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"Pars Pro Toto" and Personhood in Roman Cremation Ritual: New Bioarchaeological Evidence for the Rite of "Os Resectum"

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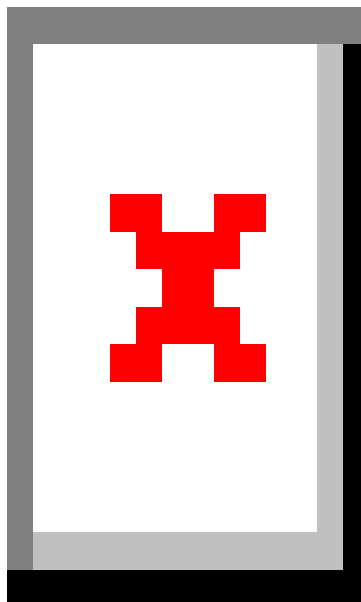


**Pars pro toto and personhood in Roman cremation ritual:
new bioarchaeological evidence for the rite of os resectum**

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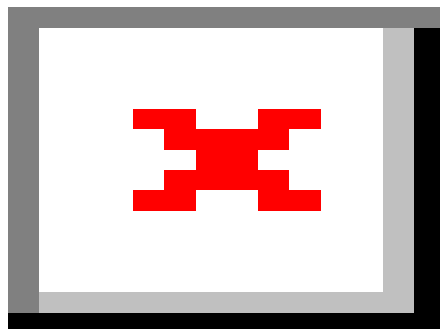
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Cremated remains of the Broadway cremation: (1) cranial fragments, (2) unidentified human skeletal fragments, (3) mandible fragment, (4) vertebral fragments, (5) rib fragments, (6) unidentified human long bone fragments, (7) femoral fragments, (8) pelvic fragments, (9) tibia fragments, (10) fibula fragments and (11) proximal and intermediate hand phalanges (probable os resectum) (photograph by A.T. Chamberlain).

221x320mm (180 x 180 DPI)



Ventral view of the proximal and intermediate hand phalanges of the Broadway cremation (radial tubercle indicated by white arrow; photograph by A.T. Chamberlain).

197x128mm (180 x 180 DPI)

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4 ***Pars pro toto* and personhood in Roman cremation ritual: new**
5 **bioarchaeological evidence for the rite of *os resectum***
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33 **Running Title:** New bioarchaeological evidence for the rite of *os resectum*
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37 **Keywords:** Romano-British; partibility; funerary ritual
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Abstract

Os resectum, or ‘cut bone,’ is an obscure Roman funerary rite known primarily from literary sources. To date, archaeological examples have been recovered from Rome, Ostia, Herculaneum, and Pithekoussai, but none have been positively identified in the western provinces of the Roman Empire. This paper presents bioarchaeological evidence concerning an unusual pattern of preservation for the bones of a single finger in a burial from a late second to mid-third century A.D. cemetery in the Roman colony of Lincoln, England. It explores the implications of this evidence for the identification and performance of *os resectum*, and for understanding rites of passage surrounding Roman death. As well as revealing the value of integrating scientific and theoretical perspectives in the investigation of questions surrounding ritual behavior, it is argued that *os resectum* provides evidence to support the presence of a widespread concept of somatic partibility at the heart of Roman forms of personhood.

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3 During a reappraisal of Roman cremation burials from northern England, an intriguing pattern of
4 preservation was detected involving the bones of a single finger in a burial from a late second to
5 mid-third century A.D. cemetery in Lincoln. It is the contention of the authors that this discovery
6 represents an example of *os resectum* ('cut bone'), a funerary rite known principally from
7 Roman literary sources which has not been positively identified in the western provinces of the
8 Roman Empire (although see Devillario 1884; Simon-Hiernard 1987 for two potential cases in
9 Gaul). This paper explores the implications of the bioarchaeological evidence from this burial for
10 current understandings of the rite of *os resectum*, contextualizing it in relation to both Roman
11 experiences of personhood that drew upon concepts of somatic fragmentation and partibility, and
12 acts of purification and rites of passage surrounding death. We begin with a brief overview of the
13 processes connected with Roman cremation rites, followed by an outline of the historical and
14 cultural context associated with the cremation burial from Roman Lincoln. The focus of the
15 paper then shifts to a bioarchaeological assessment of the cremation burial itself and the extant
16 literary and archaeological evidence for the Roman rite of *os resectum*, including its significance
17 for understanding Roman concepts of personhood.
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40 **Biocultural and Historical Contexts: The Roman Rite of Cremation**

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42 According to literary sources, the early Romans had traditionally inhumed their dead (Toynbee
43 1971; Morris 1992). Pliny the Elder (*Naturalis Historia* 7.187) and Cicero (*De Legibus* 2.22.56)
44 assert that cremation burial did not emerge until the Republic (a period traditionally dated from
45 c. 509 to 27 B.C.). According to Pliny the Elder, it was the unintended consequences of
46 territorial expansion that prompted the shift—as Roman soldiers fell and were subsequently
47 buried on foreign soil, Rome received distressing reports of conquered peoples desecrating the
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3 remains of the war dead. The rites of disposal were modified in response to this defiant behavior,
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5 and cremation burial became widely adopted in order to diminish opportunities for vandalism
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7 (Pliny *Naturalis Historia* 7.187; see also the example of Sulla: Cicero *De Legibus* 2.22.56). The
8
9 archaeological record, however, reveals that burials recovered from the Forum Romanum, in the
10
11 center of Rome, indicate that both cremation and inhumation were practiced concurrently there
12
13 from the eighth through the sixth centuries B.C. (Toynbee 1971:39), with cremation becoming
14
15 the dominant rite in Rome sometime during the middle to late Republic (Hope 2009:81; Graham
16
17 and Hope 2016:162).

21
22 Cremation burial at Rome was a lengthy and complex process (Habinek 2016; McKinley
23
24 2017). After the preparation of the body and a period of lying-in-state, the rite itself commenced
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26 with a procession which started at the home of the deceased and ended at a pyre site beyond the
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28 city walls (Cicero *De Legibus* 2.23.58; Noy 2000a). There, the clothed body and its
29
30 accompanying funerary goods (occasionally elaborate, see Lucan *Pharsalia* 9.175) were placed
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32 on a pyre constructed of interlaced layers of logs (Vitruvius *De Architectura* 2.9.15; Noy 2000b).
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34 Once the body and its accoutrements were in place, a close relative of the deceased ignited the
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36 pyre, which took an estimated 7–10 hours to burn completely (McKinley 1989; Noy 2005). The
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38 mourners were said to have kept vigil until the flames were extinguished with water or wine
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40 (Virgil *Aeneid* 6.226). The remains were subsequently interred either at the pyre site (described
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42 as a *bustum* burial, whereby the remains fell directly into a pit beneath the pyre which was then
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44 covered with soil) or, more commonly, collected for burial elsewhere (McKinley 2000; Noy
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46 2000a).

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52 Cremation burial, whether practiced at Rome or in the provinces, was an inherently
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54 selective process, since an individual, or group of individuals, was required to take responsibility
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3 for collecting the cremated remains and depositing them in a receptacle (McKinley and Bond
4 2001). These receptacles usually took the form of a ceramic or glass urn, but sometimes a bag or
5
6 wooden box might have been used. On other occasions the remains were deposited in an earthen
7
8 pit without any protective container. In both cases the cremated remains might be accompanied
9
10 by additional grave goods (McKinley 1994a). The fragments of bone found within these
11
12 containers and graves typically represent a random and incomplete assortment of skeletal
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14 elements (McKinley 2000; Cerezo-Román et al. 2017). Furthermore, it was common for the
15
16 remnants of pyre debris and pyre goods to be included amongst the remains placed inside the urn
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18 (McKinley 2004a).
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24 Cremation burial remained common across much of the Roman west until at least the
25
26 third century A.D., when inhumation once again became the dominant rite (Jones 1981; Graham
27
28 2015). Beginning in Rome around the late first and early second century A.D., the shift was not
29
30 instantaneous but it was widespread. Although the reasons behind this change continue to be a
31
32 matter of debate, ranging from the adoption of new religious beliefs or cultural mores to novel
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34 forms of elite competition (Toynbee 1971; Nock 1972; Graham 2015), what is clear is that
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36 inhumation was never again superseded during the period of Roman domination in Europe.
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42 **Roman Lincoln and its Cemeteries**

