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## **‘Death Is Not the End’: Tracing the Manipulation of Bodies and Other Materials in the Early and Middle Minoan Cemetery at Sissi**

The last two decades have seen a transformation in our understanding of cognition and materiality (e.g. Gosden 1994; Clark 1997; Knappett 2005; 2012; Knappett & Malafouris 2008; Hicks & Beaudry 2010). At the same time awareness has grown of some of the limitations of modernist thought, not least the way it has encouraged a fragmented conceptualisation and investigation of the human being in the world: i.e. as composed of separable human (i.e. economic, social, religious, political etc.) and material (e.g. ceramic, lithic, osteological, architectural etc.) domains and categories (Latour 1993; 2005; Thomas 2004). We recognise the need to reflect more critically on the artificiality of this static atomisation of human experience, on the one hand, and material residues, on the other, and to find better ways of tracing the flows of mutual relations between people and things in which the social is enacted. (cf. Latour 2005). Inevitably this translates in archaeology into an urgent need to develop more effective methodologies of characterisation capable of more comprehensively mapping the complex relations that existed between humans and nonhumans in the past. Recent (2007–2011) excavations at the Bronze Age cemetery at Sissi in Crete **[Fig. 1]** have provided an opportunity to respond to these theoretical agendas by trying to develop a more integrated, detailed and contextual approach to the characterisation of materials than had hitherto been attempted for a Minoan cemetery. In the process we have gained not only a wealth of information about Early Minoan II-Middle Minoan IIB funerary practices at Sissi, but also a means of reflecting upon the ways in which Minoan archaeology has typically engaged with cemeteries.

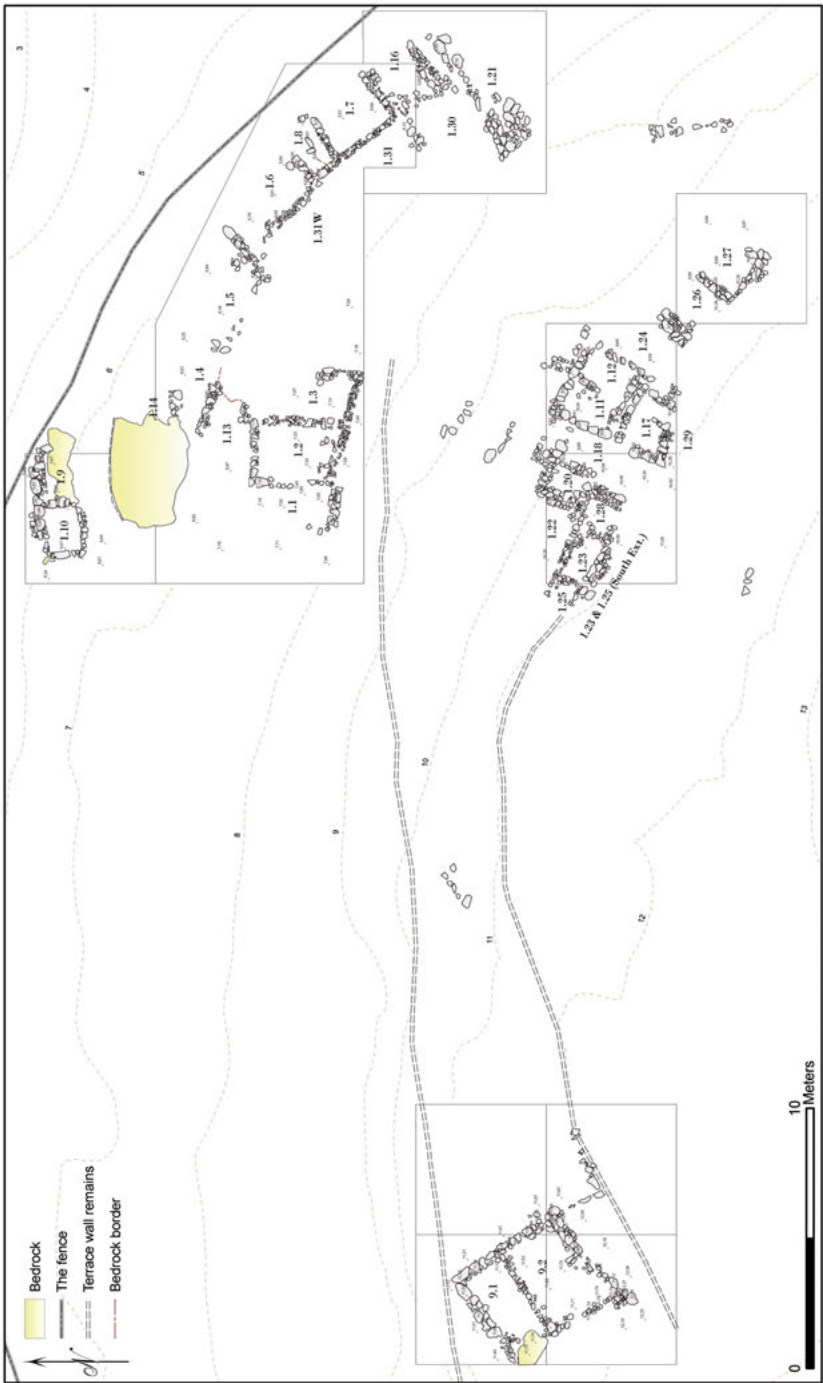


Fig. 1: Plan of the cemetery at Sissi (P. Hacigüzeller).

## From reflecting to enacting: Minoan cemeteries as social arenas

A key theme in the study of Early and Middle Minoan funerary data has been the question of social complexity, particularly the presence or absence of hierarchical relations (Branigan 1970; Watrous 1994; Voutsaki 1998; Maggidis 1998; Murphy 2011; see Legarra Herrero 2012). In common with wider trends in archaeology (e.g. Binford 1971; Peebles & Kus 1977; see Jones 1996), mortuary data were initially treated as straightforward reflections of fixed social personae and differential status and thus as isomorphic with social organisation and complexity. Fundamentally, this reflectionist view assumes a unidirectional relationship in which changes in society are responsible for changes in the funerary realm and funerary rites faithfully mirror a generalised set of fixed social conditions. By combining different episodes of funerary ritual, not simply within a single tomb or even in a single cemetery but collectively between cemeteries across the island, it was thought that one could make useful generalisations about a social totality that was termed ‘Minoan society’.

