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

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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).

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

**Biocultural and Historical Contexts: The Roman Rite of Cremation**

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

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

Cremation burial, whether practiced at Rome or in the provinces, was an inherently selective process, since an individual, or group of individuals, was required to take responsibility
for collecting the cremated remains and depositing them in a receptacle (McKinley and Bond 2001). These receptacles usually took the form of a ceramic or glass urn, but sometimes a bag or wooden box might have been used. On other occasions the remains were deposited in an earthen pit without any protective container. In both cases the cremated remains might be accompanied by additional grave goods (McKinley 1994a). The fragments of bone found within these containers and graves typically represent a random and incomplete assortment of skeletal elements (McKinley 2000; Cerezo-Román et al. 2017). Furthermore, it was common for the remnants of pyre debris and pyre goods to be included amongst the remains placed inside the urn (McKinley 2004a).

Cremation burial remained common across much of the Roman west until at least the third century A.D., when inhumation once again became the dominant rite (Jones 1981; Graham 2015). Beginning in Rome around the late first and early second century A.D., the shift was not instantaneous but it was widespread. Although the reasons behind this change continue to be a matter of debate, ranging from the adoption of new religious beliefs or cultural mores to novel forms of elite competition (Toynbee 1971; Nock 1972; Graham 2015), what is clear is that inhumation was never again superseded during the period of Roman domination in Europe.

**Roman Lincoln and its Cemeteries**

The remains of the individual cremation burial in this study were recovered from a site associated with *Colonia Domitiana Lindensium*, also known as *Lindum* (modern Lincoln), in the Roman province of *Britannia* (Fig. 1). Only three *coloniae*, a form of high-status settlement, were established in the province (a fourth settlement at York was promoted to the same status in the third century: Millett 1990:91). These newly-founded cities, which were part of a wider
imperial strategy for provincial government, were often created in locations that had been
occupied by military fortresses and were populated, at least initially, by discharged army
veterans holding Roman citizenship (Mattingly 2006:192). The colony at Lincoln was
established at the end of the first century, possibly around A.D. 90 (Jones 2004; Mattingly 2006:
272; Millett 1990 suggests c. A.D. 90–96) and its early community included veterans from the
Ninth Legion Hispana, who had previously occupied the fortress on the site (Jones 2003). With a
population of 10,000–12,000 residents, the colony at Lincoln was not one of the largest cities of
Roman Britain. However, the community was diverse, composed of immigrant traders,
merchants, government officials, and craftsmen in addition to ex-military personnel and
members of pre-existing local communities (Jones 2002).

As with all Roman cities, cemeteries soon emerged on the outskirts of Lincoln, beginning
with those associated with the fortress to the south of the colony but later extending to all the
major roads leading away from the city (Fig. 2). The graves identified within these cemeteries
reflect a mix of Roman and pre-Roman practices, although strong Mediterranean influences can
also be detected, including two subterranean mausolea (Jones 2003), which may represent
columbaria. This form of collective burial chamber, a particular product of the social landscape
of Augustan-period Rome, was not employed in its true form outside of the city of Rome itself
(Borbonus 2014). However, the term is commonly used to describe similar mausolea from
Roman-period Italy (and elsewhere) that were designed for the communal burial of cremated
remains. Gravestone evidence from Lincoln reveals that some of the ex-legionaries originated in
the regions of modern Macedonia, Spain, and Italy, and many others would have experienced
Mediterranean culture before being posted to Britain (Jones 2003). Jones (2002) has suggested
that the influence of Mediterranean culture imported by these soldiers, and later merchants and
craftsmen who flocked to the colony, may have been dominant for a generation or two before a new sense of Romano-British identity began to develop amongst their descendants. However, he also observes (2002:144) that the nature of graves as a whole is “very much in the Roman mould, with parallels in north-east Gaul.” Roman burial traditions were evidently widely adopted and, most importantly, continued for some time at Lincoln, perhaps a reflection of its cosmopolitan history. Indeed, Mattingly (2006:192) has suggested that the influx of discharged veterans to colonies such as Lincoln probably continued for some time after they had been established, with veterans and their citizen families, accustomed not only to a military lifestyle but to a Roman military lifestyle, “being attracted by the concentration of ex-soldiers” and, in turn, serving to perpetuate the strong “military character of such sites” for several generations. The shift from cremation to inhumation occurred at the colony, as for other cities in the province, during the third century A.D. when inhumations begin to appear alongside earlier cremation burials (Jones 2002).

