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Commingled burials and shifting notions of the self at the onset of the Mycenaean era (1700–1500 BCE): The case of the Ayios Vasilios North Cemetery, Laconia

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ABSTRACT

Mortuary practices in southern Greece undergo a radical transformation at the beginning of the Mycenaean era (or Late Bronze Age, around 1700 BCE). This period sees the introduction of formal cemeteries, larger tombs, richer burials and a more complex ritual sequence involving multiple interments, tomb re-use and the 'secondary treatment' of earlier burials. 'Secondary treatment' is a rather vague, all-inclusive term, which includes various practices, such as disarticulating skeletons, mingling the bones and relocating them in piles or scatters either inside or outside the tomb (completely or selectively). Two questions arise: Why is this practice introduced? Why does it take different forms? The recent excavation of Ayios Vasilios North Cemetery in Laconia was designed on the basis of an integrated bioarchaeological strategy in order to provide the opportunity to fully explore these issues. While our ultimate goal is to understand the causes and consequences of the wider transformations in funerary practices, the focus of this paper is on one aspect: the re-use of graves and the secondary treatment of earlier burials. Through an integrated approach which aims to reconcile archaeological theory with current methodological advances in bioarchaeology and funerary taphonomy, we seek to reconstruct the funerary activities in great detail, in order to fully observe variation and change, and, ultimately, understand how this considerable variation may inform us on the re-definition of social relations at death, or shifting notions of the self.

Beyond the specifics of the Mycenaean case-study, our aim is also to address broader methodological and theoretical questions, stressing the need for a true integration in the study of mortuary assemblages. To this end, we propose a taphonomy-oriented, methodological approach for the field recording and lab analysis of the human remains, drawing on current advances in archaeothanatology, forensic science, and analysis of commingled remains. This approach works best if placed within a clear theoretical framework, which recognises the manipulation of the dead body as closely associated with notions of personhood, and at the same time respects the historical specificity of the mortuary context and engages with the full complexity of contextual empirical data. Using the case of Ayios Vasilios in order to illustrate this process, our specific questions include: the formation characteristics of funerary assemblages, frequency and sequence of tomb use, diversity of secondary treatment, and age and sex differences in funerary treatment.

Our results demonstrate a considerable extent of variation in funerary disposal and secondary treatment during this transitional period. Shifts of emphasis within this diverse treatment, especially regarding bodily fragmentation and modes of dispersal, suggest that, in Ayios Vasilios, a) age, but not sex, differences in funerary treatment were at play, b) mortuary transformation embodies the transformation from narrower (possibly household-based) associations to increasingly wider concepts of lineage and descent, c) tensions between tradition and innovation, as well as integration and differentiation, are evident in the variation of secondary treatment and coexistence of different forms (as already attested in other funerary and daily practices).

1. Introduction

Funerary practices of the Late Bronze Age Greek mainland (i.e. Mycenaean, 1700–1100 BCE), and especially the custom of multiple burial and secondary treatment of the body, have in the last decades become a central focus in Aegean mortuary studies (e.g., Voutsaki, 1998, 2010a, 2016, forthcoming; Cavanagh and Mee, 1998; Boyd, 2002, 2015, 2016). Most recently, our understanding of mortuary rites has received a new impetus from current theoretical approaches drawing on theories of practice (e.g., Boyd, 2002, 2015, 2016; Voutsaki, 2010a, forthcoming), as well as from a growing bioarchaeological interest in the treatment of the body (especially for Mycenaean material: Triantaphyllou, 2001,

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2010, in press; Papathanasiou, 2009; Moutafi, 2015; Lagia et al., in press; Jones, in press).