More recent work on Minoan cemeteries has moved away from this position and has focused more on funerary rituals as social practices that actively articulate, rather than passively reflect the specific social worlds in which they take place (Branigan 1998; Murphy 1998; Papadatos 1999; Legarra-Herrero 2009; Schoep *in press*). The insight that society is not something that induces changes in the funerary realm (Parker Pearson 1982: 100), but rather that the social is carried forward (Barrett 1990: 182) or ‘enacted’ (cf. Latour 2005) by funerary practices, has been influential. It is after all the living that treat the dead and, as Barrett notes, mortuary symbolism is employed by mourners through concern not only for proper treatment of the dead, but also for the reallocation of rights and duties amongst themselves; it is the mourners who are the active participants in the funerary ritual, and the practices are amongst those who continuously bring the social into being (Barrett 1990: 182). In this way, cemeteries operate as arenas in which different, potentially contrasting understandings of the social are enacted by the living. Funerary activities therefore need not be isomorphic with social realities, but rather may seek to distort or misrepresent them (Morris 1987; Parker Pearson 1999).

## Investigating funerary variation

For investigators of Minoan cemeteries the key primary question is not so much what funerary behaviour can tell us about social complexity, although this secondary question may ultimately become answerable; rather, how one might gain a sense of the plurality of voices involved and of the potential commonalities, contradictions and contingencies enacted by funerary practices. Naturally, if we are to stand any

chance of success in answering this primary question, we need, first, to be interested in *all* forms of variation manifest in funerary contexts and, second, to be capable of mapping and relating that variation (e.g. material, depositional, stratigraphic, taphonomic) in an adequate way. Much, of course, depends on the nature of the funerary deposits themselves; we can only trace what is there to be observed. For instance, complex collective deposits, such as those that are commonplace in Early and Middle Minoan cemeteries, typically comprise multiple episodes of activity that are juxtaposed, overlapping or intermingled (Branigan 1987) and thus pose greater challenges for the discrimination of specific episodes of practice than single inhumations. But, however simple or complex the depositional picture is, we believe the emphasis should always be on exhaustive tracing and relating of *all* meaningful variation, even if this means moving more slowly and painstakingly, transforming traditional excavation practices with new techniques and protocols, or indeed questioning orthodoxies regarding how we conceptualise and investigate the past.

## Bodies and materials

One particular dividing line that we consider to be a limiting factor in the study of funerary contexts is the one drawn between human bodies, on the one hand, and, on the other, material things, such as pottery, stone and metal artefacts and walls, pits and other 'built' features (Ingold 1998; see Sofaer 2006). There has been a tendency in excavations and studies of Minoan cemeteries to treat human remains separately, as something intrinsically different from these other materials. This has manifested itself in different ways: at times when emphasis was placed on relative dating and establishing artefactual taxonomies, cemetery excavations might carefully recover artefacts but discard skeletal material (e.g. Kamiliari tholos: Girella 2013); in other excavations human bone was recovered but studied in isolation from other materials according to a range of science-based osteoarchaeological approaches addressing sex, age, diet palaeopathology, genetic distance and metric variation (e.g. McGeorge 1987; 1989). In the last decade studies of skeletal assemblages have started to pay more attention to the taphonomy of human skeletal remains and the formation of the deposits in which they occur (e.g. Triantaphyllou 2005; 2009; 2010; *in press*; Schoep et al. 2009; 2011; 2012; Cavanagh et al., *this volume*; Lagia et al., *this volume*). However, rarely, if at all, in Minoan cemetery archaeology have bodies been treated as materials, understood alongside other materials (e.g. pottery), and the relations between them comprehensively explored.

We are not really sure why this is. For prehistoric archaeologists it is self-evident that when they encounter bodies it will be in the form of their skeletal remains and accordingly they recover, store and study them as materials. However, it seems that there remains a general reluctance to treat corporal and artefactual materials as similar things. Perhaps with archaeological bodies we feel a sense of melancholy that mani-

feels itself in a tension felt between these dry, lifeless materials and the living, thinking bodies of which they were once part. This tension most obviously manifests itself in a desire to reverse the decaying of time, to transcend the lifeless materiality of skeletonised remains and to find ways of reassembling and even reanimating bones into individuals, the latter well exemplified by our fascination for facial reconstruction.

However, it is perhaps too easily forgotten that this dichotomy between the organic, living body of the past, and its skeletonised remains in the present is not one that maps simply onto 'them' in the past and 'us' in the present, but was also active and experienced in the past. Thus all cemetery contexts where past depositions remained in some way open, and thus available for future access (e.g. caves, built tombs, shaft graves), provided opportunities for encounters with skeletal remains that could have led to their modification in the past. In the context of Minoan funerary archaeology Branigan has usefully distinguished five distinct forms of intentional manipulation of human remains: clearance, fumigation, selected grouping of specific bones, selected removal of specific bones, and fragmentation of specific bones (Branigan 1987: 45; Triantaphyllou in press).

This potential for past manipulation holds equally true for other materials deposited in open funerary contexts. Moreover, it is now widely recognised that everyday prehistoric artefacts could be subject to intentional manipulation of a variety of forms as a means of ritualising their deployment and constructing new meanings, from intentional fragmentation and the removal of parts, to intentional curation and the accumulation of groups of parts or wholes (Chapman & Gaydarska 2007; Gamble 2007: 132–52). These techniques of material manipulation may also extend to include the human body or what has been termed corporal culture (Gamble 2007: 87–110): good examples of fragmentation are the isolated skeletal fragments of adult humans that circulated in Aegean Neolithic settlement contexts (Triantaphyllou 2008), while curation and accumulation of selected groups of human skeletal parts are exemplified by 'ossuaries'. Viewed in such terms the potential for parallels in treatment between bodies and other materials in Minoan cemeteries seems obvious, and yet this seemed to have been scarcely pursued in a systematic way in previous cemetery excavations on Crete. Thus for the Sissi cemetery excavation it made sense to us to pay closer attention to the identification and tracing of intentional material manipulation, both corporal and artefactual, and to the exploration of similarities and differences between different material categories.

## Tracing materials and deposits: lessons from archaeoethanatology

It is an irony that human bodies, although undoubtedly a key component of past funerary practices, are comparatively less well-known to us because of the ways many Aegean cemeteries were excavated in the past. The excavation methodology applied in the cemetery at Sissi represents an attempt to improve characterisation by introducing

a set of techniques known as ‘archaeoethanatology’ (also ‘field anthropology’) into Minoan funerary archaeology (Crevecoeur et al. 2015). Although this methodology has gained a strong influence over the investigation of mortuary contexts in French archaeology, up until a decade or so ago its influence beyond was more limited (Rockandic 2002; Nilsson Stutz 2003; Willis & Tayles 2009). Rather than introducing the physical anthropologist *after* excavation is completed, archaeoethanatology charges the physical anthropologist with the task of overseeing the whole process, from excavation and recording to post-excavation study. Since much interpretation turns on the quality of the field data, and since any information not recorded in the field is lost forever (Duday et al. 1990; Duday 2005; 2009), archaeoethanatology begins with observations in the field and incorporates other disciplines, such as biological anthropology, ethnology and sociology (Boulestin & Duday 2006; Crevecoeur et al. 2015). Wherever human skeletal material was encountered in direct relation to other types of material (e.g. ceramic, stone), physical anthropologists recorded these inter-relationships and recovered all materials [Figs. 2–4].

