area of digital archiving have focused on making data interoperable such that data can be more easily found, there is more consistent comparability between data sets, and data descriptions are suitable for reproducible research practices (see **Richards et al., 2021; Williams and Atkin, 2015**).

#### **Remote Sensing**

Remote sensing in archaeology involves using imagery from satellite or aircraft scanning devices in order to document information about archaeological sites and features on the earth's surface. Although remote sensing is not a relatively new approach in archaeology, the application of remote sensing in endangered archaeological sites has been a powerful tool for identifying mortuary spaces that are at risk of damage due to various anthropogenic and environmental factors (see **Elfadaly et al., 2018; McKinnon and Haley, 2017**).

## Digital Visualizations

Developments in digital rendering have presented the opportunity to document and display imagery of mortuary spaces in three dimensions. As mentioned earlier, invasive excavation processes can leave little to no original context. 3D visualizations preserve burial spaces in the way they were originally found by excavators and are even measurable. 3D imagery also provides the additional opportunity for interactivity through Virtual Reality and Augmented Reality (see Gherardini et al., 2019; Mickleburgh et al., 2020).

## References

- Andrushko, Valerie Anne (2007) *The Bioarchaeology of Inca Imperialism in the Heartland: An Analysis of Prehistoric Burials From the Cuzco Region of Peru*. University of California, Santa Barbara.
- Arnold, Bettina (2007) Gender and archaeological mortuary analysis. In: Nelson, Sarah Milledge (ed.), *Women in Antiquity: Theoretical Approaches to Gender and Archaeology*. pp. 107–140, AltaMira Press, Plymouth.
- Ashmore, Wendy and Geller, Pamela L. (2005) Social dimensions of mortuary space. In: Rakita, Gordon F.M., Buikstra, Jane E., Beck, Lane A., Williams, Sloan R. (eds.), *Interacting With the Dead: Perspectives on Mortuary Archaeology for the New Millennium*. pp. 81–92, University Press of Florida, Gainesville.
- Bernbeck, Reinhard (2015) From imaginations of a peopled past to a recognition of past people. In: Van Dyke, Ruth M., Reinhard, Bernbeck (eds.), *Subjects and Narrative in Archaeology*. pp. 257–269, University Press of Colorado, Denver.
- Brown, James (1995) On mortuary analysis—with special reference to the Saxe-Binford research program. In: Beck, Lane Anderson (ed.), *Regional Approaches to Mortuary Analysis*. pp. 3–26, Springer, Boston.
- Caffell, Anwen and Jakob, Tina (2019) “The dead teach the living”: ethical considerations concerning the management of collections of human remains in universities. In: Squires, Kirsty, Errickson, David, Márquez-Grant, Nicholas (eds.), *Ethical Approaches to Human Remains: A Global Challenge in Bioarchaeology and Forensic Anthropology*. pp. 179–209, Springer International, Cham.
- Chapman, Robert (1981) Archaeological theory and communal burial in prehistoric Europe. In: Hodder, Ian, Isaac, Glynn, Hammond, Norman (eds.), *Pattern of the Past*. pp. 387–411, Cambridge University Press, Cambridge.
- Chesson, Meredith S. (2001) Social memory, identity, and death: an introduction. *Archeol. Pap. Am. Anthropol. Assoc.* 10 (1): 1–10.
- Colls, Caroline S. (2016) “Earth conceal not my blood”: forensic and archaeological approaches to locating the remains of Holocaust victims. In: Dreyfus, Jean-Mark, Anstett, Elisabeth (eds.), *Human Remains in Society: Curation and Exhibition in the Aftermath of Genocide and Mass-Violence*. pp. 163–196, Manchester University Press, Manchester.
- Curet, L. Antonio and Oliver, José R. (1998) Mortuary practices, social development, and ideology in Precolonial Puerto Rico. *Lat. Am. Antiq.* 9 (3): 217–239.
- de Tienda Palop, Lydia and Currás, Brais X. (2020) The dignity of the dead: ethical reflections on the archaeology of human remains. In: Squires, Kirsty, Errickson, David, Márquez-Grant, Nicholas (eds.), *Ethical Approaches to Human Remains: A Global Challenge in Bioarchaeology and Forensic Anthropology*. pp. 19–37, Springer International Publishing, Cham.
- Duday, Henri (2006) L’archéothanologie ou l’archéologie de la mort. In: Gowland, Rebecca, Knusel, Christopher (eds.), *Social Archaeology of Funerary Remains*. pp. 30–56, Oxbow, Oxford.
- Elfadaly, Abdelaziz, Attia, Wael, Qelichi, Mohamad Molaei, Murgante, Beniamino, and Lasaponara, Rosa (2018) Management of cultural heritage sites using remote sensing indices and spatial analysis techniques. *Surv. Geophys.* 39: 347–1377.
- Gherardini, Francesco, Santachiara, Mattia, and Leali, Francesco (2019) Enhancing heritage fruition through 3D virtual models and augmented reality: an application to Roman artefacts. *Virtual Archaeol. Rev.* 10 (21): 67–79.
- Goldstein, Lynne (1981) One-dimensional archaeology and multi-dimensional people: spatial organization and mortuary analysis. In: Chapman, Robert, Kinnes, Ian, Randsborg, Klavs (eds.), *The Archaeology of Death*. pp. 53–69, Cambridge University Press, Cambridge.
- Gregoricka, Lesley A. (2013) Geographic origins and dietary transitions during the Bronze Age in the Oman Peninsula. *Am. J. Phys. Anthropol.* 152 (3): 353–369.
- Howell, Todd L. and Kintigh, Keith W. (1996) Archaeological identification of kin groups using mortuary and biological data: an example from the American Southwest. *Am. Antiq.* 61 (3): 537–554.
- Knudson, Kelly J. and Stojanowski, Christopher M. (2008) New directions in bioarchaeology: recent contributions to the study of human social identities. *J. Archaeol. Res.* 16 (4): 397–432.
- Licata, Marta, Bonsignore, Alessandro, Boano, Rosa, Monza, Francesca, Fulcheri, Ezio, and Ciliberti, Rosagemma (2020) Study, conservation and exhibition of human remains: the need of a bioethical perspective. *Acta Biomed.* 91 (4): 1–10.
- Mattson, Hannah V. (2021) *Personal Adornment and the Construction of Identity: A Global Archaeological Perspective*. Personal Adornment and the Construction of Identity. Oxbow, Oxford.
- McKinnon, Duncan P. and Haley, Bryan S. (2017) New developments in archaeological remote sensing: an introduction. In: McKinnon, Duncan P., Haley, Bryan S. (eds.), *Archaeological Remote Sensing in North America: Innovative Techniques for Anthropological Applications*. pp. 1–8, University of Alabama Press, Tuscaloosa.
- Mickleburgh, Hayley L., Stutz, Liv Nilsson, Fokkens, Harry, Hansson, Joacim, and Svensson, Jonas (2020) Digital archaeology of death and burial: using 3D reconstruction, visualization and simulation to frame past experience. In: Hansson, Joacim, Svensson, Jonas (eds.), *Doing Digital Humanities: Concepts, Approaches, Cases*. pp. 121–145, Linnaeus University, Växjö.
- Mura, Sara (2022) Ethical considerations in narratives of death: the case of the Tophet. *Kleos* 5: 19–43.
- Nugent, Selin E. (2019) Pastoralism and emergent complex settlement in the Middle Bronze Age, Azerbaijan: isotopic analyses of mobility strategies in transformation. *Am. J. Phys. Anthropol.* 171 (1): 120–141.
- Pechenkina, Ekaterina A. and Delgado, Mercedes (2006) Dimensions of health and social structure in the early intermediate period cemetery at Villa El Salvador, Peru. *Am. J. Phys. Anthropol.* 131 (2): 218–235.