The re-use of tombs and the secondary treatment of earlier interments are central elements of the funerary ritual in Mycenaean tombs used for multiple burials (the so-called *tholos*, i.e. built vaulted, tombs, and chamber, or rock-cut, tombs). These practices are introduced in the transition from the Middle to the Late Bronze Age (ca. 1700 BCE), which sees the dramatic transformation of the mortuary customs: formal extramural cemeteries replace the intramural graves of the previous period; large, elaborate tombs, especially designed for re-use (i.e. the *tholos* and chamber tomb, but also the shaft-grave, the built tomb, and various hybrid types) replace the earlier simple pits and cists; complex mortuary rites, involving the re-use of graves and the secondary treatment of earlier burials, replace single interments; finally, valuable objects are now deposited with the dead, in contrast to the funerary austerity of the Middle Bronze Age. In this period therefore status differences are stressed, as well as kinship and descent. It has been argued elsewhere that we see a shift of emphasis from the household to the wider kin group (Voutsaki, 2010a, 2010b, 2016). In addition, age and sex divisions become more pronounced: children are underrepresented in extramural cemeteries, as they are still buried primarily among the houses. Finally, in some elite precincts, notably in the Grave Circles of Mycenae, men predominate (Voutsaki, 2004, 2016). The transformation of the funerary practices is an integral element of the pervasive changes in the transition from the Middle to the Late Bronze Age: the introverted, conservative, kinship-based and materially austere mainland societies give way to the expansionist and competitive Mycenaean polities (Voutsaki, 2010a, 2010b, 2016).

To understand the causes and consequences of the changes in mortuary practice is essential if we want to interpret the broader social developments which take place in this period. In this paper we will focus on one aspect of these changes: the re-use of graves and the secondary treatment of earlier burials. Several questions arise: why these practices were introduced, why secondary treatment took different forms, and what this variation can tell us about the re-definition of social relations at death. While exploring these questions, we would like to demonstrate how the combination of advanced taphonomic observations, contextual bioarchaeological analysis, and a theoretical framework enables us to reconstruct funerary activities with more accuracy, to observe change and variation, and, ultimately, to start approaching the transformation of social relations and the re-definition of notions of the self. We will develop our argument on the basis of a specific case-study: mortuary practices in the early Mycenaean North Cemetery at Ayios Vasilios, Laconia, southern Greece. We should stress that the excavation of the cemetery has been only recently completed and that data analysis is still in progress; therefore, the objective of this paper is not to resolve these complex issues, but to advocate an integrated theoretical and methodological approach as the most effective means to this goal, applying it here to a (necessarily limited) set of data. We propose an explicit taphonomy-oriented methodology for both the field recording and subsequent analysis of the human remains, drawing on current advances in archaeothanatology, forensic science, and analysis of commingled remains. The unparalleled level of analytical detail gained by these methods should be combined with contextual observations of the archaeological data and placed within a theoretical framework inspired by social theory, anthropology and cultural history. The main message is that mortuary studies in archaeology should make use of advanced taphonomic approaches to bioarchaeological data without losing sight of the significance of mortuary ritual for the creation of social identities and the construction of the self.

In this short paper, we will limit our analysis of re-use and secondary treatment to specific issues such as: the formation characteristics of each assemblage, the frequency and sequence of tomb use, the forms of secondary treatment with regard to choices adopted for bone retention and removal, complete, selective or random application, extent of skeletal involvement, and spatial distribution, and the differential treatment of different sex and age groups. We would like to mention, however, that these first observations will be complemented with a full contextual analysis of the mortuary data, as well as an extensive programme of scientific analyses, including organic residue analysis, soil micromorphology, radiocarbon analysis, isotopic analyses, and ancient DNA, which will allow us to explore different dimensions of personal identities and thereby to understand norm, variation and change.