In archaeoethanatology a distinction is made between *primary deposition*, when a body remains in the location where it was initially placed prior to decomposition, and *secondary deposition*, when bodily remains are removed from the locus of primary deposition to another locus, effectively making the locus of primary decomposition different from the final resting place (Crevecoeur & Schmitt 2009; Crevecoeur et al. 2015). Recognising this distinction is important because it allows different episodes in the manipulation of human bodies to be distinguished. It is a distinction we also sought to apply, where possible, to other materials in the Sissi cemetery in order to ensure that the manipulation of skeletal and other materials might be explored within a single framework.

At this point we would like to make clear that in our distinction of primary and secondary deposits we are explicitly following a ‘forensic’ rather than an ‘ethnographic’ understanding of what defines primary and secondary treatment (Triantaphyllou in press for a discussion). While the key criterion in the former is spatial (i.e. a change in location), in the latter it is temporal (i.e. a distinction between ‘primary’ rituals practised close to death and ‘secondary’ rituals practised after a longer interval). In practice, this ethnographic distinction varies contextually (from days to weeks to months to years) and thus lacks an absolute value that can be applied cross-culturally. Moreover, in the absence of direct participant observation, this distinction between funerary and postfunerary ritual practice may be rather arbitrary and thus difficult to enforce. When exactly does funerary manipulation of bodies end and postfunerary manipulation begin? While it is tempting, especially in archaeological contexts, to impose this transition at the point when the body has fully decomposed and skeletonised, this is a presumption, not a cultural universal, and should therefore be resisted.

It seems preferable to us to view the treatment of bodies as a continuum of manipulation, rather than as something easily divisible into primary and secondary

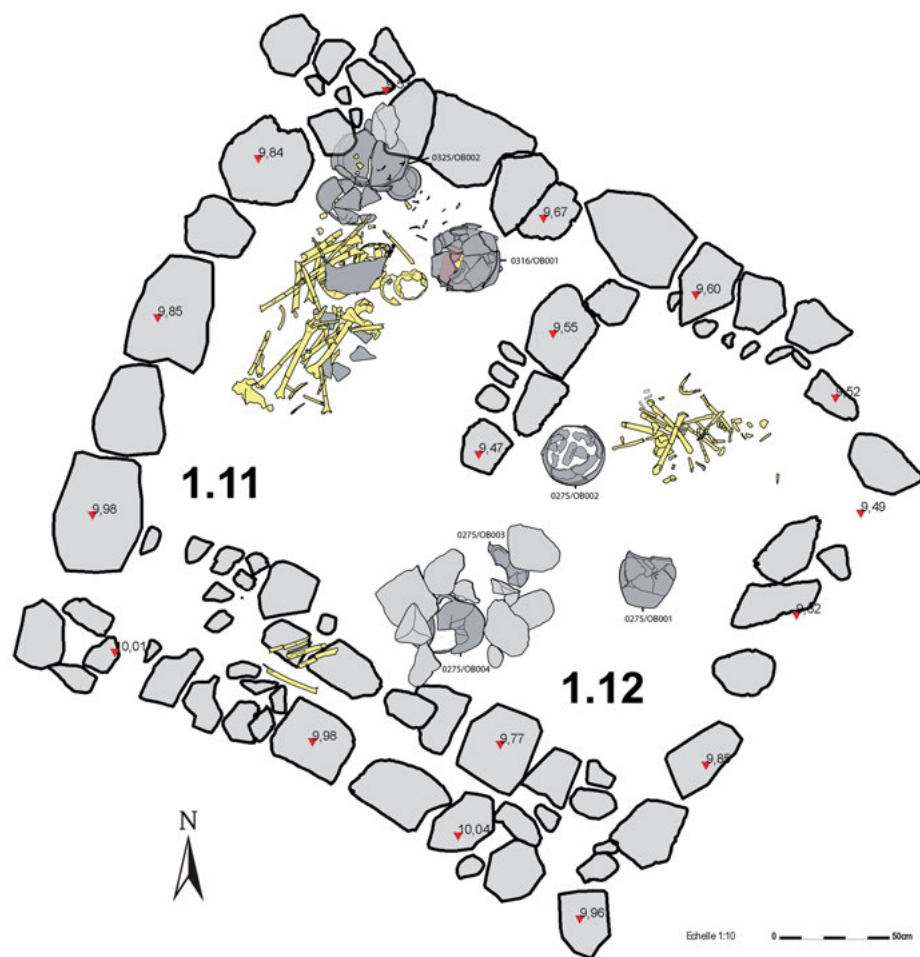


**Fig. 2:** Early Minoan II compartments 1.11–12 showing primary deposition with rearrangement of bones in 1.11 (P. Hacıgüzeller & I. Crevecoeur).

stages, and to concentrate on tracing out the specific ritual *chaînes opératoires* of manipulation that are present in discrete archaeological contexts. This continuum begins, of course, immediately after death, not at the point when a body is deposited in a funerary context: the initial placement of a body in a cemetery space is also a form of artifice, involving inter alia the selection of a body for funerary treatment, its physical dislocation from the original place of death and its repositioning in the place of deposition.

In a recent paper, Triantaphyllou (in press) has reviewed the Minoan funerary literature and concluded that the vast majority of human skeletal material encountered in previous excavations shows signs of intentional manipulation at some point after the initial placement of the body. On the basis of an *ethnographic* distinction