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
presence of a second/mid-third century A.D. cemetery of indeterminate size in this area of Lincoln (Jones 2002), including the Broadway burial.

The Broadway burial yielded the cremated remains of a single adult (Fig. 3; note that the recording form is permanently available at the D-Scholarship@Pitt data repository and can be accessed at: http://d-scholarship.pitt.edu/33993). The individual was assessed as an adult on the basis of completed epiphyseal union (Scheuer and Black 2000), but sex was not assigned due to a lack of identifiable sexually dimorphic features. Although the burial deposit did not contain pyre debris, it did include a piece of bronze that had melted against a rib, together with sherds from the rim of a greyware ceramic vessel. The bronze fragment probably represents a remnant of a pyre good. It is possible that the rim sherds are fragments from a burial urn which was not noted as being present when the burial was donated to the Lincolnshire Museum.

The total weight of all the cremated materials in the Broadway burial was 376 g with the total weight of the cremated bone 371 g. The latter value is substantially below the expected weight of a modern adult cremation (approximately 1000–2400 g), but is within the observed range of Romano-British cremation burials (McKinley 1993, 2004b). At the time of analysis, the largest bone fragment had a maximum dimension of 42 mm, which is close to the average maximum fragment size reported by McKinley (1994b) for British cremation burials of 45 mm.

The color of cremated bone often provides an indication of its extent of oxidation, or ratio between organic and inorganic components (Ellingham et al. 2015). The oxidation of bone is a multifactorial process (Walker et al. 2008; Reidsma et al. 2016), typically determined by exposure temperature, exposure duration, positioning relative to the heat source, and the availability of oxygen (Ellingham et al. 2015). Nevertheless, bone goes through a series of color
changes as it oxidizes (Shipman et al. 1984; Buikstra and Swegle 1989; McKinley 2004a; Ubelaker 2015), which Ellingham and colleagues (2015:182) describe as follows:

Fresh bone normally exhibits a light ivory colour, which turns over brown into black as a result of carbonization, the incineration of organic materials of carbon and collagen. The next stage in the combustion process is the pyrolization of organic compounds, resulting in a grey shading of the bone, which then gives way to the bone becoming white, signaling calcinations and a complete loss of organic compounds and fusion of bone mineral.

Unlike cremation burials from earlier periods, including Bronze Age Britain, it is common for Romano-British deposits to be incompletely oxidized (McKinley 2000, 2015) and the Broadway burial is no exception. Although fragments ranged in color from white to dark grey, the majority were white (fully oxidized), while fragments of the tibiae, skull and unidentified fragments exhibited light grey patches. Two hand phalanges (proximal and intermediate, their relative sizes suggesting that they belong to the same single finger) were primarily dark grey in color (Figs. 3 and 4). The asymmetry of the base of the proximal phalanx, which exhibits a more prominent radial tubercle (Fig. 4), indicates that the phalanx is likely to be from a finger of the left hand (Garrido Varas and Thompson 2011:132). Although the articular surfaces where the phalanges would have articulated are missing, the ratio of the midshaft mediolateral diameters of the intermediate and proximal phalanges is 81%, consistent with their being derived from the same individual digit (Garrido Varas and Thompson 2011).

In addition to color, three other heat-induced changes are commonly visible in cremated bone. These changes—shrinkage, fissuring, and warping—attest to the level of dehydration of the bone and the alteration and loss of the organic components of the bone tissue. Moreover,
examples of each type of heat-induced change are typically noted during the analysis of cremation burials (Shipman et al. 1984; McKinley 2004a; Schmidt and Symes 2015). A qualitative appraisal of the Broadway burial revealed that all of the cremated bones exhibited these changes with the exception of the two hand phalanges. The phalanges appeared to display little or no shrinkage and less fissuring relative to the other skeletal elements, suggesting that they had not been heated to the same high temperatures as the other remains.