2. Theoretical approach

Current archaeological theory perceives mortuary practices (and indeed all social practices) not as the passive reflection of social reality, but as a mode of self-representation, giving material form to age, gender, kin, status and other divisions according to the funerary ideology of the period. At a deeper level, mortuary ritual can be seen as a mode of reflection on notions of the self (or personhood), i.e. on the person's position in the social and cosmological universe (Fowler, 2004: 4–5). The discussion on personhood has a direct bearing on another important operative concept in archaeology, that of agency. Recent discussions have stressed that we cannot project the modern, western concept of the individual, of the unencumbered agent, into premodern societies. Rather, we need to see personhood as historically situated and deeply relational, embedded in a network of traditions, social ties and obligations (LiPuma, 1998; Barrett, 2000; Fowler, 2004; Robb, 2010; Voutsaki, 2010a). While undoubtedly this theoretical position takes mortuary studies forward, it still provides only a general, abstract framework, which often relies too heavily on ethnographic evidence, overlooks historical specificity, variation and change, and fails to engage with specific empirical data (Voutsaki, 2010a). To put it differently, we run the risk that the whole of prehistory will be populated by timeless and generic Melanesian 'dividuals' (Jones, 2005: 195) – in which case, the notion of a relational personhood loses its explanatory value.

Another problem in mortuary studies arises from communication gaps between different disciplines. Despite the general consensus –at least, in theory- on the necessity of inter-disciplinarity and integration, in practice, archaeology and physical anthropology still often fail to communicate properly (Goldstein, 2006). Human skeletal analyses often remain marginalised, considered as secondary to the social analysis of mortuary contexts (Gowland and Knüsel, 2006: ix-x). Moreover, theoretical reflection on the skeletal body started fairly late (Sofaer, 2006: 25, 86–88). As a result, the complexity of the mortuary data is not fully appreciated, undermining the interpretive strength of our approaches.

An integrated, contextual, and theoretically informed analysis of human remains is essential for a deeper understanding of mortuary practices, especially in the case of multiple burials involving secondary treatment. Specific aspects of the manipulation of the dead body, such as fragmentation and dispersal, are closely associated with notions of personhood and can be instrumental in re-defining social relationships at the time of death (Chapman 2000; Fowler 2004; Budja 2010). That said, we should stress that we do not advocate a simplistic direct association of intact primary burials with individual personhood and of disturbed, fragmentary, or commingled remains with dividual notions. Secondary treatment always involves some degree of bodily fragmentation. It is only in the exact form, extent and details of this practice, as well as in its contextual patterns and correlations with the osteobiographies of the persons interred, that we may discern changes in reflections of the self; usually, not as a rigid opposition, but rather as subtle shifts of emphasis between individual and dividual notions (Moutafi 2015, 87–89).

A multi-faceted bioarchaeological approach was developed by Moutafi (2015) in order to fully address (record, analyse, and interpret) the complexity of commingled funerary contexts. This approach regards the taphonomy of skeletal assemblages as essential for reconstructing the acts of the living with maximum accuracy. Through a dual prism, human bones are viewed both as subjects of their own identities and

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lived experiences (cf. 'osteobiographies': Robb, 2002; Boutin, 2012), and objects to be manipulated by the living, interacting with them through their gradual transformation from dead body to ancestor. This approach allows us to overcome false dualities (object/subject, cultural/biological, living/dead, cf. Sofaer, 2006: 31–61), reconstruct social relationships and approach shifting notions of the self -as long as the specificity of the mortuary context is respected (cf. Robb, 2013). In this paper, our focus is on the taphonomic reconstruction of the mortuary acts, hence only the main dimensions of personal identities of the dead (sex, age) will be addressed at this stage.

3. Methods

This approach requires the application of an up-to-date, but also time-efficient, methodology, which specifically addresses the taphonomic analysis of commingled human remains and the reconstruction of funerary activities. The excavation of the North Cemetery at Ayios Vasilios was carried out on the basis of an integrated bioarchaeological research design, which aimed at the optimal recording, documentation and recovery of the skeletal material in the field, and maximised contextual stratigraphic and taphonomic information. The excavation of all contexts with skeletal remains was supervised by the osteoarchaeologists of the project (I. Moutafi and E. Vika) in order to ensure accurate bone identification, professional recording of bone arrangements and anatomical relationships, but also accurate archaeological understanding of stratigraphic and spatial associations between the biological and cultural material. The excavation of each burial context proceeded in microstratigraphic layers, documented through analytical logbook recording, osteological forms and exhaustive photographic recording, as well as selective drawing, orthophotography and photogrammetry. Identifiable bones were individually numbered, tagged on photographs, and separately collected; small unidentifiable bone fragments were collected in each layer by micro-areas, precisely outlined on plans and photographs.