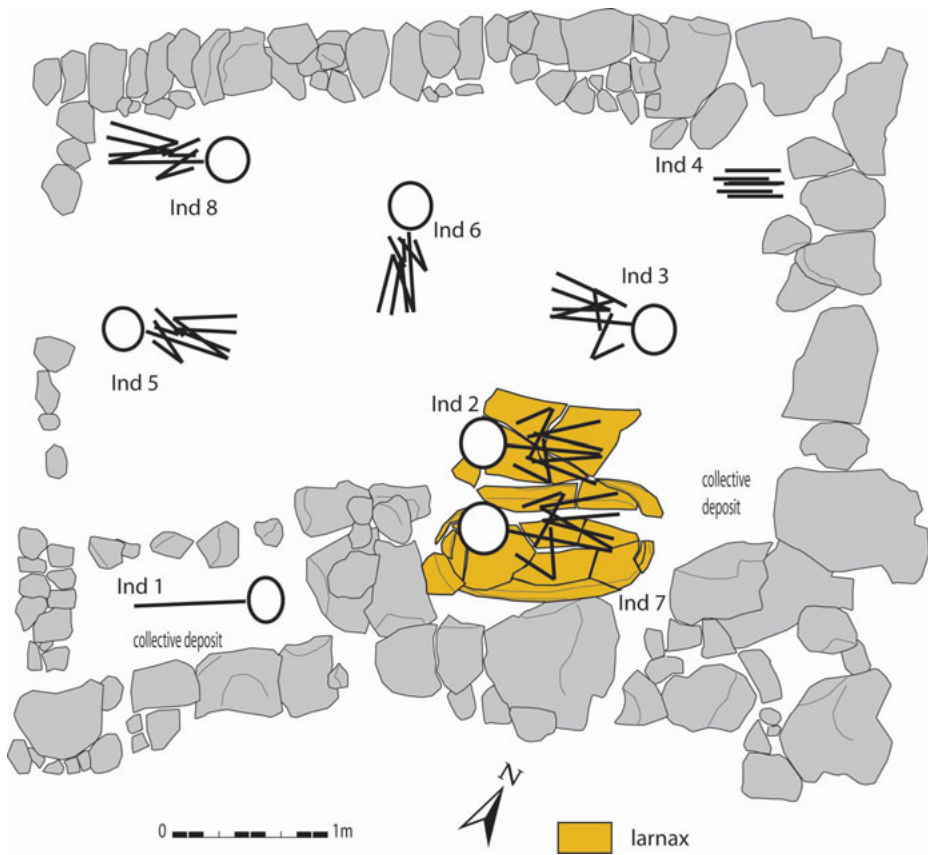


**Fig. 3:** Schematic rendering of burials, including larnax (bottom right) in compartment 9.2 (A. Schmitt).

between primary and secondary treatment, she goes on to conclude that primary burials (defined as burials that showed no signs of subsequent manipulation) were very few and it is much more common to encounter articulated body parts. Following a forensic distinction we would frame this important insight slightly differently: namely that manipulation of human bodies in Minoan funerary contexts was very common, the rule even, but that the current literature generally lacks the necessary resolution and detail to allow adequate exploration of this manipulation. The unfortunate reality is that in most cases we are simply not in a position to be able to distinguish between bodies that have become disturbed, but are still in their primary location of deposition, and bodies or body parts that have been redeposited in a secondary location.

However, putting the forensic distinction between primary and secondary deposits into practice is not always straightforward. A primary deposit of skeletal material can be identified when the initial and final location for the deposition of a body

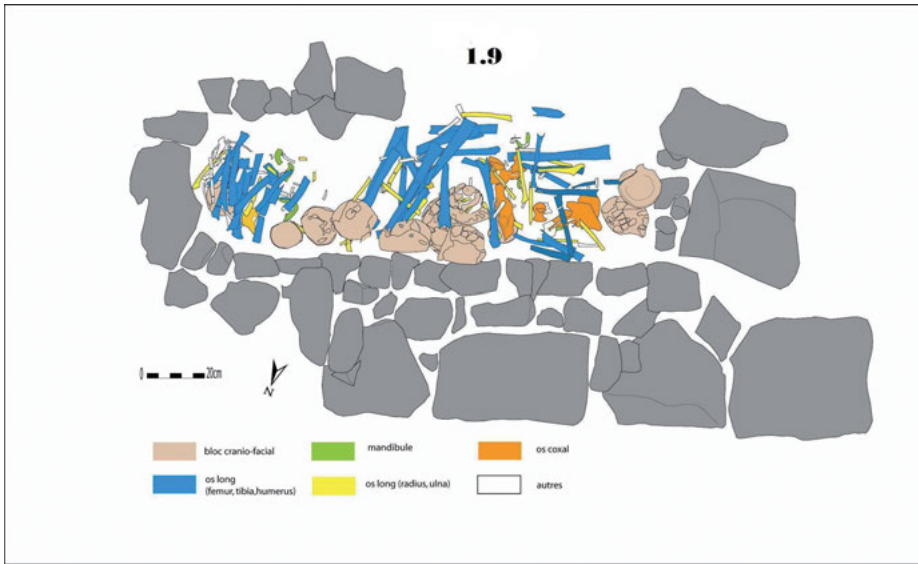


**Fig. 4:** Secondary deposition in compartment 1.9 (A. Schmitt).

coincide. The presence of mixed skeletal remains or the absence of a complete skeleton does not automatically imply a secondary deposit as alterations to the configuration of a primary deposit may occur due to a variety of taphonomic or anthropic factors. Bones may move through natural processes of decay and erosion or through human intervention, such as when an earlier burial is moved to accommodate a later one or when a more large-scale reorganisation of the burial space occurs. In order to speak of a secondary deposit, it must be demonstrated that a body (or body parts) has been moved from its original locus of deposition and that alterations to the configuration of its skeletal elements are anthropogenic in nature with all other potential sources of disturbance excluded (Duday 2009; Crevecoeur et al. 2015). Being in a position to demonstrate this, in turn, requires a commitment to the highly detailed observation and recording of the relative and absolute position of skeletal fragments and associated taphonomy that is the hallmark of the archaeothanatological approach. Applying these techniques to seemingly disordered collections of bone are essential in order to transcend previous impressionistic judgements regarding primary and secondary burial and achieve an accurate characterisation of the complexities present in the archaeological record.

The same is true for other materials, such as pottery. Thus, through detailed in situ recording of the position of sherds, their stratigraphy and taphonomy and subsequently exhaustive refitting studies, it becomes possible to recognise whether a vessel is in primary or secondary position and indeed to determine whether and how a vessel has been manipulated since its initial deposition (e.g. broken or whole vessels pushed aside to make space for further deposition). As with the excavation of skeletal

remains, the notion of ‘articulation’ (i.e. fragments in such a relation to each other as to suggest that they were originally deposited as single whole) is a useful one to apply to the recording of other materials during excavation, not least because it indicates a need to pay careful attention to the position of other potential joining fragments in the vicinity.

Inevitably, it becomes more difficult when one is dealing with ‘disarticulated’ fragments. For instance an isolated sherd in a burial space could, technically, still be in primary position, while the rest of the vessel, to which it belonged, could be in secondary position (i.e. subsequently removed to another space). In this case the temptation would be to infer the opposite on the basis of completeness. Such an example demonstrates the importance of taking other attributes and contextual associations into account (e.g. patterns of breakage, representation and completeness, distribution of mending fragments through deposit, co-occurrence of material of mixed ages, differential wear patterns and, more generally, the formation and taphonomy of the deposit to which the sherds and vessels belong, etc.). In practice, by taking a wider range of such variables into account, we have often found it possible to distinguish between different primary and secondary states, in some cases even for isolated sherd material.