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44 The remains of the individual cremation burial in this study were recovered from a site
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46 associated with *Colonia Domitiana Lindensium*, also known as *Lindum* (modern Lincoln), in the
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48 Roman province of *Britannia* (Fig. 1). Only three *coloniae*, a form of high-status settlement,
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50 were established in the province (a fourth settlement at York was promoted to the same status in
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52 the third century: Millett 1990:91). These newly-founded cities, which were part of a wider
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3 imperial strategy for provincial government, were often created in locations that had been
4 occupied by military fortresses and were populated, at least initially, by discharged army
5 veterans holding Roman citizenship (Mattingly 2006:192). The colony at Lincoln was
6 established at the end of the first century, possibly around A.D. 90 (Jones 2004; Mattingly 2006:
7 272; Millett 1990 suggests *c.* A.D. 90–96) and its early community included veterans from the
8 Ninth Legion *Hispana*, who had previously occupied the fortress on the site (Jones 2003). With a
9 population of 10,000–12,000 residents, the colony at Lincoln was not one of the largest cities of
10 Roman Britain. However, the community was diverse, composed of immigrant traders,
11 merchants, government officials, and craftsmen in addition to ex-military personnel and
12 members of pre-existing local communities (Jones 2002).
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26 As with all Roman cities, cemeteries soon emerged on the outskirts of Lincoln, beginning
27 with those associated with the fortress to the south of the colony but later extending to all the
28 major roads leading away from the city (Fig. 2). The graves identified within these cemeteries
29 reflect a mix of Roman and pre-Roman practices, although strong Mediterranean influences can
30 also be detected, including two subterranean mausolea (Jones 2003), which may represent
31 *columbaria*. This form of collective burial chamber, a particular product of the social landscape
32 of Augustan-period Rome, was not employed in its true form outside of the city of Rome itself
33 (Borbonus 2014). However, the term is commonly used to describe similar mausolea from
34 Roman-period Italy (and elsewhere) that were designed for the communal burial of cremated
35 remains. Gravestone evidence from Lincoln reveals that some of the ex-legionaries originated in
36 the regions of modern Macedonia, Spain, and Italy, and many others would have experienced
37 Mediterranean culture before being posted to Britain (Jones 2003). Jones (2002) has suggested
38 that the influence of Mediterranean culture imported by these soldiers, and later merchants and
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3 craftsmen who flocked to the colony, may have been dominant for a generation or two before a
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5 new sense of Romano-British identity began to develop amongst their descendants. However, he
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7 also observes (2002:144) that the nature of graves as a whole is “very much in the Roman mould,
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9 with parallels in north-east Gaul.” Roman burial traditions were evidently widely adopted and,
10
11 most importantly, continued for some time at Lincoln, perhaps a reflection of its cosmopolitan
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13 history. Indeed, Mattingly (2006:192) has suggested that the influx of discharged veterans to
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15 colonies such as Lincoln probably continued for some time after they had been established, with
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17 veterans and their citizen families, accustomed not only to a military lifestyle but to a *Roman*
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19 military lifestyle, “being attracted by the concentration of ex-soldiers” and, in turn, serving to
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21 perpetuate the strong “military character of such sites” for several generations. The shift from
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23 cremation to inhumation occurred at the colony, as for other cities in the province, during the
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25 third century A.D. when inhumations begin to appear alongside earlier cremation burials (Jones
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The Broadway Cremation Burial

The cremation burial which forms the focus of this discussion was found at 43 Broadway,
Lincoln, close to the modern Newport Cemetery and within one of the known concentrations of
burials clustered along Ermine Street to the north of the colony (Fig. 2). The burial deposit was
donated to the Lincolnshire Museum (now The Collection) in 1953 but appears not to have been
recorded by publication. Several years later two late second to mid-third century cremations,
interred in cooking pots, were found approximately 100 m away (Goodburn et al. 1976), and a
fragment of a Roman tombstone was later recovered very close to the previous finds (White
1977). Together with inhumation burials reported from the same area, these finds indicate the

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3 presence of a second/mid-third century A.D. cemetery of indeterminate size in this area of
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5 Lincoln (Jones 2002), including the Broadway burial.
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8 The Broadway burial yielded the cremated remains of a single adult (Fig. 3; note that the
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10 recording form is permanently available at the D-Scholarship@Pitt data repository and can be
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12 accessed at: <http://d-scholarship.pitt.edu/33993>). The individual was assessed as an adult on the
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14 basis of completed epiphyseal union (Scheuer and Black 2000), but sex was not assigned due to
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16 a lack of identifiable sexually dimorphic features. Although the burial deposit did not contain
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18 pyre debris, it did include a piece of bronze that had melted against a rib, together with sherds
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20 from the rim of a greyware ceramic vessel. The bronze fragment probably represents a remnant
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22 of a pyre good. It is possible that the rim sherds are fragments from a burial urn which was not
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24 noted as being present when the burial was donated to the Lincolnshire Museum.
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28 The total weight of all the cremated materials in the Broadway burial was 376 g with the
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30 total weight of the cremated bone 371 g. The latter value is substantially below the expected
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32 weight of a modern adult cremation (approximately 1000–2400 g), but is within the observed
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34 range of Romano-British cremation burials (McKinley 1993, 2004b). At the time of analysis, the
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36 largest bone fragment had a maximum dimension of 42 mm, which is close to the average
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38 maximum fragment size reported by McKinley (1994b) for British cremation burials of 45 mm.
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42 The color of cremated bone often provides an indication of its extent of oxidation, or ratio
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44 between organic and inorganic components (Ellingham et al. 2015). The oxidation of bone is a
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46 multifactorial process (Walker et al. 2008; Reidsma et al. 2016), typically determined by
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48 exposure temperature, exposure duration, positioning relative to the heat source, and the
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50 availability of oxygen (Ellingham et al. 2015). Nevertheless, bone goes through a series of color
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3 changes as it oxidizes (Shipman et al. 1984; Buikstra and Swegle 1989; McKinley 2004a;
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5 Ubelaker 2015), which Ellingham and colleagues (2015:182) describe as follows:
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8 Fresh bone normally exhibits a light ivory colour, which turns over brown into black as a
9
10 result of carbonization, the incineration of organic materials of carbon and collagen. The
11
12 next stage in the combustion process is the pyrolyzation of organic compounds, resulting
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14 in a grey shading of the bone, which then gives way to the bone becoming white,
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16 signaling calcinations and a complete loss of organic compounds and fusion of bone
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18 mineral.
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21 Unlike cremation burials from earlier periods, including Bronze Age Britain, it is common for
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23 Romano-British deposits to be incompletely oxidized (McKinley 2000, 2015) and the Broadway
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25 burial is no exception. Although fragments ranged in color from white to dark grey, the majority
26
27 were white (fully oxidized), while fragments of the tibiae, skull and unidentified fragments
28
29 exhibited light grey patches. Two hand phalanges (proximal and intermediate, their relative sizes
30
31 suggesting that they belong to the same single finger) were primarily dark grey in color (Figs. 3
32
33 and 4). The asymmetry of the base of the proximal phalanx, which exhibits a more prominent
34
35 radial tubercle (Fig. 4), indicates that the phalanx is likely to be from a finger of the left hand
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37 (Garrido Varas and Thompson 2011:132). Although the articular surfaces where the phalanges
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39 would have articulated are missing, the ratio of the midshaft mediolateral diameters of the
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41 intermediate and proximal phalanges is 81%, consistent with their being derived from the same
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43 individual digit (Garrido Varas and Thompson 2011).
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49 In addition to color, three other heat-induced changes are commonly visible in cremated
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51 bone. These changes—shrinkage, fissuring, and warping—attest to the level of dehydration of
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53 the bone and the alteration and loss of the organic components of the bone tissue. Moreover,
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3 examples of each type of heat-induced change are typically noted during the analysis of
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5 cremation burials (Shipman et al. 1984; McKinley 2004a; Schmidt and Symes 2015). A
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7 qualitative appraisal of the Broadway burial revealed that all of the cremated bones exhibited
8
9 these changes with the exception of the two hand phalanges. The phalanges appeared to display
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11 little or no shrinkage and less fissuring relative to the other skeletal elements, suggesting that
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13 they had not been heated to the same high temperatures as the other remains.
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17 Furthermore, although fragments from the skull, axial skeleton, and appendicular
18
19 skeleton were present in the cremation burial, the only identifiable skeletal elements from the
20
21 upper limbs were the aforementioned hand phalanges. This is unusual because these phalanges
22
23 seem to represent a single finger. The uniqueness of the phalangeal alterations are especially
24
25 unusual because “cremation burials generally comprise, apparently, a random selection of bone
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27 fragments from all skeletal areas” (McKinley 2004b:298).
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33 ***Os Resectum* and Roman Rites of Purification**