Osteological analysis followed the standard protocols for detailed data collection (Buikstra and Ubelaker, 1994; Brickley and McKinley, 2004), modified towards a more detailed recording of the state of preservation: precise identification of each numbered fragment and detailed information on completeness, surface condition, and type of fracturing. Data collection included recording of both morphological and metric evidence pertaining to sex, age, stature, palaeopathological alterations, non-metric traits, and entheseal changes (for full details on recording methodology, see Moutafi, 2015: 99–106). Even though demographic assessment is the only biological parameter included in this discussion, the complete recording of all other aspects was essential for assisting refitting analysis and the individuation process (see below).

An integrated methodology, drawing on current advances in the analysis of commingled human remains and field anthropology (or *archaeothanatology*, Duday, 2006, 2009), was developed to reconstruct the formation processes of each skeletal assemblage, including human actions and natural processes (Moutafi, 2015: 107–121, forthcoming). The following methods were used:

a) *Extensive segregation and individuation of the commingled remains*. Detailed process of sorting was undertaken, aiming at the identification of skeletal elements from the same individual within a commingled skeletal assemblage. Based on visual pair-matching, the process was assisted by bone differences in age, sex, size and robustness through osteometric sorting and comparison of articulating bone portions (cf. Buikstra et al., 1984; Byrd, 2008).

b) *Detailed estimation of the Minimum Number of Individuals (MNI)*. MNI calculations are a prerequisite of all further analyses of skeletal part frequencies and preservation patterns, as well as the basis for reconstruction of episodes of tomb use and palaeodemography. To maximise accuracy, MNI was calculated by multiple discrete identifiable skeletal parts on the basis of explicit counting rules, and was finally estimated as the highest number of frequencies per context, informed by non-matching specimens (Moutafi, 2015: 109–11).

c) *Analysis of preservation patterns and bone representation*. The principles of archaeozoological methodology for the analysis of differential skeletal survivorship (Lyman, 1994: 223–293) have been adopted in physical anthropology in a similar effort to distinguish between *intrinsic* (i.e. related to anatomical structure, size, and bone density) and *extrinsic* (i.e. taphonomic, natural or cultural) factors influencing preservation in human bone deposits (e.g., Willey et al., 1997; Knüsel and Outram, 2004; Bello and Andrews, 2006). Despite these advances, 'preservation' in most bioarchaeological studies remains imprecise, used to imply interchangeably bone quantity, fragmentation, surface condition, and/or skeletal part representation. In this study, the main different aspects of preservation were separately quantified to ensure precise description of the bone assemblages and to enable comparative observations. The following aspects of preservation were recorded and quantified: (i) *bone representation*, (ii) *completeness*, and (iii) *surface preservation*.

   i) *Bone representation* expresses the frequency of each skeletal element in a sample; following the Bone Representation Index (BRI) of Bello and Andrews (2006), it is defined as 100 x Σ (Number of observed bones/Theoretical total Number of bones, according to the MNI of the sample). This method was selected because it allows the standardised quantification of bone frequencies to the chosen level of precision (as BRI values can be calculated either for each bone or for a group of bones as a unit; for specific criteria, see Moutafi, 2015: 113–114, forthcoming), and easy comparisons through graphical representation between sub-samples of different size and composition.

   ii) *Bone completeness* addresses the preserved quantity of osseous material (N.B. not to be confused with *fragmentation*; the latter is not included in this presentation, cf. Moutafi, 2015: 115). For this study, bone completeness was first calculated as the preserved percentage of each bone (divided in distinct zones). Based on those, a modal value of bone completeness is given to each skeletal assemblage to enable their cross-examination. If completeness of different skeletal elements within an assemblage varies significantly, the variation is reported (for recording details, Moutafi, 2015: 114–115).

   iii) *Bone surface preservation* expresses the modal stage of weathering for each skeletal assemblage; if significant differences are observed within the same assemblage, the variation is reported. Weathering grades followed Brickley and McKinley (2004: 16).