- Pluciennik, Mark (2015) Authoritative and ethical voices: from Diktat to the Demotic. In: Van Dyke, Ruth, M., Reinhard, Bernbeck (eds.), *Subjects and Narrative in Archaeology*. pp. 55–81, University Press of Colorado, Denver.
- Quinn, Colin P. and Beck, Jess (2016) Essential tensions: a framework for exploring inequality through mortuary archaeology and bioarchaeology. *Open Archaeol.* 2 (1): 18–41.
- Richards, Julian D., Jakobsson, Ulf, Novák, David, Štular, Benjamin, and Wright, Holly (2021) Digital archiving in archaeology: the state of the art. Introduction. *Internet Archaeol.* 58.
- Saxe, Arthur Alan (1970) *Social Dimensions of Mortuary Practices*. University of Michigan, Ann Arbor.
- Sayer, Duncan (2010) *Ethics and Burial Archaeology*. Duckworth, London.
- Smith, Sian E. and Hirst, Cara S. (2020) 3D Data in human remains disciplines: the ethical challenges. In: Squires, Kirsty, Errickson, David, Márquez-Grant, Nicholas (eds.), *Ethical Approaches to Human Remains: A Global Challenge in Bioarchaeology and Forensic Anthropology*. pp. 315–346, Springer International, Cham.
- Swain, Hedley (2002) The ethics of displaying human remains from British archaeological sites. *Publ. Archaeol.* 2 (2): 95–100.
- Swerida, Jennifer and Nugent, Selin E. (2019) Fashioned identity in the Şorur Valley, Azerbaijan: kurgan CR8. In: Cifarelli, Megan (ed.), *Fashioned Selves: Dress and Identity in Antiquity*. pp. 11–26, Oxbow, Oxford.
- Weiss-Krejci, Estella (2011) The formation of mortuary deposits: implications for understanding mortuary behavior of past populations. In: Agarwal, Sabrina C., Glenncross, Bonnie (eds.), *Social Bioarchaeology*. pp. 68–106, Wiley-Blackwell, Chichester.
- Williams, Howard and Atkin, Alison (2015) Virtually dead: digital public mortuary archaeology. *Internet Archaeol.* 40.
- Wrobel, Gabriel D. (ed.) (2014) *The Bioarchaeology of Space and Place: Ideology, Power, and Meaning in Maya Mortuary Contexts*. Springer Science & Business, New York.