In archaeothanatology a further distinction is made in secondary deposition between ossuaries and secondary placement (Crevecoeur et al. 2015). Secondary placement is defined as the result of a single, planned act in which a specific individual is removed to a secondary location. An ossuary, on the other hand, is a deposit formed by the moving of the disarticulated bones of multiple individuals from a primary to a secondary context on one or more occasions. During excavation it became apparent that both of these categories of deposit were present for the human skeletal material at Sissi, but might this also be valid for other materials? If our notion of a potential symmetry between the treatment of bodies and other materials in cemeteries were to be valid, we would expect to find ceramic equivalents to ‘ossuaries’ and secondary placement in the Sissi cemetery (see below).

## The Sissi cemetery

The site is situated to the east of the modern village of Sissi on the Kephala Hill, known locally as the ‘Bouffos’. The cemetery lies on a series of terraces immediately to the north and northeast of the settlement, on the lower, seaward side of the hill [Fig. 1]. The 2007–11 Sissi excavations were conducted under the auspices of the Belgian School at Athens and directed by J. Driessen (Université Catholique de Louvain). At the invitation of the director of the Sissi excavations, the Katholieke Universiteit Leuven funded and oversaw the excavation of the cemetery, uncovering at least 30 compartments, belonging to several complexes or ‘house-tombs’ (Schoep et al. 2009; 2011; 2012). Stratified deposits from the cemetery indicate that the cemetery

saw deposition between Early Minoan IIA and Middle Minoan IIB. One undisturbed Early Minoan IIA-B deposit was excavated (1.11–1.12; Schoep et al. 2011: 41–7), but unstratified Early Minoan II pottery occurs in several areas of the cemetery suggesting that more Early Minoan tombs may have existed. Several pottery groups intermediate between Early Minoan IIB and Middle Minoan IA have been recognised and tentatively assigned to Early Minoan III. But it is already clear that Middle Minoan IA was a major phase of (re)construction in the cemetery (cf. Gournia). The latest depositional activity in the cemetery dates to Middle Minoan IIB, after which it would seem a different treatment or location was used for disposing the dead. This seems to correspond to the picture from other house-tomb cemeteries on Crete (e.g. Mochlos, Gournia, Palaikastro, Petras; Soles 1992; Tsipopoulou 2012).

## Primary deposition

It is usually assumed, on the basis of accounts given by early excavators of house-tomb cemeteries at Gournia, Mochlos and Palaikastro, that primary burial is rare in house-tombs (Soles 1992; Schoep in press). Boyd Hawes originally defined the house-tomb as ‘an enclosure which from the existing remains of walls and doorway cannot be distinguished from an ordinary dwelling, but which is full of bones and skulls in disorder—a veritable charnel house’ (Hawes 1905: 186–8; 1908: 56). Other early excavators formed similar conclusions about the secondary nature of the deposition of skeletal material in house-tombs (e.g. Palaikastro, Dawkins 1904: 202; Mochlos, Seager 1912: 24). However, as noted above, a primary deposit need not take the form of articulated, complete skeletons, and may well resemble a ‘disorder’ of disarticulated or partially articulated bone.

At Sissi primary burial is well-attested and involves the laying out of the body on the floor of chambers in house-tombs (1.7, 1.6, 1.12, 1.11, 1.2, 9.1, 9.2 [Figs. 2–3] or its placement in a container (e.g. pithos, larnax [Figs. 2–3]). Some primary deposits lack accompanying tableware (e.g. 1.2; Schoep 2009: 48–9), others contain a few (often just one or two) cups or bowls (e.g. 1.6, 1.7, 1.12; Schoep 2009: 51–4; e.g. 1.17, 9.1; Schoep et al. 2011: 49, 66). Larger deposits of cups and juglets are found in open-air spaces outside primary burial spaces (e.g. area to the south of 1.18 and 1.29; Schoep et al. 2011: 48).

In the case of uncontained primary burials, the body can be placed on its back, its sides or even on its front. There seems to be no general rule about orientation or position. There are some cases of primary burial that were undisturbed (9.1), but disturbed primary deposits are most common (Crevecoeur & Schmitt 2009: 86–7; Schoep et al. 2011: 44–7). The degree of disturbance varies and it is sometimes hard to determine the degree to which skeletonised bodies had been intentionally manipulated because of subsequent erosion of the deposits (e.g. adult A in 1.7; Crevecoeur & Schmitt 2009: 63, 66). The Early Minoan IIA deposit from compartment 1.11 (Early

Minoan II) included a primary collective deposit containing a minimum number of four individuals, two of which are completely represented [Fig. 2]. Careful study suggests that this was a primary deposit that was subsequently disturbed by the pushing aside of earlier inhumations, the rearranging of skulls and possibly the removal of parts of previously deposited individuals (Schoep et al. 2011: 44–7; Crevecoeur et al. 2015). In some, seemingly uncontained burials the hyper-contracted position of the legs suggests that these were originally bound.

Inevitably the burial containers that are now best represented in the cemetery are ceramic. However, there are indications that non-ceramic containers were also used. Thus, for example, in compartment 1.17 the upper torsos of two individuals were found superimposed and facing one another in such a position as to suggest they decomposed while contained in a perishable bag or shroud (Schoep et al. 2013: 30). When bodies are placed in ceramic larnakes (Middle Minoan I) or pithoi (Middle Minoan II) there is no general rule about the orientation of the container and the body can be inserted head or feet first. Adults of both sexes and various ages receive this type of burial in Middle Minoan I and Middle Minoan II, while the custom of placing neonatals and foetuses in jars dates back to Early Minoan IIA. The Early Minoan IIA deposit in Loci 1.11–1.12 contains as many as five jars of different types containing such remains [Fig. 2]. Although the neonatals and foetuses are extremely fragile, there is no doubt as to their identification (Schoep et al. 2011: 44–7). The primary depositions of neonatals or foetuses in Loci 9.1 and 1.10, which date to Middle Minoan I, were not placed in a container.

In most cases, pithos burials are primary burials. However, there is an example of a disturbed child burial which following decomposition had been removed from and placed alongside the pithos to make space for a new primary burial in the pithos (1.29; Schoep et al. 2012). In one case the head of the deceased, which protruded beyond the collar of the pithos, was covered by a jug (1.2). In several cases a juglet was found underneath (1.29) or next to the pithos (1.2). No grave goods, or at least none in durable materials, were placed inside the pithos with the deceased.

The deceased must have been placed inside the pithos either before or after rigor mortis. In the case of the former this would presumably have taken place in the settlement, in the latter it could have happened in the cemetery. This raises interesting questions about the selection of the container used: was the pithos or larnax selected from an active domestic context or acquired especially for funerary purpose? We hope eventually to answer this question through a study of use-wear. In cases where the deceased was placed in an already fragmentary pithos or among pithos fragments (e. g. 1.18), we presume that a reuse of containers already in the cemetery is implied. In the open space of 1.18 the body of an adult was placed between two halves belonging to two different pithoi: the opening of the top half (pithos 1) oriented west, that of the lower half (pithos 2) was oriented east. The adult was placed in a hyper-contracted position, suggesting that the legs had been bound together before insertion off the body into the pithos.