Furthermore, although fragments from the skull, axial skeleton, and appendicular skeleton were present in the cremation burial, the only identifiable skeletal elements from the upper limbs were the aforementioned hand phalanges. This is unusual because these phalanges seem to represent a single finger. The uniqueness of the phalangeal alterations are especially unusual because “cremation burials generally comprise, apparently, a random selection of bone fragments from all skeletal areas” (McKinley 2004b:298).

**Os Resectum and Roman Rites of Purification**

The consistency in the size ratio of the phalanges, and the distinctive pattern of preservation of the finger bones, together with the absence of other identifiable bones of the hands or arms, indicates differential treatment of body parts that is a characteristic of the rite of *os resectum*. Evidence for the rite of *os resectum* (‘cut bone’) is provided initially by Cicero (*De Legibus* 2.22.55), Varro (*De Lingua Latina* 5.23), and Festus (*Frag. ex apogr.* 62). Although Varro refers to the rite as *os exceptum*, rather than *resectum*, his text clearly describes the same custom as Cicero and Festus. Festus provides the specific detail that a corpse may only be legitimately burnt once a finger has been removed and set aside. Unfortunately the writings of these three ancient authors provide little in the way of comprehensive information concerning the manner in
which the rite itself was performed, or indeed whether it was performed at all social levels. Archaeologically attested examples of *os resectum* from Roman Italy are also relatively scarce (see below). However, the evidence they provide aligns sufficiently with the written sources to corroborate the accounts composed by these Republican and Imperial period authors, verifying that they do not merely report a rite that was an antiquated oddity, but an activity which continued to be a ritual reality for at least some funerals well into the Imperial period. The most notable discovery was made in the vineyard of San Cesareo on the Via Appia immediately outside Rome in 1732. Antiquarian explorations of this site uncovered approximately 300 small single-handled ceramic jugs, each inscribed with the name of an individual and a range of specific dates within the Roman calendar (*CIL VI* 2 8211–8397; Montalto Trentori 1937–1938; Bruni 1997). Together they can be securely dated to the second/first century B.C. on stylistic grounds and the use of the pre-Caesarean calendar. Each vessel was also found to contain one or two fragments of burnt human bone (Baldini 1738 cited in *CIL VI* 1 1103; unfortunately the bones were subsequently lost). Baldini linked the discovery with the custom of *os resectum* as outlined in the written sources, acknowledging but evidently overlooking the fact that they had been burnt, contra to what is suggested by Festus. Since then, San Cesareo has continued to act almost as a type site for the rite, with the individually labeled vessels sometimes being interpreted as an element essential for its identification (e.g. Messineo 1995, 1999). This is proved not to be the case by other examples of *os resectum* that have been identified elsewhere at Rome, Ostia, Herculaneum, and Pithekoussai (Campana 1852; Becker 1995; Grévin 1997; Pappalardo 1997; Carbonara et al. 2001).

The example from Herculaneum is particularly intriguing because it belonged to the senator Marcus Nonius Balbus, one of the leading members of the local community during the
Augustan period (27 B.C.–A.D. 14). Beneath a commemorative altar dedicated to the memory of Balbus that was raised on the town’s seafront, an urn was found to contain two layers of pyre debris with a single hand phalanx placed between the layers (Grévin 1997). No other bone was present within the urn. To some extent this parallels the examples from San Cesareo, which were also deposited unaccompanied within individual vessels. Moreover, it demonstrates a degree of associated monumentality that points towards a very specific use of *os resectum* within communal remembrance activities that were focused on the socially distributed personhood of one person of particular significance to the local community (Graham 2009). Other archaeological examples of the rite reflect varying patterns of deposition as well. For example, at Pithekoussai the bone was deposited in the primary cremation urn with the other cremated remains (Becker 1995), whereas in the early imperial period *columbarium* of Pomponius Hylas at Rome a small pit beneath the tomb floor was found to contain what appears to be a communal deposit of burnt bones belonging to multiple individuals (Campana 1852). Neither site appears to have attracted the same sort of targeted monumental commemoration as that of Nonius Balbus at Herculaneum. Regardless, there appears to have been no standardized manner in which to deposit the bone or bones connected with *os resectum*, indicating that it was most likely to have been the performance of the rite itself that was deemed to be of significance, rather than the subsequent burial or disposal of the skeletal elements around which those activities had unfolded.