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35 The consistency in the size ratio of the phalanges, and the distinctive pattern of preservation of
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37 the finger bones, together with the absence of other identifiable bones of the hands or arms,
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39 indicates differential treatment of body parts that is a characteristic of the rite of *os resectum*.
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41 Evidence for the rite of *os resectum* (‘cut bone’) is provided initially by Cicero (*De Legibus*
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43 2.22.55), Varro (*De Lingua Latina* 5.23), and Festus (*Frag. ex apogr.* 62). Although Varro refers
44
45 to the rite as *os exceptum*, rather than *resectum*, his text clearly describes the same custom as
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47 Cicero and Festus. Festus provides the specific detail that a corpse may only be legitimately
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49 burnt once a finger has been removed and set aside. Unfortunately the writings of these three
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51 ancient authors provide little in the way of comprehensive information concerning the manner in
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3 which the rite itself was performed, or indeed whether it was performed at all social levels.
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5 Archaeologically attested examples of *os resectum* from Roman Italy are also relatively scarce
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7 (see below). However, the evidence they provide aligns sufficiently with the written sources to
8
9 corroborate the accounts composed by these Republican and Imperial period authors, verifying
10
11 that they do not merely report a rite that was an antiquated oddity, but an activity which
12
13 continued to be a ritual reality for at least some funerals well into the Imperial period. The most
14
15 notable discovery was made in the vineyard of San Cesareo on the Via Appia immediately
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17 outside Rome in 1732. Antiquarian explorations of this site uncovered approximately 300 small
18
19 single-handled ceramic jugs, each inscribed with the name of an individual and a range of
20
21 specific dates within the Roman calendar (*CIL* VI² 8211–8397; Montalto Trentori 1937–1938;
22
23 Bruni 1997). Together they can be securely dated to the second/first century B.C. on stylistic
24
25 grounds and the use of the pre-Caesarean calendar. Each vessel was also found to contain one or
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27 two fragments of burnt human bone (Baldini 1738 cited in *CIL* VI² 1103; unfortunately the bones
28
29 were subsequently lost). Baldini linked the discovery with the custom of *os resectum* as outlined
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31 in the written sources, acknowledging but evidently overlooking the fact that they had been
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33 burnt, contra to what is suggested by Festus. Since then, San Cesareo has continued to act almost
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35 as a type site for the rite, with the individually labeled vessels sometimes being interpreted as an
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37 element essential for its identification (e.g. Messineo 1995, 1999). This is proved not to be the
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39 case by other examples of *os resectum* that have been identified elsewhere at Rome, Ostia,
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41 Herculaneum, and Pithekoussai (Campana 1852; Becker 1995; Grévin 1997; Pappalardo 1997;
42
43 Carbonara et al. 2001).

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45 The example from Herculaneum is particularly intriguing because it belonged to the
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47 senator Marcus Nonius Balbus, one of the leading members of the local community during the
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3 Augustan period (27 B.C.– A.D. 14). Beneath a commemorative altar dedicated to the memory
4 of Balbus that was raised on the town's seafront, an urn was found to contain two layers of pyre
5 debris with a single hand phalanx placed between the layers (Grévin 1997). No other bone was
6 present within the urn. To some extent this parallels the examples from San Cesareo, which were
7 also deposited unaccompanied within individual vessels. Moreover, it demonstrates a degree of
8 associated monumentality that points towards a very specific use of *os resectum* within
9 communal remembrance activities that were focused on the socially distributed personhood of
10 one person of particular significance to the local community (Graham 2009). Other
11 archaeological examples of the rite reflect varying patterns of deposition as well. For example, at
12 Pithekoussai the bone was deposited in the primary cremation urn with the other cremated
13 remains (Becker 1995), whereas in the early imperial period *columbarium* of Pomponius Hylas
14 at Rome a small pit beneath the tomb floor was found to contain what appears to be a communal
15 deposit of burnt bones belonging to multiple individuals (Campana 1852). Neither site appears to
16 have attracted the same sort of targeted monumental commemoration as that of Nonius Balbus at
17 Herculaneum. Regardless, there appears to have been no standardized manner in which to
18 deposit the bone or bones connected with *os resectum*, indicating that it was most likely to have
19 been the performance of the rite itself that was deemed to be of significance, rather than the
20 subsequent burial or disposal of the skeletal elements around which those activities had unfolded.
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44 Questions also remain with regards to the social and/or legal status of those who
45 practiced the rite. Marcus Nonius Balbus was a wealthy Roman citizen and senator, as well as
46 the celebrated patron of the town of Herculaneum, but the texts catalogued for 186 of the vessels
47 from San Cesareo appear to point towards a group of ordinary freeborn and freed (formerly
48 enslaved) people (Graham 2011:98). During the middle and late Republic, when these vessels
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3 were inscribed, the *tria nomina* had not yet become the standard means by which to publically
4 express Roman citizenship, rendering the social status of many of these individuals uncertain.
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6 Most bear only *praenomen* and *nomen* with no indicator of legal status, but at least 22 (including
7
8 four women) record their status as freedmen or freedwomen, while at least seven others use the
9
10 abbreviation of *filius* or *filia* to indicate that they were a freeborn son or daughter. Although the
11
12 repeated use of single names may possibly indicate the presence of enslaved people this is not
13
14 possible to prove based on the available evidence. Moreover, most of the single names on the
15
16 San Cesareo vessels belong to women, following the tradition of using only family names
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18 (*nomen*, e.g. Caecilia, Iunia, Lucretia) for women of this period. The evidence is therefore
19
20 difficult to interpret, although it might be reasonable to assume that *os resectum* was practiced
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22 across the social spectrum, albeit potentially very unevenly. Similarly, although *os resectum* can
23
24 be attested at some sites across central and southern Italy it is difficult to determine how
25
26 geographically widespread the practice was, or to what extent or by whom it was adopted beyond
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28 the immediate hinterland of Rome or the Italian peninsula. On the other hand, two potential
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30 instances have been described for cremation burials in imperial period Gaul, namely an unburned
31
32 human finger (Devillario 1884) and an unburned human foot (Simon-Hiernard 1987).