Larnakes have so far only been found in two locations (primary 9.2 and secondary in 1.30) in contexts of Middle Minoan IA and Middle Minoan IB date. In 9.2 the larnax was placed on a pebble floor and contained the primary remains of an adult lying on his or her back, with the legs drawn up and the head and knees probably resting against the sides of the larnax (Schoep et al. 2012: 44–5) [Fig. 3]. Although the absence of small bones (hand, feet, spine) could be explained by bad preservation, the missing tibia bones cannot and clearly suggest that they had been removed after decomposition. At a slightly later moment in time, after a thin layer of sediment had built up on the pebble floor of compartment 9.2, a side fragment of the larnax was broken off and placed horizontally to accommodate the remains of another adult; at this moment the left humerus of the individual in the larnax was probably disturbed. The second adult was placed on this larnax fragment on his or her back with arms folded across the upper body and legs drawn up to the thorax, a position which can only be explained by assuming that the legs were bound together or contained in a tight perishable container (e.g. textile, basket). This skeleton is not complete since the feet, right-hand tibia and fibula are missing. The placement of this second adult probably disturbed the left humerus of the individual buried in the larnax. Hypercontracted legs were also noted for individual 8 placed on the pebble floor along the south wall of 9.2 and associated with a gold earring and gold ‘drawing pin’ (Schoep et al. 2013: 45).

To summarise, it may be noted that the majority of depositions of human skeletal material found inside compartments of the Sissi house-tombs may be characterised as primary depositions: i.e. the locus of decomposition corresponds with the final resting place of the body. However, few were completely undisturbed. While in some cases erosion may be to blame (e.g. adults in 1.2), in others the disturbance was clearly anthropogenic and included the reorganisation of bones in the same location (e.g. 1.11) or their selective removal (e.g. 1.7; 9.2, individual 7). The case of an adult (individual 2) in compartment 1.7 is particularly noteworthy as there is evidence for both the removal (right fibula) and displacement of bones (left tibia and left tibia; Crevecoeur et al. 2015).

What happened to specific bones and body parts removed from primary depositions is unclear. Removal represents a form of diversion, but the motivation(s) for this, the new journeys taken and the final destination of the parts are by no means clear. The characteristics of the secondary depositions encountered in the cemetery (see below) are such that it seems unlikely that they represent the end-point of this process of selective removal. Thus for example, secondary depositions typically include skulls, yet in cases where bones were removed from primary depositions the skulls are usually left in place (a possible exception is the Early Minoan II deposit in 1.11 where the remains of four individuals were found but only three skulls recovered). Rather, the practice of removing some bones from primary depositions during the period of their accumulation seems to represent a separate category of ritual practice, one closer in time to the moment of primary deposition and thus, perhaps, more intimately

connected with the treatment and memory of specific individuals. One possibility is that these removed parts circulated among the living in some way as mnemonic devices, as is attested for Neolithic settlements on Crete and elsewhere in the Aegean.

## Temporalities of accumulation and clearance

This evidence for the manipulation of human skeletal material, whether simple reorganisation or selective removal, sheds light on the temporality of deposition in primary deposits. The impression gained is one of a gradual accumulation of bodies in a specific burial space, each one laid down in a discrete episode of deposition. It is difficult to put absolute figures on the total amount of time represented by such primary depositions, but usually the associated pottery suggests they accumulated within the span of a single ceramic phase. In such cases a figure of no more than a century or two would seem reasonable, with a period considerably less than this quite probable. The absence of any clear evidence for age or sex biases would be consistent with a scenario where all members of the group burying in a specific space had the right to burial. This would mean that individual burial spaces could have filled up relatively quickly, perhaps over no more than a few generations.

Given the likelihood that bodies accumulated relatively quickly in burial spaces, on the one hand, and, on the other, the long use-life of most burial complexes in the cemetery, which typically span Middle Minoan IA-II, it is likely that periodic clearance of burial spaces was regularly practised. Direct evidence for clearance within primary burial spaces is not always apparent, but neither should it be expected: in cases where floors were cleared and reused immediately—surely the most likely outcome—there may be little or no sign that clearance had taken place. Alternatively successive floors may have accumulated, only to be removed by a subsequent more extensive phase of clearance that cut back and removed these floors and took chamber back down to an earlier floor level. In cases where direct evidence is lacking the clearest indications of clearance come in the form of chronological disparities between the date of the original creation of a surface or chamber and the date of the final deposit. Thus, for example, compartment 1.7, which was originally constructed in Middle Minoan IA, contained a pebble floor upon which was found a primary deposition of five individuals (two adults, three children) together with pottery dating to Middle Minoan IB–Middle Minoan IIA.

Clearance is more obviously evidenced in spaces with floor levels where skeletal and other material is absent (e.g. 1.2, 1.13; Crevecoeur & Schmitt 2009: 71; Schoep 2009: 48–9; Schoep et al. 2011: 57; 2013: 36–7). In the case of 1.2 and 1.13 the floor level was very obvious, being made of pebbles, it may be surmised that the floors had been cleared but not used for some time, allowing a thin (ca. 0.10 m) layer of sediment to accumulate upon which burials were later placed. This would suggest that clearance did not always directly precede new burials, and thus was not always motivated by the need to accommodate them. In 1.13 the otherwise empty pebble floor contained an

inverted cup containing charcoal. Might this deliberate placement mark the terminal action of a ritual of clearance, which in addition to emptying the chamber of skeletal and other materials, had involved the use of fire? This association between fire, charcoal and inverted cups and bowls is one to which we will return below.

However, clearance, while probably common, was not always practised once a chamber became full. Alternatively the chamber might have been simply abandoned, either permanently or long enough for sufficient sediment to accumulate and partially or entirely bury the deposited remains. Thus the Early Minoan IIA primary deposition in Locus 1.11 [Fig. 2] was found covered by a deposit, which soil micromorphological study has shown to contain fragments of wall plaster and roofing material, consistent with the permanent abandonment and gradual decay of the tomb (Carpentier 2015). The lowest burial level in 9.1 and 9.2, which dates to Middle Minoan I, was found almost entirely covered by sediment, upon which several cups (probably Middle Minoan IIA in date) but no skeletal material had been deposited subsequently.

## Secondary deposition

A valuable additional perspective on the wholesale clearance of chambers is provided by a number of secondary deposits in the Sissi cemetery. Ongoing study of these suggests that at least some rituals of clearance involved the careful separation of human bone from ceramic (and other) materials.