Questions also remain with regards to the social and/or legal status of those who practiced the rite. Marcus Nonius Balbus was a wealthy Roman citizen and senator, as well as the celebrated patron of the town of Herculaneum, but the texts catalogued for 186 of the vessels from San Cesareo appear to point towards a group of ordinary freeborn and freed (formerly enslaved) people (Graham 2011:98). During the middle and late Republic, when these vessels...
were inscribed, the *tria nomina* had not yet become the standard means by which to publically express Roman citizenship, rendering the social status of many of these individuals uncertain.

Most bear only *praenomen* and *nomen* with no indicator of legal status, but at least 22 (including four women) record their status as freedmen or freedwomen, while at least seven others use the abbreviation of *filius* or *filia* to indicate that they were a freeborn son or daughter. Although the repeated use of single names may possibly indicate the presence of enslaved people this is not possible to prove based on the available evidence. Moreover, most of the single names on the San Cesareo vessels belong to women, following the tradition of using only family names (*nomen*, e.g. Caecilia, Iunia, Lucretia) for women of this period. The evidence is therefore difficult to interpret, although it might be reasonable to assume that *os resectum* was practiced across the social spectrum, albeit potentially very unevenly. Similarly, although *os resectum* can be attested at some sites across central and southern Italy it is difficult to determine how geographically widespread the practice was, or to what extent or by whom it was adopted beyond the immediate hinterland of Rome or the Italian peninsula. On the other hand, two potential instances have been described for cremation burials in imperial period Gaul, namely an unburned human finger (Devillario 1884) and an unburned human foot (Simon-Hiernard 1987).

It has been proposed (Toynbee 1971; Becker 1988; Messineo 1995, 1999; Hope 2000) that the rite of *os resectum* was closely associated with the Roman tradition of providing the corpse with a proper religious burial, which Horace (*Odes* 1.28) described as providing the body with a symbolic covering of earth which would allow the soul to rest peacefully. Such activity was impossible in instances of cremation because the body had already been transformed and broken down by fire when it came to be interred, leading to the suggestion that *os resectum* offered the opportunity for a separate interment that would satisfy these strict religious demands.
It was able to do this by acting as a substitute for the whole body, drawing on wider cultural
traditions concerning the concept of *pars pro toto* (‘a part for the whole’; discussed further
below). However, re-investigation of the rite has revealed that it is more likely that the *pars pro
toto* significance of *os resectum* lay within the ceremonies of purification that followed the
cremation of the remainder of the corpse (Graham 2009, 2011). Rather than associating *os
resectum* with proper disposal, Varro (*De Lingua Latina* 5.23) notes that the bone removed from
the corpse was “kept out for the ceremony of purifying the household,” and that if this was not
carried out the family was compelled to remain in a state of spiritually polluted mourning
(*funesta*). Traditionally, mourners were released from this state nine days after the burial when
they returned to the grave to perform a ceremony known as *suffitio*, which was an essential
cleansing ritual involving fire and water (Lindsay 2000; Lennon 2013). In light of Varro’s
comment, it seems probable that before the corpse was removed from the home in order to be
transported to the pyre site for cremation, the element required for the *os resectum* rite was
detached from the body, remaining in the possession of the family or within the house for later
use within the purification ceremony, at which point it would act in a *pars pro toto* capacity as a
proxy for the polluted body and soul of the deceased (Graham 2009:56–57). During the
ceremony of *suffitio*, the mourners consumed another funerary meal, made offerings to the
ancestors, and were purified by the dual action of coming into contact with water sprinkled from
a laurel branch and stepping over fire. This ritual may have been comparable with Ovid’s (*Fasti*
4.721–806) description of similar cleansing rituals performed each year on 21st April as part of
the *Parilia* festival. He notes that on this occasion “Sure it is that I have leaped over the flames
ranged three in a row, and the moist laurel-bough has sprinkled water on me” (4.727–728), and
exhorts the reader to “leap with nimble foot and straining thews across the burning heaps of
crackling straw” (4.781–2). The possibly similar activities of suffitio represent part of the rites of passage that surrounded death (Van Gennep 1960; see also Lennon 2013:144–145), being performed in order to remove the living mourners, as well as the soul and body of the deceased, from the polluted marginal zone that they inhabited temporarily during the funesta and, through rites of incorporation, (re)assimilating them into the community to which they rightfully belonged (Graham 2011). The liminal zone of the funesta existed only by virtue of the co-presence of mourners and corpse, as mutually polluted and polluting agents, hence both parties must be purified simultaneously in order for it to effectively dissolve and allow each member to (re-)enter the appropriate social community. Since the deceased, present at the ceremony of suffitio in the form of the retained os resectum, was also required to be subject to the same ritual cleansing process, the bone may have been placed in the purifying flames over which the living mourners were required to step, so that it too was a mutual recipient of the full lustration.