   For each preservation aspect, skeletal assemblages were classified into four classes (from good to poor) in order to enable direct comparisons (Table 1, after Moutafi, 2015: 115–116, 458; forthcoming). The classification system included both precise and broader categories in order not to mask diverse intra-assemblage preservation, which is of high interpretive value.

d) *Qualitative comparison of observed patterns to intrinsic patterns of bone preservation*. The comparison was used to finally determine the taphonomic character of each assemblage, distinguishing between natural and cultural formation processes. The intrinsic patterns have been established by studies on bone mineral density (e.g., Willey et al., 1997) and BRI analysis of documented collections of complete skeletons affected by minimal or no cultural disturbance (Bello et al., 2006; Bello and Andrews, 2006). When the observed patterns differ considerably from intrinsic preservation patterns, a cultural cause of the disturbance can be inferred.

e) *Examination of anatomical articulations and spatial bone relationships*. These are key elements in identifying the exact character of the

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Table 1
Classification of preservation levels (Bone representation, Completeness, Surface Condition) in both precise and broader categories (after Moutafi, 2015, forthcoming). Key: *BRI*: Bone Representation Index.

	Precise categories			Broader categories	
	Representation	Completeness	Surface condition (weathering grade)	Description of preservation	Aggregated precise classes
Class 1	BRI > 50	>75%	1–2	Good (well & fairly well preserved)	1 and 2, or 1 to 2
Class 2	40–50	50–75%	3- to 3	Good/moderate (fairly well and moderately preserved, when no clear prevalence of one or the other in the assemblage	2 to 3, or diverse 1–3
Class 3	30–40	25–50%	3+ to 4	Moderate	Prevalence of 3
Class 4	<30	<25%	>4	Moderate/poor (any assemblage including significant amount of poorly preserved elements)	3 to 4, or 4

burial deposit, the sequence and timing of different episodes in skeletal deposition, as well as specific depositional choices indicative of the type of secondary interference, intentionality, and even motivation (Roksandic, 2002; Andrews and Bello, 2006; Duday, 2006, 2009).

f) *Assignment of the bone assemblages in well-defined types of disposal and inference of specific secondary acts.* Since 'secondary treatment' is a rather vague, all-inclusive term which encompasses various ways of interference with past interments, the use of specific criteria and unambiguous terminology is essential for the successful interpretation of the mortuary assemblages. The type of disposal and specific secondary funerary acts can be precisely inferred based on contextual consideration of preservation patterns with stratigraphic evidence across a set of specific criteria as employed in this study (analytically described in Moutafi, 2015: 117–121, Tables 5.8–5.10; forthcoming). A summary of the relevant terminology and criteria used here is given in Table 2.

4. Material and analysis

The North Cemetery is the extramural cemetery of the Ayios Vasilios settlement (Voutsaki, forthcoming; Voutsaki et al., in press), which developed into the palatial centre of Laconia in the later Mycenaean period. The North Cemetery is located close (at a distance of ca. 50 m) to the contemporary settlement (in which two intramural burials have also been found). The cemetery consists of a dense cluster of graves found at different depths (Fig. 1). The excavation revealed 25 burial contexts, comprising 20 graves and 5 concentrations of assembled bones outside of graves (Table 3). The cemetery has an organised lay-out: graves are oriented along two axes (roughly N to S or E to W), and are sometimes divided by wall segments. Cist-graves predominate (12/25), with one to 7 inhumations. Seven (simple or stone-lined) pits have been found: four were small and contained only neonates and infants (below the age of three), while the other three were used for adults. Finally, one larger built tomb (Grave 21) has also been found, which contained at least 25 individuals. The graves contained single or multiple inhumations, with a mixture of primary and secondary burials. Most burials were unfurnished, and the few offerings deposited with the dead were very modest; they usually consisted of one or two small vases, usually a drinking cup and a small jar. The ceramic offerings allow us to relatively date the graves to the transition from the Middle to the Late Bronze Age, i.e. the ceramic phases Middle Helladic III – Late Helladic I / Late Helladic II (ca. 1700–1500 BCE.).