### Purely skeletal secondary deposits

In 1.9, a small compartment attached to 1.10, a secondary deposit was found containing the remains of at least 13 individuals (nine adults, two children, one adolescent and one perinatal [Fig. 4]). Every individual is represented by more than one bone but skulls are the most represented anatomical part (11 individuals) and coxal bones were also favoured. The deposit contained some small bones, such as carpals, metacarpals and phalanges, but these are proportionally underrepresented and raise the question as to whether these few small bones were brought to compartment 1.9 as the result of a specific selection of this type of bone or through transfer of a body part (for instance the upper limb) that had not completely decomposed. Support for the latter is provided by the existence of a loose anatomical connection between a craniofacial complex and the two first cervical vertebrae (atlas and axis) as well as a femur and an innominate bone in strict anatomical connection (Crevecoeur et al. 2015).

Unlike primary depositions these bones were found placed, not on a prepared floor of clay or pebbles, but directly on the uneven natural bedrock. Also striking is the complete absence of pottery. This makes dating 1.9 difficult, but two handmade, straight-sided cups, found placed against the wall that 1.9 shares with 1.10, provide a

terminus post quem of Middle Minoan IA (i.e. ca. 2100–1925 BCE; Manning 2010: table 2.2). It remains unclear why people were selected for secondary deposition. However, the contents of 1.9 indicate that both adults and children could be selected. In other words age and sex representation in 1.9 broadly parallels that of primary burial spaces and thus would be consistent with a scenario of selection following clearance of one or more primary burial spaces.

More generally in the cemetery, it is noteworthy that other such secondary deposits of human skeletal material are actually rather scarce, at least in our excavated sample. This would suggest that the majority of the skeletal material obtained from the regular clearance of chambers was not selected for formalised secondary deposition in the cemetery. What happened to the (majority) of skeletal material that was not selected for secondary treatment remains unclear, but the implication would seem to be that they were discarded, perhaps in an unexcavated or now eroded peripheral area of the cemetery, perhaps in the sea which borders the cemetery to the north and west.

## Purely artefactual deposits

Excavation of compartment 1.16 and open-air spaces 1.15 and 1.30 revealed a stratified series of secondary depositions of Middle Minoan IA, Middle Minoan IB and Middle Minoan IIA pottery. Compartment 1.16 is a small chamber, built in Middle Minoan IA onto the extreme eastern end of a large and still only partially excavated house-tomb complex at the northern edge of the cemetery. Indications are that 1.16 may have been especially built to house pottery that had been moved from primary depositions elsewhere (e.g. burial chambers, open-air deposits). The lowest stratified unit inside 1.16 comprised a secondary deposition of ceramic material. Joins were typically distributed throughout the deposit suggesting that the initial breakage of the pottery had not occurred in situ and, moreover, that the fragments had become mixed before their redeposition in 1.16. Handmade straight-sided and carinated cups were common and other forms include jugs, bridge-spouted jars and a highly fragmented but seemingly complete larnax with rope decoration. Much of the pottery, including the larnax, showed evidence for burning, indicating contact with fire prior to deposition in 1.16. The presence of the larnax, cups and bowls seems to be consistent with an origin for at least part of the assemblage in a primary burial deposit. Skeletal material is almost entirely absent from the deposit, the sole exception being a small number of burnt cranial fragments which so closely resemble sherds that they were not identified during excavation, nor during washing, but only during the ceramic study. It seems likely that their presence in this deposit resulted from them being similarly overlooked in the original sorting of human skeletal from ceramic material that took place during clearance of a primary burial chamber. The evidence for the presence of fire, both on the pottery and the skull fragments, is once again noteworthy and suggests that a fire ritual (fumigation?) was used as part of clearance rituals.

However, the quantity and typological range of the pottery represented (numerous cups, bowls, jugs and juglets) suggest that the episode of clearance that produced the Middle Minoan IA deposit in 1.16 probably also involved the clearance of other primary deposits and not simply those from other burial chambers. Specifically, the presence of numerous pouring vessels, cups and bowls more closely resembles the primary deposits of pottery found in open-air spaces.

Outside compartment 1.16 are two small open-air spaces, one very narrow to the east (1.15) between 1.16 and a large wall to the east, and a larger one to the south (1.30) between 1.16 and a low, slightly overhanging rocky 'cliff' that delineates the southern edge of the terrace upon which the complex comprising 1.6–8/16/31 was built. While 1.15 remained free of deposition in Middle Minoan IA, 1.30 contained a large secondary deposit of pottery, in which charcoal was common but skeletal material entirely absent. A large proportion of the pottery was fully disarticulated, meaning that mending fragments were not found in (anatomical) relation, but rather were distributed throughout the deposit. At least one semicomplete larnax was represented in this way together with flared bowls, jugs and juglets and straight-sided and carinated cups. However, while much of the 1.30 Middle Minoan IA deposit appeared to have been dumped with little care or attention, its most striking feature is a series of open vessels (cups, bowls) that had clearly been deliberately placed, typically upside down, sometimes stacked one on top of another, and sometimes with charcoal inside. This more careful treatment was mainly concentrated against and under the rock overhang at the southern edge of 1.30. While some of these vessels are complete, more often they are more partially preserved, a missing rim fragment here, a missing handle there, but never so fragmented as to entirely lose their capacity to contain. Careful excavation and recording suggests that the missing fragments were not overlooked in situ during recovery, while detailed study confirms that they are absent from the deposit. The evidence is thus consistent with these more complete vessels in 1.30 representing a secondary deposition of vessels originating in a primary deposition elsewhere.

This deposit is thus consistent with having resulted from the clearance of one or probably several primary deposits, some deriving from primary burial chambers (e.g. larnax, some cups and bowls), others possibly from larger externally located 'group consumption' deposits. Far from simply digging and dumping, redeposition was characterised by considerable formality and attention. The deliberate placing of charcoal inside inverted open vessels (mainly flared bowls) recalls a practice already noted elsewhere in the cemetery, and suggests the use of fire (such as might be used in fumigation rituals). The separation of human skeletal from ceramic material was clearly very carefully done: the complete absence of even small bone parts strongly suggests that pottery mixed with sediment was not dug and dumped, but rather that vessels and vessel fragments were individually collected by hand. While smaller fragments were probably collected in a container (such as a basket) and dumped in 1.30, more complete open vessels were selected for special placement against the natural rock.