The evidence recovered from San Cesareo, where the bones were found to have been subjected to an unknown degree of burning, goes some way to supporting this (Graham 2011). First, it is possible that the small inscribed vessels in which they were found were used to store the os resectum in the intervening period between its removal and the performance of suffitio. The names and dates perhaps indicate that these people were members of a burial club, whose members performed the necessary rites for the deceased, instead of the family, and who would have needed to keep track of when and for whom such purification activities needed to take place. Secondly, and more pertinently, the condition of the bones themselves is suggestive. If the intention was to remove the finger prior to cremation for separate inhumation as an intact, unchanged element of the body, then these bones should demonstrate no evidence of subjection to heat. However, if os resectum entailed the purification of the body part in the suffitio fire, as
outlined above (see also Graham 2009, 2011), then we would expect to be able to identify
evidence for exposure to high temperatures albeit perhaps for a brief interval of time. In the case
of the San Cesareo bones, these were certainly described by their finders as having been burnt
(Baldini 1738 cited in CIL VI² 1103). Of course, these bones could have been collected
subsequent to the incineration of the entire corpse, in which case any signs of burning would
have been the result of the act of proper cremation. However, because the fire used for the
ceremony of suffitio was designed for the mourners to step over safely it would be unlikely to
have reached the same high temperatures as the cremation pyre, indicating that it should be
possible to identify whether bones such as these received differential treatment from the rest of
the corpse in terms of exposure to heat. In other words, rather than being fully oxidized, any
bones that had been retained for participation in a suffitio ceremony would be incompletely
oxidized. Indeed, it remains a possibility that the San Cesareo bones were described as ‘burnt’ by
the early eighteenth century antiquarians who recovered them precisely because, in the absence
of modern scientific techniques, this was the impression that was given by their color, which
may in turn suggest that they were grey or black. Such coloring, as noted above, would indicate
charring rather than full oxidization.

Once the os resectum had been purified it was subsequently inhumed or otherwise
interred, thus completing the disposal process. In the case of the remains from San Cesareo and
Herculaneum the now charred bones were placed in identifiable vessels that may have played a
direct role in later commemorative activities (Graham 2009, 2011). As noted above, separate
interment was evidently not an essential element of the rite and, given the fact that so few
depositions of this nature have been recognized within the archaeological record, it is perhaps to
be expected that in most instances the retained bone was reunited with the other remains of the
corpse within the primary cinerary urn, as at Pithekoussai. Very few cinerary urns have been micro-excavated: typically the urn contents are analyzed as a single assemblage, and as a result, *os resectum* becomes very difficult to identify archaeologically. This may explain the emphasis placed upon the more unusual and highly visible examples of the rite known from San Cesareo and Herculaneum within existing accounts of *os resectum*, but if many further examples remain hidden amongst cremation assemblages then *os resectum* may have been far more widely practiced than previously thought.

**The Broadway Cremation Burial as Evidence for Ritual**

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

Although the phalanges cannot conclusively be assigned to a single finger (as phalanges from adjacent digits of the same hand are sometimes indistinguishable) the osteological evidence is consistent with this interpretation. Furthermore, it aligns with the written sources for the removal of a single digit in the rite of *os resectum*. Placing this unusual find in the context of this mortuary rite may shed further light on it, since the rite of *os resectum* was inextricably linked to the removal of a finger for ritual purposes. It is unclear how this finger, represented in the Broadway burial by two phalanges, was removed from the hand since there is no clear evidence of cut marks. There is, however, postmortem damage to the ventral aspect of the base of the
proximal hand phalanx, and this missing portion might have contained cut marks—especially if the original cut was initiated from the palmar surface of the hand. Furthermore, a skilled dissector can remove an appendage by cutting through the joint cartilage without causing damage to the adjacent bones (for minimal presence of cut marks in some Romano-British instances of dissection and decapitation, see Reece 1988:98; Tucker 2014). Regardless of how it was removed, the ritual process described above indicates that the finger would subsequently have received different treatment from the rest of the corpse, which was cremated on the pyre, and this is what appears to have occurred in the case of the individual buried at 43 Broadway. In this scenario, the finger would subsequently have been reunited with the body in the context of the burial urn, as witnessed in other examples. Although the finger from Lincoln appears incomplete as it is ostensibly missing its distal phalanx, it is possible that this small and fragile finger bone is indeed present in the burial, but fragmented beyond the point of identification.