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34 It has been proposed (Toynbee 1971; Becker 1988; Messineo 1995, 1999; Hope 2000)
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36 that the rite of *os resectum* was closely associated with the Roman tradition of providing the
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38 corpse with a proper religious burial, which Horace (*Odes* 1.28) described as providing the body
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40 with a symbolic covering of earth which would allow the soul to rest peacefully. Such activity
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42 was impossible in instances of cremation because the body had already been transformed and
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44 broken down by fire when it came to be interred, leading to the suggestion that *os resectum*
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46 offered the opportunity for a separate interment that would satisfy these strict religious demands.
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3 It was able to do this by acting as a substitute for the whole body, drawing on wider cultural
4 traditions concerning the concept of *pars pro toto* ('a part for the whole'; discussed further
5 below). However, re-investigation of the rite has revealed that it is more likely that the *pars pro*
6 *toto* significance of *os resectum* lay within the ceremonies of purification that followed the
7 cremation of the remainder of the corpse (Graham 2009, 2011). Rather than associating *os*
8 *resectum* with proper disposal, Varro (*De Lingua Latina* 5.23) notes that the bone removed from
9 the corpse was "kept out for the ceremony of purifying the household," and that if this was not
10 carried out the family was compelled to remain in a state of spiritually polluted mourning
11 (*funesta*). Traditionally, mourners were released from this state nine days after the burial when
12 they returned to the grave to perform a ceremony known as *suffitio*, which was an essential
13 cleansing ritual involving fire and water (Lindsay 2000; Lennon 2013). In light of Varro's
14 comment, it seems probable that before the corpse was removed from the home in order to be
15 transported to the pyre site for cremation, the element required for the *os resectum* rite was
16 detached from the body, remaining in the possession of the family or within the house for later
17 use within the purification ceremony, at which point it would act in a *pars pro toto* capacity as a
18 proxy for the polluted body and soul of the deceased (Graham 2009:56–57). During the
19 ceremony of *suffitio*, the mourners consumed another funerary meal, made offerings to the
20 ancestors, and were purified by the dual action of coming into contact with water sprinkled from
21 a laurel branch and stepping over fire. This ritual may have been comparable with Ovid's (*Fasti*
22 4.721–806) description of similar cleansing rituals performed each year on 21st April as part of
23 the *Parilia* festival. He notes that on this occasion "Sure it is that I have leaped over the flames
24 ranged three in a row, and the moist laurel-bough has sprinkled water on me" (4.727–728), and
25 exhorts the reader to "leap with nimble foot and straining thews across the burning heaps of
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3 crackling straw” (4.781–2). The possibly similar activities of *suffitio* represent part of the rites of
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5 passage that surrounded death (Van Gennep 1960; see also Lennon 2013:144–145), being
6
7 performed in order to remove the living mourners, as well as the soul and body of the deceased,
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9 from the polluted marginal zone that they inhabited temporarily during the *funesta* and, through
10
11 rites of incorporation, (re)assimilating them into the community to which they rightfully
12
13 belonged (Graham 2011). The liminal zone of the *funesta* existed only by virtue of the co-
14
15 presence of mourners and corpse, as mutually polluted and polluting agents, hence both parties
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17 must be purified simultaneously in order for it to effectively dissolve and allow each member to
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19 (re-)enter the appropriate social community. Since the deceased, present at the ceremony of
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21 *suffitio* in the form of the retained *os resectum*, was also required to be subject to the same ritual
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23 cleansing process, the bone may have been placed in the purifying flames over which the living
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25 mourners were required to step, so that it too was a mutual recipient of the full lustration.
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31 The evidence recovered from San Cesareo, where the bones were found to have been
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33 subjected to an unknown degree of burning, goes some way to supporting this (Graham 2011).
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35 First, it is possible that the small inscribed vessels in which they were found were used to store
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37 the *os resectum* in the intervening period between its removal and the performance of *suffitio*.
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39 The names and dates perhaps indicate that these people were members of a burial club, whose
40
41 members performed the necessary rites for the deceased, instead of the family, and who would
42
43 have needed to keep track of when and for whom such purification activities needed to take
44
45 place. Secondly, and more pertinently, the condition of the bones themselves is suggestive. If the
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47 intention was to remove the finger prior to cremation for separate inhumation as an intact,
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49 unchanged element of the body, then these bones should demonstrate no evidence of subjection
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51 to heat. However, if *os resectum* entailed the purification of the body part in the *suffitio* fire, as
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3 outlined above (see also Graham 2009, 2011), then we would expect to be able to identify
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5 evidence for exposure to high temperatures albeit perhaps for a brief interval of time. In the case
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7 of the San Cesareo bones, these were certainly described by their finders as having been burnt
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9 (Baldini 1738 cited in *CIL* VI² 1103). Of course, these bones could have been collected
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11 subsequent to the incineration of the entire corpse, in which case any signs of burning would
12
13 have been the result of the act of proper cremation. However, because the fire used for the
14
15 ceremony of *suffitio* was designed for the mourners to step over safely it would be unlikely to
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17 have reached the same high temperatures as the cremation pyre, indicating that it should be
18
19 possible to identify whether bones such as these received differential treatment from the rest of
20
21 the corpse in terms of exposure to heat. In other words, rather than being fully oxidized, any
22
23 bones that had been retained for participation in a *suffitio* ceremony would be incompletely
24
25 oxidized. Indeed, it remains a possibility that the San Cesareo bones were described as ‘burnt’ by
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27 the early eighteenth century antiquarians who recovered them precisely because, in the absence
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29 of modern scientific techniques, this was the impression that was given by their color, which
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31 may in turn suggest that they were grey or black. Such coloring, as noted above, would indicate
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33 charring rather than full oxidization.
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40 Once the *os resectum* had been purified it was subsequently inhumed or otherwise
41
42 interred, thus completing the disposal process. In the case of the remains from San Cesareo and
43
44 Herculaneum the now charred bones were placed in identifiable vessels that may have played a
45
46 direct role in later commemorative activities (Graham 2009, 2011). As noted above, separate
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48 interment was evidently not an essential element of the rite and, given the fact that so few
49
50 depositions of this nature have been recognized within the archaeological record, it is perhaps to
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52 be expected that in most instances the retained bone was reunited with the other remains of the
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3 corpse within the primary cinerary urn, as at Pithekoussai. Very few cinerary urns have been
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5 micro-excavated: typically the urn contents are analyzed as a single assemblage, and as a result,
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7 *os resectum* becomes very difficult to identify archaeologically. This may explain the emphasis
8
9 placed upon the more unusual and highly visible examples of the rite known from San Cesareo
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11 and Herculaneum within existing accounts of *os resectum*, but if many further examples remain
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13 hidden amongst cremation assemblages then *os resectum* may have been far more widely
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15 practiced than previously thought.
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22 **The Broadway Cremation Burial as Evidence for Ritual**

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24 This possibility brings us back to the two incompletely oxidized hand phalanges from the
25
26 cremation burial at Lincoln and their potential interpretation as evidence for the rite of *os*
27
28 *resectum* in a Roman provincial setting. First, the markers of differential heat exposure were, by
29
30 necessity, measured in a qualitative rather than a quantitative manner. Quantitative measures of
31
32 bone crystallinity, such as those provided by FTIR and Raman Spectroscopy, have proved to be
33
34 very useful in determining differential heat exposure in the study of experimentally heated fresh
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36 bone and by implication can be applied to burnt bone recovered from forensic contexts and from
37
38 recent mass disaster incidents. Although these techniques have been applied to archaeological
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40 assemblages (e.g. Squires 2015), Ellingham and colleagues (2015:186–187) have noted, “FTIR
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42 spectra of archaeological, diagenetically altered bone can mimic the spectra of low to medium
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44 temperature exposed bone as diagenesis, like burning, causes the disintegration of the organic
45
46 components.” In the future it may be possible to apply these quantitative methods of analysis to
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48 the investigation of differential burning in samples of archaeological materials, but they were not
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50 appropriate for the study of the Broadway burial.
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3 Next, some alternative explanations for the phalanges incomplete oxidization must be
4 considered. It might be suggested, for example, that as extremities of the body the phalanges
5 recovered from 43 Broadway simply lay in the cooler outer parts of the pyre, and were thus not
6 subjected to the extreme temperatures at its heart. It has certainly been noted (Mays 1998:220)
7 that the extremities of a corpse and those areas lacking high fat content tend to burn less
8 efficiently than other elements of the skeleton, and that the small bones of the hands and feet
9 may also fall into the cooler parts of the pyre. However, if this was the case for the Broadway
10 cremation we might expect to find a random assortment of other phalanges, including both
11 fingers and toes, as well as other charred elements of the distal parts of the limbs within the
12 cremation burial, since they too would have been located towards the edge of the pyre. Similarly,
13 while there could have been deliberate selection of particular cremated remains for inclusion in
14 the burial deposit, it would be remarkable for only a single digit to be collected when other finger
15 and toe bones are likely to have had a similar appearance and would have lain in the same area of
16 the extinguished pyre. The presence of two potentially articulating phalanges, and the absence of
17 others, therefore remains curious and an alternative explanation must be sought.