Table 2
Types of disposal and specific secondary acts: criteria of definition, as applied in this study.

	Type of disposal	Criteria of definition
No secondary treatment	Primary burial	Articulated skeleton, intact or minimally disturbed by natural taphonomic causes
Secondary treatment	Disturbed primary burial	Partially articulated skeleton in original position; disturbance attributed to human interference
	Single or commingled secondary deposits/burials	Fully or partially disarticulated skeleton(s) transferred in secondary location within or outside the original grave. '*Burial*' used if intentional deposition is confirmed.
	Specific act	**Criteria of definition**
Specific type of secondary activities	Bone removal from the tomb	Bone representation index inconsistent with intrinsic patterns of bone preservation, while otherwise preservation is good enough to exclude natural factors as the single cause of bone absence
	Bone selection (for clustering, retention, or removal)	Patterned presence/absence of certain bones, indicated by inconsistent bone representation, not attributed to natural taphonomic loss
	Retention of fairly complete skeletons in commingled assemblage	Identification of re-assembled skeletons with high BRI values (>50) of prominent skeletal elements, with good representation of smaller elements (even if the latter not individuated)

The sample discussed in this paper comprises 21 contexts for which preliminary bioarchaeological information is available at this stage; the built tomb (21) and the adjacent burial assemblages associated with it (16 and 25), as well as Burial 22, are presently excluded (Table 3). The studied sample is almost equally divided between intact primary burials, which are usually single (except for one double primary burial), and graves containing successive burials. The latter often contain both primary and secondary remains, but some graves contain exclusively non-articulated, commingled skeletal remains (Fig. 2). No secondary treatment is attested in pit graves (with the exception of Grave 24, which contained two infant interments, one primary and one secondary -see below).

The MNI of the examined sample is 49, including 36 adults and 13 sub-adults (five infants, i.e. <3 years, five children, i.e. 3–12 years, and two older adolescents; Table 3). The MNI in each tomb varies between one and 7 (excluding the large built Grave 21, with a MNI over 25). Individuals with sex determinations are equally divided between males (13/26) and females (13/26); the remaining skeletons are preliminarily classified as of indeterminate sex. The majority of the adults have received secondary treatment (22/36), and both sexes are equally represented in both primary and secondary contexts. Only half of the sub-adults, however, are included in secondary assemblages, and they are all children over the age of five, or older adolescents. The only exception is a single secondary infant burial in Grave 24, placed next to the primary interment of another infant. In contrast, all single sub-adult primary burials were infants (often neonates), while the only primary burial of an older child (6–7 years) was found together with the single secondary burial of an adult male (Grave 3).

Secondary treatment in Ayios Vasilios comes in many forms, including a variety of, often quite different, acts: complete or partial disarticulation, selective or random bone removal and/or retention, limited or extensive relocation inside or outside the grave, commingling or not, small or large scale tomb re-use. The taphonomic analysis must first discriminate between natural and cultural causes of the observed state of