Contextualizing these remains in relation to the purification ceremony known as suffitio, is also useful. We might expect a pyre to reach temperatures in excess of 600–700°C, whereas the fire used for the ceremony of the suffitio outlined above would have been considerably smaller in size and lower in temperature, given that it was a ritual fire that had to be small enough for mourners to pass over safely, perhaps achieving a maximum temperature of 200–400°C. Werts and Jarhen (2007:857) explain that such a temperature is “more than sufficient for the boiling of water, or the reducing of fluids, however, these temperatures are not high enough for the flaming combustion of wood.” Such a fire would have been ideal for the purificatory purposes of suffitio. The lower temperatures of the fire and, presumably, shorter exposure time would have rendered the bones incompletely oxidized at the most. Consequently, bones that had been used in this way would exhibit the features described for the phalanges from the Broadway
cremation burial, where osteological analysis suggests that the finger was subjected to heat, but to a different extent than the other remains within the burial. Placing this burial in such a context may explain why these two small bones not only exhibit different characteristics from the other remains within the same burial, but also why it is a digit that displays differential treatment rather than any other element.

Despite the paucity of other recorded instances of *os resectum* outside of Italy we should perhaps not be surprised to find this rite being performed at Lincoln given the cosmopolitan nature of the community and the history of the colony. Other traditionally Mediterranean funerary activities have been identified in the city, including the construction of mausolea and the establishment of a burial club or *collegium* (Jones 2003; RIB 247). Indeed, Jones (2002:116) has noted that the “impression conveyed is one of metropolitan Mediterranean cultural influences,” although he cautions that, far from being the norm, these examples may have been linked to immigrant Romans or individuals aspiring to Roman identity. How local individuals came to learn of rites such as *os resectum* has to be questioned, and it may indeed be the case that the individual under discussion here had Mediterranean origins or affinities. Alternatively, *os resectum* may have been practiced by the discharged legionaries of the early colony community and subsequently continued by later generations of their families. Perhaps, given the date of the burial in the late second or third century A.D., one family chose to reassert its cultural heritage at a time when burial practices were beginning to change radically with the rising popularity of inhumation.

It is not possible to assert from this single example that *os resectum* was widely practiced in Roman Britain, but this case poses questions that beg further investigation. Is this an isolated example or part of a more widespread activity that has hitherto remained undetected? Are there
other examples of *os resectum* lying unidentified in the cremation burials of Roman Britain? Is it possible to identify these with accuracy? How, and why, were different elements of traditional Roman burial practice selectively adopted in the western provinces? Only thorough analysis of both newly discovered, and previously studied, cremation burials with these issues and their potential alignment with theoretical models and explanations for funerary ritual practice in mind offers the opportunity to shed further, and more conclusive light on the practice of *os resectum*.

**Reconsidering Roman Personhood**

The construction, or reconfiguration, of personhood through cremation rituals and the pre- and post-mortem fragmentation of the body is a topic that has received increasing scholarly attention over the past decade (Fitzpatrick 1997, 2000; Fowler 2004; Brück 2006; Wickholm and Raninen 2006; Cerezo-Román 2015; Williams 2015; McClelland and Cerezo-Román 2016; Cerezo-Román et al. 2017; Weekes 2017). In this context, the present study of *os resectum*, which combines a bioarchaeological perspective with the application of theoretical standpoints concerning distributed personhood and rites of passage, raises important questions about Roman concepts of the potential partibility of the body/person and its role in the creation or maintenance of social relationships both during and after death.

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

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

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

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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).