18
19 Although the phalanges cannot conclusively be assigned to a single finger (as phalanges
20 from adjacent digits of the same hand are sometimes indistinguishable) the osteological evidence
21 is consistent with this interpretation. Furthermore, it aligns with the written sources for the
22 removal of a single digit in the rite of *os resectum*. Placing this unusual find in the context of this
23 mortuary rite may shed further light on it, since the rite of *os resectum* was inextricably linked to
24 the removal of a finger for ritual purposes. It is unclear how this finger, represented in the
25 Broadway burial by two phalanges, was removed from the hand since there is no clear evidence
26 of cut marks. There is, however, postmortem damage to the ventral aspect of the base of the

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3 proximal hand phalanx, and this missing portion might have contained cut marks—especially if
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5 the original cut was initiated from the palmar surface of the hand. Furthermore, a skilled
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7 dissector can remove an appendage by cutting through the joint cartilage without causing
8
9 damage to the adjacent bones (for minimal presence of cut marks in some Romano-British
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11 instances of dissection and decapitation, see Reece 1988:98; Tucker 2014). Regardless of how it
12
13 was removed, the ritual process described above indicates that the finger would subsequently
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15 have received different treatment from the rest of the corpse, which was cremated on the pyre,
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17 and this is what appears to have occurred in the case of the individual buried at 43 Broadway. In
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19 this scenario, the finger would subsequently have been reunited with the body in the context of
20
21 the burial urn, as witnessed in other examples. Although the finger from Lincoln appears
22
23 incomplete as it is ostensibly missing its distal phalanx, it is possible that this small and fragile
24
25 finger bone is indeed present in the burial, but fragmented beyond the point of identification.
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31 Contextualizing these remains in relation to the purification ceremony known as *suffitio*,
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33 is also useful. We might expect a pyre to reach temperatures in excess of 600–700°C, whereas
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35 the fire used for the ceremony of the *suffitio* outlined above would have been considerably
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37 smaller in size and lower in temperature, given that it was a ritual fire that had to be small
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39 enough for mourners to pass over safely, perhaps achieving a maximum temperature of 200–
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41 400°C. Werts and Jarhen (2007:857) explain that such a temperature is “more than sufficient for
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43 the boiling of water, or the reducing of fluids, however, these temperatures are not high enough
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45 for the flaming combustion of wood.” Such a fire would have been ideal for the purificatory
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47 purposes of *suffitio*. The lower temperatures of the fire and, presumably, shorter exposure time
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49 would have rendered the bones incompletely oxidized at the most. Consequently, bones that had
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51 been used in this way would exhibit the features described for the phalanges from the Broadway
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3 cremation burial, where osteological analysis suggests that the finger was subjected to heat, but
4 to a different extent than the other remains within the burial. Placing this burial in such a context
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6 may explain why these two small bones not only exhibit different characteristics from the other
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8 remains within the same burial, but also why it is a digit that displays differential treatment
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10 rather than any other element.
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15 Despite the paucity of other recorded instances of *os resectum* outside of Italy we should
16 perhaps not be surprised to find this rite being performed at Lincoln given the cosmopolitan
17 nature of the community and the history of the colony. Other traditionally Mediterranean
18
19 funerary activities have been identified in the city, including the construction of mausolea and
20
21 the establishment of a burial club or *collegium* (Jones 2003; *RIB* 247). Indeed, Jones (2002:116)
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23 has noted that the “impression conveyed is one of metropolitan Mediterranean cultural
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25 influences,” although he cautions that, far from being the norm, these examples may have been
26
27 linked to immigrant Romans or individuals aspiring to Roman identity. How local individuals
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29 came to learn of rites such as *os resectum* has to be questioned, and it may indeed be the case
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31 that the individual under discussion here had Mediterranean origins or affinities. Alternatively,
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33 *os resectum* may have been practiced by the discharged legionaries of the early colony
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35 community and subsequently continued by later generations of their families. Perhaps, given the
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37 date of the burial in the late second or third century A.D., one family chose to reassert its cultural
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39 heritage at a time when burial practices were beginning to change radically with the rising
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41 popularity of inhumation.
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50 It is not possible to assert from this single example that *os resectum* was widely practiced
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52 in Roman Britain, but this case poses questions that beg further investigation. Is this an isolated
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54 example or part of a more widespread activity that has hitherto remained undetected? Are there
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3 other examples of *os resectum* lying unidentified in the cremation burials of Roman Britain? Is it
4 possible to identify these with accuracy? How, and why, were different elements of traditional
5 Roman burial practice selectively adopted in the western provinces? Only thorough analysis of
6 both newly discovered, and previously studied, cremation burials with these issues and their
7 potential alignment with theoretical models and explanations for funerary ritual practice in mind
8 offers the opportunity to shed further, and more conclusive light on the practice of *os resectum*.
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19 **Reconsidering Roman Personhood**

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21 The construction, or reconfiguration, of personhood through cremation rituals and the pre- and
22 post-mortem fragmentation of the body is a topic that has received increasing scholarly attention
23 over the past decade (Fitzpatrick 1997, 2000; Fowler 2004; Brück 2006; Wickholm and Raninen
24 2006; Cerezo-Román 2015; Williams 2015; McClelland and Cerezo-Román 2016; Cerezo-
25 Román et al. 2017; Weekes 2017). In this context, the present study of *os resectum*, which
26 combines a bioarchaeological perspective with the application of theoretical standpoints
27 concerning distributed personhood and rites of passage, raises important questions about Roman
28 concepts of the potential partibility of the body/person and its role in the creation or maintenance
29 of social relationships both during and after death.
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42 It should not be surprising that the people of the Roman world might conceive of the
43 body as something which it was possible to fragment, both literally and metaphorically.
44 Evidence from other ritual and social contexts broadly contemporary with the evidence for *os*
45 *resectum* suggests that ways of conceptualizing the physical body as inherently partible were
46 potentially widespread across the Roman world, even if they were not acknowledged in such
47 terms by ancient sources. It is not possible to do justice to the intricacies of this bigger picture
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3 here, but two examples, from Italy and the wider Empire, suffice to demonstrate how such ideas
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5 might be embedded within a range of cultural practices and ways of thinking. The concept of
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7 *pars pro toto* underpinned, for instance, the widespread anatomical votive tradition prevalent
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9 across ancient Italy for several centuries (late fourth to early first century B.C.) (Turfa 1994;
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11 Recke 2013; de Cazanove 2015). As part of this tradition, petitioners who sought assistance from
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13 the divine in matters of personal health, fertility, or general good fortune, left thank-offerings at
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15 sacred sites in the form of (often life-sized) terracotta models of individual body parts (Draycott
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17 and Graham 2017; Hughes 2017). Participants in these religious rituals used these models to
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19 intentionally spotlight a specific part of the body, thus fragmenting it from the whole for the
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21 purposes of ritual activities (Hughes 2008). In some instances the body part chosen might have
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23 been considered appropriate to the request that had been made of the god, but in others was also
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25 understood to act as a metaphorical synecdoche for the health, well-being or social persona
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27 connected with the entire body, even to indicate the very idea of somatic fragmentation itself
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29 (Hughes 2008). Although terracotta models dominate votive assemblages of this type, written
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31 texts and other iconographic sources suggest that on some occasions parts of the living body
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33 itself, including hair and possibly fingernails, might also be detached and presented as an
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35 offering to the divine (Draycott 2017). It has been argued elsewhere (Graham 2017) that the use
36
37 of anatomical votives points towards an understanding of religious personhood in early Roman
38
39 Italy that was grounded in partibility and a nexus of reciprocal relationships that included both
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41 living and non-living members. In the case of votive cult this included the divine, but such
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43 relationships might also be extended to include the deceased and other ‘ancestors’ or spirits,
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45 described recently as a broad category of “not indisputably plausible” actors (Rüpke 2018: 9).
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54 When viewed from the perspective of relationships of enchainment (see Chapman 2000), models
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3 of body parts could serve to both materialize and enact these forms of relational personhood,
4 acting as a proxy for an original, distant, or intangible body and perhaps being understood to
5 possess something of the fundamental essence or identity of a person (Graham 2017:50–54). In
6 many ways this parallels the way in which *os resectum* served as a proxy for the whole person
7 after death. It temporarily extended the social persona of the deceased into the liminal world
8 comprising living and dead for the duration of the rites of passage surrounding disposal, thereby
9 enabling the social negotiations required for their exit from the world of the living and their entry
10 into that of the dead. Like an anatomical votive, it allowed an intangible person to be present in
11 both material and social form. The only difference in this case was that it was a part of the
12 organic body itself that was used, rather than it being replaced by a material synecdoche. Cerezo-
13 Román et al. (2017:174) have similarly argued that cremation practices in Roman Gaul,
14 particularly the disaggregation of the body caused by the collection of only a sample of remains
15 from the pyre and their subsequent combination with grave goods, might lead to a specific type
16 of “personhood that is ‘part-person’ and ‘part-object’.” The fact that the *os resectum* would begin
17 to decompose once it was detached from the corpse, effectively altering its material form in
18 subtle but perceptible ways, may nevertheless have been important, and is perhaps suggestive of
19 further ideas concerning the material agency of the partible body. Indeed, once the ceremony of
20 *suffitio* was complete the *os resectum* no longer resembled the fleshed body part that had been
21 removed from the corpse, having transformed instead into something more akin to the rest of the
22 cremated remains of the deceased (at least to the non-bioarchaeologist’s eye).