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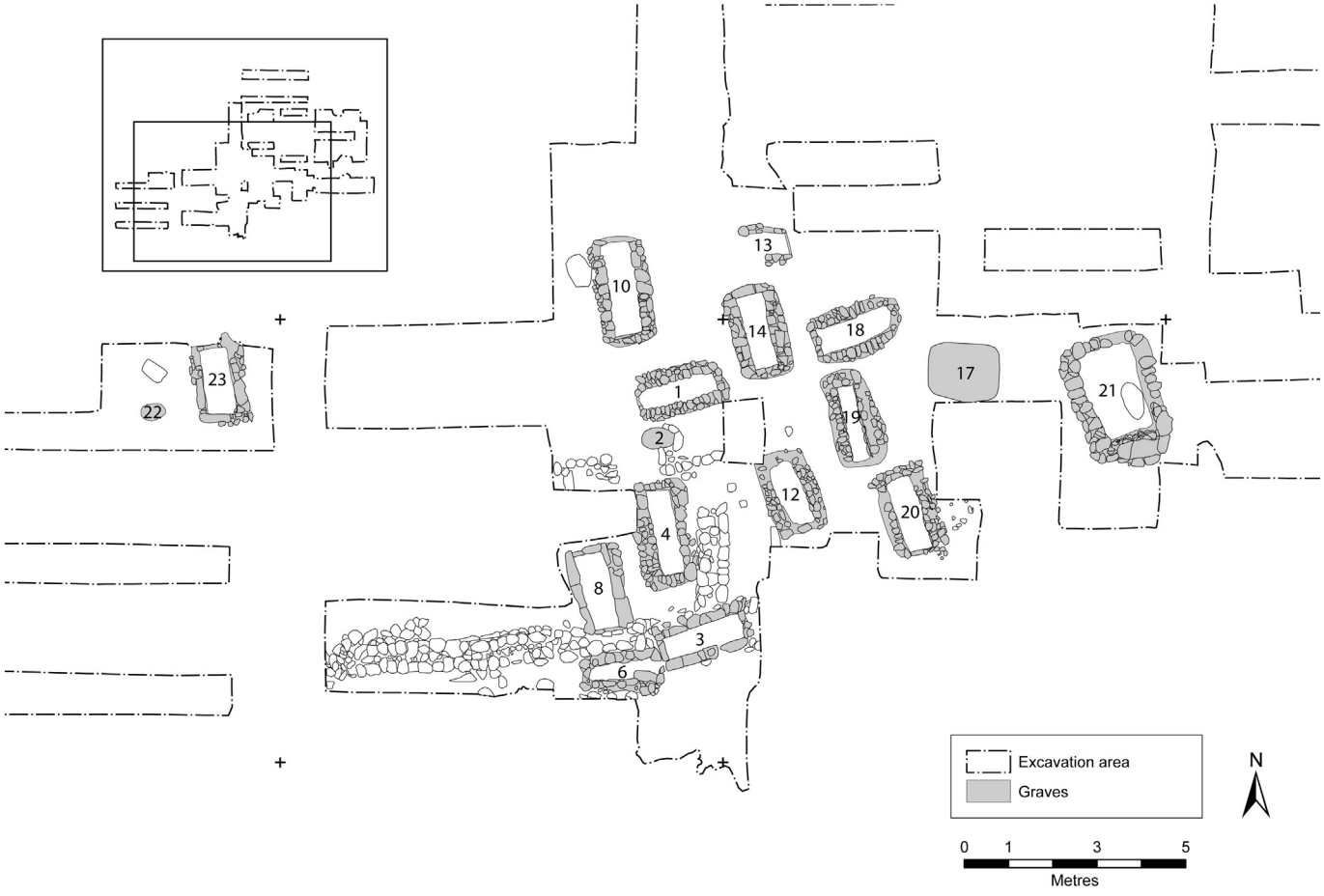

Fig. 1. Site plan of the North Cemetery of Ayios Vasilios, Sparta, southern Greece.

Table 3
List of funerary contexts in the North Cemetery at Ayios Vasilios, including information on type of grave, basic funerary treatment, MNI, sex and age. (N.B. Preliminary data). In grey, contexts excluded from the sample studied. Key: *M*: male, *M*?: probable male, *F*: female, *F*? probable female, ?: indeterminate as yet, *NA*: non-applicable, *AD*: adult, *INF I*: infant <1 year, *INF II*: infant 1–<3 years, *CH I*: 3–<7 years, *CHII*: 7–<12 years, *ADOL. I*: 12–<14.6 years, *ADOL. II*: 14.6–<18 years.