In the next phase of compartment 1.16, dating to Middle Minoan IB, low benches were built against its east, south and west walls and a small deposit of pottery was found associated with this ‘benches phase’. Outside, this time in both 1.15 and 1.30, a large secondary deposit of Middle Minoan IB pottery was recovered. Detailed study has shown this to be a single deposit with numerous joins between 1.15 and 1.30 and between its upper and lowermost parts. This Middle Minoan IB deposit shares the same general characteristics as the Middle Minoan IA deposit in 1.30, suggesting continuity in depositional practice. Thus the majority of the pottery is fragmented and was found disarticulated and distributed throughout the deposit. At least two semi-complete larnakes, and fragments of several others, are represented and complete or semicomplete cups and bowls were deliberately placed, upwards or inverted, under the overhanging rock face to the south of 1.30 or against the wall that demarcates the eastern edge of 1.15 [Fig. 5]. Placed against the latter was a small concentration of handle fragments; all but one of these were worn and appear to have been collected as fragments, but one was fresh and proved to join with a vessel fragment found at a much lower depth in the deposit. This deliberate selection and grouping of handle fragments recalls the practice of selective grouping of human bones observable at Sissi and in other Minoan cemeteries (Branigan 1987).



**Fig. 5:** Inverted cups and bowls placed under overhanging bedrock, part of a Middle Minoan IB pottery deposit in 1.30 (after authors).

Although no direct joins have yet been found between the small Middle Minoan IB ‘benches phase’ deposit inside 1.16 and this larger Middle Minoan IB secondary deposition in 1.15/30, the former did contain the base of a distinctive, thin-walled amphora, fragments of which were found dispersed throughout the 1.30/1.15 deposit. While further study is required to confirm this hypothesis, the evidence is consistent with a scenario where compartment 1.16, more specifically its low benches, served as a special focus for the deposition of selected ceramic vessels, either as a primary deposition or, perhaps more likely, as a secondary deposition following the initial clearance of primary deposits elsewhere. At one or more later points in time, perhaps when it was considered to be full, compartment 1.16 was cleared of pottery, which was partially dumped but also carefully placed in 1.15/1.30.

## Secondary placement of skeletal (and ceramic) material

Compartment 9.1 comprised two different deposits: while its eastern part held a primary deposition of seven individuals, its western part contained a secondary placement of skeletal and ceramic material together. The former consists of the skull, long bones and hip bones of a slender adult; the long bones were grouped along the west wall, the coxal bones to the south and the cranium in the middle; the latter comprises a fragmentary lamp and tripod dish, which were placed over the bones (Crevecoeur et al. 2015).

## Conclusions

Cemeteries are places of transformation, material, social and spiritual. They are ritual arenas of the dead, where the living go to enact understandings, whether personal or shared, of the world and their place in it. In the process, materials take on different forms, are manipulated and deposited, remanipulated, redeposited and taphonomically altered, until perhaps one day they are released from their sediments by erosion or archaeological excavation. In this paper we have reflected upon our attempts to trace the potential complexity of this manipulation and transformation of materials in the Sissi cemetery. Central to our approach has been a commitment to highly detailed and specialist contextual recording during excavation. This meant that excavation was slow, and occasionally fraught, but it has only been through exhaustive, meticulous recording of materials, sediments and their relations by trained specialists in the field that we have been able to provide firm answers to old and new questions. In the process we occasionally found there to be an advantage in questioning some conventional disciplinary and conceptual divisions; some we ended up breaking down and abandoning, others we tried hard to bridge more effectively.

And so, while the excavation and study of human skeletal material is necessarily a task for trained specialists, we have also gained insights by treating skeletonised bodies as just another material category and exploring relations with other material categories (e.g. ceramic, lithic etc). We have avoided enforcing a potentially arbitrary distinction between funerary and postfunerary ritual practice and instead have sought to treat all cemetery practice as a continuum of material manipulation, composed of discrete episodes of ritual practice connected by transformations to specific materials and their settings (ritual *chaînes opératoires*), and punctuated by a distinction between primary and secondary loci of deposition. In tracing out specific ritual *chaînes opératoires*, we have drawn attention to certain common emphases (primary deposition, fumigation and clearance, secondary deposition), but we have tried to avoid the temptation to reduce diversity in practice to a single, 'Minoan' or local code of funerary ritual. While there were clearly shared understandings of what was appropriate practice, our experience at the Sissi cemetery, working with only a tiny fraction of the total deposits laid down in the life of the cemetery, is that every time a walled chamber was created or a body or artefact first laid down, there was a diversity of potential outcomes, involving different possibilities for manipulation and diversion and different specific ritual *chaînes opératoires*.

We see this diversity and contingency in the treatment of bodies and other materials in the Sissi cemetery as closely linked to the changing histories of the specific groups that constructed and curated, modified and manipulated and abandoned or destroyed the house-tomb complexes (kin groups? lineages?) and their specific compartments (families? households?). Most of these compartments were venues for the primary deposition of bodies and artefacts. Typically, however, bodies and pottery exhibit signs of subsequent disturbance, both natural and anthropogenic. They were both deliberately rearranged, sometimes on multiple occasions, and, in some cases, parts could be removed from the place of primary deposition. However, while bodies probably remained in the place of primary deposition (prior to substantial clearance episodes), the generally very low number of cups and bowls (i.e. n=0–2) occurring in primary burial chambers, usually alongside multiple individuals, would seem to imply that cups and bowls were more regularly cleared from burial chambers than skeletal material or that not all burials were accompanied by ceramic vessels.

All indicators suggest a wide access to primary burial during the attested Early Minoan II and Middle Minoan I-II phases of the cemetery and thus that individual chambers regularly became full, perhaps within a generation or two. Clearance of primary burial chambers was thus a regular occurrence. However, neither was it a rule, nor was it necessarily always motivated by a need to make new burials. Chambers could also be abandoned for a period of time, perhaps marking disruption in the line of the specific (household?) burying group. Common emphases in clearance rituals appear to be the use of fire, the complete clearance of a primary burial

space, the careful separation of skeletal and ceramic materials, and the care and respect paid to the secondary deposition of at least some of these skeletal and ceramic materials.

Within the category of secondary deposition, both ‘ossuaries’ and secondary placements of skeletal and ceramic material are attested. However, in contrast to primary burial, formalised secondary treatment of bodies seems to have been a much rarer and thus more restricted practice. On the basis of our excavated sample we are forced to conclude that secondary discard of human bone outside burial structures, following clearance, was a common practice. Nevertheless, when ‘ossuaries’ occur (e.g. 1.9), they seem to be neither age- or gender-specific, reflecting a group of essentially the same age and gender composition as found in primary burial chambers.

In contrast, secondary ‘ossuaries’ of pottery are more common. Study of secondary deposits in and around compartment 1.16 suggests that pottery, once initially deposited in the cemetery, was not only consistently retained (in contrast to skeletal material) during clearance, but also continued to be formally and respectfully treated during secondary redeposition(s). This contrast in the secondary treatment of ceramic and skeletal material seems to hint at differences in the way these two materials were perceived, which in turn might link to their different material and taphonomic properties. Might it have been believed that the essence of an individual could exit its skeletal remains (and thus that this material could then be discarded in the open-air and allowed to decay to nothing), but that this essence somehow remained trapped in pottery, a material which better resists the decay of time?

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