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49 A similar argument for the importance of distributed personhood has been advanced by
50 Stewart (2006, 2007), for a slightly later period of Roman history than the anatomical votives,
51 and for a different form of bodily fragmentation. His study of the portraits of imperial figures,
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3 particularly those of the emperor, that were distributed across the Empire, reveals the extent to
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5 which these “announced themselves as extensions of the emperor’s personhood” and extended it
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7 “beyond the natural constraints of time and space” (Stewart 2007:169–170). By virtue of their
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9 embodiment of the persona and agency of the emperor, who had an impact on the lives of people
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11 across the empire but who would almost never have interacted directly or personally with them,
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13 portraits therefore drew once again upon a shared notion of personhood as fundamentally
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15 partible in nature. What is more, like *os resectum* and anatomical votives this was also expressed
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17 via the disaggregation of the human body and the transformation of its material form, rendering
18
19 an otherwise distant person a present and highly active participant within ongoing social
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21 relationships. It is against this cultural backdrop of distributed personhood and somatic partibility
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23 that *os resectum* should be understood.
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31 **Conclusion**

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33 This article has presented a case for a more holistic approach to the study of ancient ritual
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35 practices through the use of bioarchaeological evidence. In particular, it has demonstrated the
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37 analytical value of integrating evidence from bioarchaeological contexts with that of ancient
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39 written sources and approaches derived from wider theoretical discourses concerning the human
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41 body and its role in underpinning social relationships based on distributed personhood. In doing
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43 so it has addressed a specific question, using a genuinely tiny piece of evidence to spotlight and
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45 evaluate much more widespread patterns of human behavior. Investigating something as small-
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47 scale and seemingly unusual as a single example of *os resectum* from a small provincial city has
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49 revealed that close analysis of bioarchaeological evidence can have surprising results for the
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3 ways in which we understand how people in the Roman world produced and maintained a host of
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5 social relationships, including those that extended beyond the pyre.
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References

- CIL* = (1893–) *Corpus inscriptionum latinarum*. Königlich Preussische Akademie der Wissenschaften zu Berlin, Berlin.
- RIB* = (1965–) *Roman Inscriptions of Britain*. The Administrators of The Haverfield Bequest, University of Oxford, Oxford.
- Becker, Marshall J. 1988. The contents of funerary vessels as clues to mortuary customs: Identifying the *os exceptum*. In *Ancient Greek and Related Pottery. Proceedings of the 3rd Symposium*, edited by Jette Christiansen and Torben Melander. NY Carlsberg Glyptotek and Thorvaldsens Museum, Copenhagen, pp. 25–32.
- Becker, Marshall J. 1995. Human skeletal remains from the pre-colonial Greek emporium of Pithekoussai on Ischia (NA): Culture contact in Italy from the early VIII to the II century BC. In *Settlement and Economy in Italy 1500 BC–AD 1500. Papers of the Fifth Conference of Italian Archaeology*, edited by Neil Christie. Oxbow, Oxford, pp. 273–281.
- Borbonus, Dorian. 2014. *Columbarium Tombs and Collective Identity in Augustan Rome*. Cambridge University Press, Cambridge.
- Brück, Joanna. 2006. Fragmentation, personhood and the social construction of technology in Middle and Late Bronze Age Britain. *Cambridge Archaeological Journal* 16:297–315.
- Bruni, Silvia. 1997. La via Appia Antica: gli scavi tra Settecento e Ottocento. In *Via Appia: sulle ruine della magnificenza antica*, edited by Fondazione Memmo. Palazzo Ruspoli, Rome, pp. 23–24.
- Buikstra, Jane E. and Mark Swegle. 1989. Bone modification due to burning: Experimental evidence. In *Bone Modification*, edited by Robson Bonnischen and Marcella H. Sorg. University of Maine, Orono, pp. 247–258.
- Campana, Giovanni P. 1852. Di due sepolcri Romani del secolo di Augusto scoperti tra la Via Latina e l'Appia presso la tomba degli Scipioni. *Atti della Pontificia Accademia Romana di Archeologia* 11:259–370.
- Carbonara, Andrea, Angelo Pellegrino, and Rossella Zaccagnini. 2001. Necropoli di Pianabella: vecchi e nuovi ritrovamenti. In *Culto dei morti e costumi funerari romani. Roma, Italia settentrionale e province nord-occidentali dalla tarda Repubblica all'età imperial*, edited by Michael Heinzlmann, Jacopo Ortalli, Peter Fasold, and Marion Witteyer. Palilia, Rome, pp. 139–148.
- Cerezo-Román, Jessica I. 2015. Unpacking personhood and identity in the Hohokam area of Southern Arizona. *American Antiquity* 80:353–375.

1
2
3 Cerezo-Román, Jessica I., Koen Deforce, Denis Henrotay, and Wim Van Neer. 2017. From life
4 to death: Dynamics of personhood in Gallo-Roman funerary customs, Luxemburg Province,
5 Belgium. In *Cremation and the Archaeology of Death*, edited by Jessica I. Cerezo-Román, Anna
6 Wessman, and Howard Williams. Oxford University Press, Oxford, pp. 148–176.

8
9 Chapman, John. 2000. *Fragmentation in Archaeology: People, Places and Broken Objects in the*
10 *Prehistory of South-Eastern Europe*. Routledge, London.

11
12 de Cazanove, Olivier. 2015. Per la datazione degli ex voto anatomici d'Italia. In *The Impact of*
13 *Rome on Cult Places and Religious Practices in Ancient Italy*, edited by Tesse D. Stek and Gert-
14 Jan Burgers. BICS Supplement 132. Institute of Classical Studies, London, pp. 29–66.

15
16
17 Devillario, M.H. 1884. *Bulletin archéologique du Comité des travaux historiques et*
18 *scientifiques*, pp. 166–167.

19
20 Draycott, Jane. 2017. Hair today, gone tomorrow. The use of real, false and artificial hair as
21 votive offerings. In *Bodies of Evidence: Ancient Anatomical Votives Past, Present and Future*,
22 edited by Jane Draycott and Emma-Jayne Graham. Routledge, London, pp. 77–94.

23
24
25 Draycott, Jane and Emma-Jayne Graham, eds. 2017. *Bodies of Evidence: Ancient Anatomical*
26 *Votives Past, Present and Future*. Routledge, London.

27
28
29 Ellingham, Sarah T.D., Tim J.U. Thompson, Meez Islam, and Gillian Taylor. 2015. Estimating
30 temperature exposure of burnt bone: A methodological review. *Science and Justice* 55:181–188.

31
32 Fitzpatrick, Andrew P. 1997. *Archaeological Excavations on the Route of the A27 Westhampnett*
33 *Bypass. West Sussex. Volume 2: The Late Iron Age, Romano-British, and Anglo Saxon*
34 *Cemeteries. Wessex Archaeological Report 12*. Wessex Archaeology, Salisbury.

35
36
37 Fitzpatrick, Andrew P. 2000. Ritual, sequence, and structure in Late Iron Age mortuary practices
38 in north-west Europe. In *Burial, Society, and Context in the Roman World*, edited by John
39 Pearce, Martin Millett, and Manuela Struck. Oxbow, Oxford, pp. 15–29.

40
41
42 Fowler, Chris. 2004. *The Archaeology of Personhood: An Anthropological Approach*.
43 Routledge, London.

44
45 Garrido Varas, Claudia E. and Tim J.U. Thompson. 2011. Metric dimensions of the proximal
46 phalanges of the human hand and their relationship to side, position, and asymmetry. *HOMO –*
47 *Journal of Comparative Human Biology* 62:126–143.

48
49
50 Goodburn, Roger, Richard P. Wright, Mark W.C. Hassall, and Roger S.O. Tomlin. 1976. Roman
51 Britain in 1975. *Britannia* 7:325.

52
53
54 Graham, Emma-Jayne. 2009. Becoming persons, becoming ancestors. Personhood, memory and
55 the corpse in Roman rituals of social remembrance. *Archaeological Dialogues* 16:51–74.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
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40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Graham, Emma-Jayne. 2011. From fragments to ancestors: Re-defining *os resectum* and its role in rituals of purification and commemoration in Republican Rome. In *Living Through the Dead: Burial and Commemoration in the Classical World*, edited by Maureen Carroll and Jane Rempel. Oxbow Books, Oxford, pp. 91–109.

Graham, Emma-Jayne. 2015. Corporeal concerns: The role of the body in the transformation of Roman mortuary practices. In *Death Embodied: Archaeological Approaches to the Treatment of the Corpse*, edited by Zoë L. Devlin and Emma-Jayne Graham. Oxbow Books, Oxford, pp. 41–62.

Graham, Emma-Jayne and Valerie M. Hope. 2016. Funerary practices. In *A Companion to Roman Italy*, edited by Alison E. Cooley. Wiley-Blackwell, London, pp. 159–180.

Graham, Emma-Jayne. 2017. Partible humans and permeable gods: Enacting human-divine personhood in the sanctuaries of Hellenistic Italy. In *Bodies of Evidence: Ancient Anatomical Votives Past, Present and Future*, edited by Jane Draycott and Emma-Jayne Graham. Routledge, London, pp. 45–62.

Grévin, Gilles. 1997. La cremation à l'époque Romaine: un *os resectum* dans le monument funéraire de Marcus Nonius Balbus à Herculaneum. *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung (Bullettino dell'Istituto Archeologico Germanico, Sezione Romano)* 104:429–433.

Habinek, Thomas. 2016. At the threshold of representation: Cremation and cremated remains in classical Latin literature. *Classical Antiquity* 35:1–44.

Holden, Jane L., Prem P. Phakey, and John G. Clement. 1995. Scanning electron microscope observations of heat-treated human bone. *Forensic Science International* 74:29–45.

Hope, Valerie M. 2000. Contempt and respect: The treatment of the corpse in ancient Rome. In *Death and Disease in the Ancient City*, edited by Valerie M. Hope and Eireann Marshall. Routledge, London, pp. 104–127.

Hope, Valerie M. 2009. *Roman Death: The Dying and the Dead in Ancient Rome*. Continuum, London.

Hughes, Jessica. 2008. Fragmentation as metaphor in the classical healing sanctuary. *Social History of Medicine* 21:217–236.

Hughes, Jessica. 2017. *Votive Body Parts in Greek and Roman Religion*. Cambridge University Press, Cambridge.

Jones, Rick F.J. 1981. Cremation and inhumation: Change in the third century. In *The Roman West in the Third Century: Contributions from Archaeology and History. Part 1*, edited by Anthony King and Martin Henig. Oxford University Press, Oxford, pp. 15–19.

- 1
2
3 Jones, Michael J. 2002. *Roman Lincoln: Conquest, Colony and Capital*. Tempus, Stroud.
- 4
5 Jones, Michael J. 2003. The Colonia era. Archaeological account. In *The City by the Pool. Assessing the Archaeology of the City of Lincoln*, edited by David Stocker. Oxbow, Oxford, pp.
6
7 56–138.
8
9
- 10 Jones, Michael J. 2004. Cities and urban life. In *A Companion to Roman Britain*, edited by
11 Malcolm Todd. Wiley-Blackwell, Oxford, pp. 162–192.
12
- 13 Lennon, Jack J. 2013. *Pollution and Religion in Ancient Rome*. Cambridge University Press,
14 Cambridge.
15
- 16
17 Lindsay, Hugh. 2000. Death-pollution and funerals in the city of Rome. In *Death and Disease in*
18 *the Ancient City*, edited by Valerie M. Hope and Eireann Marshall. Routledge, London, pp. 152–
19 173.
20
- 21 Mattingly, David. 2006. *An Imperial Possession: Britain in the Roman Empire*. Penguin,
22 London.
23
- 24
25 Mays, Simon. 1998. *The Archaeology of Human Bones*. Routledge, London.
26
- 27 McClelland, John and Jessica I. Cerezo-Román. 2016. Personhood and re-embodiment in
28 osteological practice. In *Archaeologists and the Dead*, edited by Howard Williams and Melanie
29 Giles. Oxford University Press, Oxford, pp. 29–67.
30
- 31
32 McKinley, Jacqueline I. 1989. Cremations: Expectations, methodologies, and reality. In *Burial*
33 *Archaeology: Current Research, Methods, and Development*, edited by Charlotte A. Roberts,
34 Frances Lee, and John L. Bintliff. Archaeopress, Oxford, pp. 65–76.
35
- 36
37 McKinley, Jacqueline I. 1993. Bone fragment size and weights of bone from modern British
38 cremations and the implications for the interpretation of archaeological cremations. *International*
39 *Journal of Osteoarchaeology* 3:283–287.
40
- 41
42 McKinley, Jacqueline I. 1994a. A pyre and grave goods in British cremation burials: Have we
43 missed something? *Antiquity* 68:132–134.
44
- 45
46 McKinley, Jacqueline I. 1994b. Bone fragment size in British cremation burials and its
47 implications for pyre technology and ritual. *Journal of Archaeological Science* 21:339–342.
48
- 49
50 McKinley, Jacqueline I. 2000. Phoenix rising: Aspects of cremation in Roman Britain. In *Burial,*
51 *Society and Context in the Roman World*, edited by John Pearce, Martin Millett, and Manuela
52 Struck. Oxford University Press, Oxford, pp. 38–44.
53
- 54
55 McKinley, Jacqueline I. 2004a. Compiling a skeletal inventory: Cremated human bone. In
56 *Guidelines to the Standards for Recording Human Remains*, edited by Megan Brickley and
57
58
59
60

1
2
3 Jacqueline I McKinley. British Association for Biological Anthropology and Osteoarchaeology
4 and Institute for Field Archaeologists, Southampton and Reading, pp. 9–13.
5

6
7 McKinley, Jacqueline I. 2004b. The human remains and aspects of pyre technology and
8 cremation rituals. In *The Roman Cemetery at Brougham, Cumbria: Excavations 1966–67*, edited
9 by H.E.M. Cool. Society for the Promotion of Roman Studies, London, pp. 283–310.
10

11
12 McKinley, Jacqueline I. 2015. In the heat of the pyre. In *The Analysis of Burned Human*
13 *Remains*. 2nd ed., edited by Christopher W. Schmidt and Steven A. Symes. Elsevier, Amsterdam,
14 pp. 181–202.
15

16
17 McKinley, Jacqueline I. 2017. “How did it go?” Putting the process back into cremation. In
18 *Death as a Process: The Archaeology of the Roman Funeral*, edited by John Pearce and Jakes
19 Weekes. Oxbow, Oxford, pp. 257–286.
20

21
22 McKinley, Jacqueline I. and Julie M. Bond. 2001. Cremated bone. In *Handbook of*
23 *Archaeological Sciences*, edited by Don R. Brothwell and A. Mark Pollard. John Wiley & Sons
24 Ltd, West Sussex, pp. 281–292
25

26
27 Messineo, Gaetano. 1995. Nuovi dati dalla necropoli tra Via Salaria e Via Pinciana. *Archeologia*
28 *Laziale* 12:257–266.
29

30
31 Messineo, Gaetano. 1999. Dalle necropoli del suburbio settentrionale di Roma. In *Dalle*
32 *Necropoli di Ostia. Riti ed Usi Funerari*, edited by Angelo Pellegrino. Rome, pp. 110–127.
33

34
35 Millett, Martin. 1990. *The Romanization of Britain*. Cambridge University Press, Cambridge.
36

37
38 Montalto Trentori, Lina. 1937–1938. Scoperte archeologiche del secolo XVIII nella vigna di San
39 Cesareo. *Rivista dell’Istituto Nazionale d’Archeologia e Storia dell’Arte* 6:289–308.
40

41
42 Morris, Ian. 1992. *Death-Ritual and Social Structure in Classical Antiquity*. Cambridge
43 University Press, Cambridge.
44

45
46 Nock, Arthur D. 1972. Cremation and burial in the Roman Empire. In *A.D. Nock, Essays on*
47 *Religion and the Ancient World (Vol. I)*, edited by Zeph Stewart. Clarendon Press, Oxford, pp.
48 277–307.
49

50
51 Noy, David. 2000a. “Half-burnt on an emergency pyre”: Roman cremations which went wrong.
52 *Greece and Rome* 47:186–196.
53

54
55 Noy, David. 2000b. Building a Roman funerary pyre. *Antichthon* 34:30–45.
56

57
58 Noy, David. 2005. Romans. In *Encyclopedia of Cremation*, edited by Douglas J. Davies and
59 Lewis H. Mates. Ashgate Publishing, London, pp. 366–368.
60

- 1
2
3 Pappalardo, Umberto. 1997. Nuove testimonianze su Marco Nonio Balbo ad Ercolano.
4 *Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung (Bullettino*
5 *dell'Istituto Archeologico Germanico, Sezione Romano)* 104:417–428.
6
7
8 Recke, Matthias. 2013. Science as art: Etruscan anatomical votives. In *The Etruscan World*,
9 edited by Jean MacIntosh Turfa. Routledge, London, pp. 1068–1085.
10
11 Reece, Richard. 1988. *My Roman Britain*. Oxbow, Oxford.
12
13 Reidsma, Femke H., Annelies van Hoesel, Bertil J.H. van Os, Luc Megens, and Freek
14 Braadbaart. 2016. Charred bone: Physical and chemical changes during laboratory simulated
15 heating under reducing conditions and its relevance for the study of fire use in archaeology.
16 *Journal of Archaeological Science* 10:282–292.
17
18
19 Rüpke, Jörg. 2018. *Pantheon. A New History of Roman Religion*. Princeton University Press,
20 Princeton.
21
22
23 Scheuer, Louise and Sue Black. 2000. *Developmental Juvenile Osteology*. Academic Press,
24 London.
25
26 Schmidt, Christopher W. and Steven A. Symes, eds. 2015. *The Analysis of Burned Human*
27 *Remains*. 2nd ed. Elsevier, Amsterdam.
28
29
30 Shipman, Pat, Giraud Foster, and Margaret Schoeninger. 1984. Burnt bones and teeth: An
31 experimental study of color, morphology, crystal structure and shrinkage. *Journal of*
32 *Archaeological Science* 11:307–325.
33
34
35 Simon-Hiernard, Dominique. 1987. Remarques sur le rite de l'*os resectum*. In *Nécropoles à*
36 *incinération du Haut-Empire. Table ronde de Lyon 1986. Rapports archéologiques préliminaires*
37 *de la région Rhone-Alpes*. Région Rhône-Alpes, Direction des antiquités historiques, Lyon, pp.
38 93–95.
39
40
41 Squires, Kirsty E. 2015. The use of microscopic techniques in cremation studies: A new
42 approach to understanding the social identity of cremation practicing groups from early Anglo-
43 Saxon England. In *The Archaeology of Cremation: Burned Human Remains in Funerary Studies*,
44 edited by Tim Thompson. Oxbow Books, Oxford, pp 151–162.
45
46
47 Stewart, Peter. 2006. The image of the Roman emperor. In *Presence: The Inherence of the*
48 *Prototype within Images and Other Objects*, edited by Rupert Shepherd and Robert Maniura.
49 Ashgate, Farnham, pp. 243–258.
50
51
52 Stewart, Peter. 2007. Gell's idols and Roman cult. In *Art's Agency and Art History*, edited by
53 Robin Osborne and Jeremy Tanner. Blackwell, Oxford, pp. 158–178.
54
55
56
57
58
59
60 Toynbee, Jocelyn M.C. 1971. *Death and Burial in the Roman World*. Johns Hopkins University
Press, Baltimore.

1
2
3
4 Tucker, Katie. 2014. The osteology of decapitation burials from Roman Britain. A post-mortem
5 burial rite? In *The Routledge Handbook of the Bioarchaeology of Human Conflict*, edited by
6 Christopher Knüsel and Martin J. Smith. Routledge, London, pp. 213–236.

8
9 Turfa, Jean MacIntosh. 1994. Anatomical votives and Italian medical traditions. In *Murlo and*
10 *the Etruscans: Art and Society in Ancient Etruria*, edited by Richard Daniel De Puma and
11 Jocelyn Penny Small. University of Wisconsin Press, Madison, WI, pp. 224–240.

13
14 Ubelaker, Douglas H. 2015. Case applications of recent research on thermal effects of the
15 skeleton. In *The Archaeology of Cremation: Burned Human Remains in Funerary Studies*, edited
16 by Tim Thompson. Oxbow, Oxford, pp. 213–226.

18
19 Van Gennep, Arnold. 1960. *The Rites of Passage*. Translated by Monika B. Vizedom and
20 Gabrielle L. Caffee. Routledge and Kegan Paul, London.

21
22 Walker, Phillip L., Kevin W.P. Miller, and Rebecca Richman. 2008. Time, temperature and
23 oxygen availability: An experimental study of the effects of environmental conditions on the
24 color and organic content of cremated bone. In *The Analysis of Burned Human Remains*, edited
25 by Christopher W. Schmidt and Steven A. Symes. Academic Press, London, pp. 129–137.

27
28 Weekes, Jake. 2017. Funerary archaeology at St Dunstan's Terrace, Canterbury. In *Death as a*
29 *Process: The Archaeology of the Roman Funeral*, edited by John Pearce and Jakes Weekes.
30 Oxbow, Oxford, pp. 83–122.

32
33 Werts, Scott P. and A. Hope Jahren. 2007. Estimation of temperatures beneath archaeological
34 campfires using carbon stable isotope composition of soil organic matter. *Journal of*
35 *Archaeological Science* 34:850–857.

36
37 White, A.J. 1977. Roman inscription, Lincoln. *Lincolnshire History and Archaeology* 12:80–81.

39
40 Wickholm, Anna and Sami Raninen. 2006. The broken people: Deconstruction of personhood in
41 Iron Age Finland. *Estonian Journal of Archaeology* 10:150–166.

42
43 Williams, Howard. 2015. Towards an archaeology of cremation. In *The Analysis of Burned*
44 *Human Remains*. 2nd ed., edited by Christopher W. Schmidt and Steven A. Symes. Elsevier,
45 Amsterdam, pp. 259–293.

Figure Captions

Figure 1

Map indicating the Roman settlements in Britain (drawing by D. Weiss).

Figure 2

Map of the Roman colony of Lincoln, showing the outline of the city defenses, the forum, the principal roads and the known cemeteries (drawing by D. Weiss after Jones 2003).

Figure 3

Cremated remains of the Broadway cremation: (1) cranial fragments, (2) unidentified human skeletal fragments, (3) mandible fragment, (4) vertebral fragments, (5) rib fragments, (6) unidentified human long bone fragments, (7) femoral fragments, (8) pelvic fragments, (9) tibia fragments, (10) fibula fragments and (11) proximal and intermediate hand phalanges (probable *os resectum*) (photograph by A.T. Chamberlain).

Figure 4

Ventral view of the proximal and intermediate hand phalanges of the Broadway cremation (radial tubercle indicated by white arrow; photograph by A.T. Chamberlain).