Context (grave/burial)	Type of grave	Type of funerary treatment/disposal	MNI	Sex	Age
1	CIST	Primary & secondary	3	M, M? F	2 AD, ADOL II
2	PIT	Primary	1	NA	INF I
3	CIST	Primary & secondary	2	NA, M	CH I, AD
4	CIST	Secondary	4	2 M, F?, F	4 AD
5	PIT	Primary	1	NA	CH I
6	CIST	Primary	1	F	AD
7	Assembled bones	Secondary	3	M?, F?, NA	2 AD, CH I
8	CIST	Primary	1	F?	AD
9	PIT	Primary	1	NA	INF I
10	CIST	Secondary	6	2 M, F?, F, 2 NA	4 AD, CH I, CH II
11	PIT	Primary	1	F	AD
12	CIST	Primary	1	F	AD
13	PIT	Primary	1	?	AD
14	CIST	Primary & secondary	7	?	7 AD
15	Assembled bones	Secondary	2	M, NA	AD, CH II
16	Assembled? bones	Secondary	?		
17	PIT	Primary	2	M, F	2 AD
18	CIST	Primary & secondary	4	2M, F, NA	2 AD, ADOL II, INF I
19	CIST	Primary	1	F?	AD
20	CIST	Primary	1	M	AD
21	Built tomb	Primary & secondary	>25		
22	PIT(?) or scattered	Secondary/disturbed primary?	2		
23	CIST	Primary & secondary	4	?	4 AD
24	PIT	Primary & secondary	2	NA	2 INF I
25	Assembled? bones	Secondary	?		

the skeletal assemblage; then, if human interference is confirmed, attempt to assess intentionality and, to some extent, motivation by reconstructing details of specific acts. To illustrate our analytical procedure, we will present the detailed analysis of only two cases, Grave 10 and Burial 7, but all modes of secondary treatment encountered in Ayios Vasilios will be briefly outlined in the end. Table 4 summarises the taphonomic methods used and their major interpretive outcomes to present comprehensively how this analysis rests upon the entire range of taphonomic data.

Grave 10 (Fig. 3) is a large but shallow cist (2.30 × 1.20 × 0.25 m). The grave was found immediately below the soil surface, with its upper course partially destroyed and with no covering slabs; however,

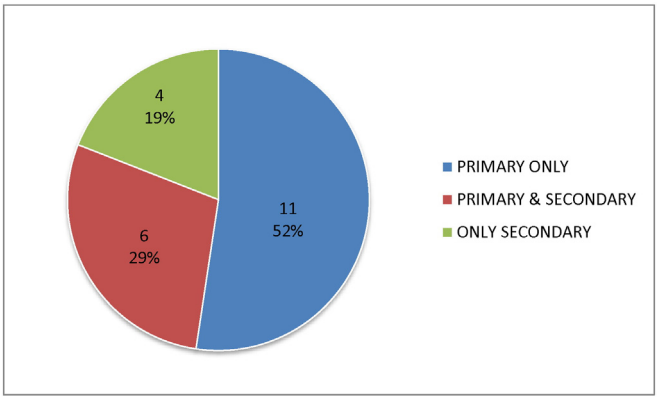

Fig. 2. Frequency of funerary contexts by basic type of funerary treatment/disposal (N = 21; counts and percentages shown).

Table 4
Taphonomic methods used for the detailed analysis of Grave 10 and Burial 7 and respective interpretive outcomes.

	Type of analysis	Basic observations	Major interpretive results
Grave 10	**Segregation / individuation**	Limited pair-matching of adult bones; better individuation of sub-adults	Wide dispersal within the grave, removal of adult lower limbs, almost full retention of sub-adults
	MNI calculation	MNI: 6	The grave's space could not have accommodated simultaneously 6 primary interments: thus, at least a few successive primary and secondary burial episodes should be inferred
	Bone Representation Index (BRI)	Good, except for adult lower limbs and bones prone to natural taphonomic loss	Good representation of small-sized bones implies that the grave was the original burial place for all interments; under-representation of adult lower limbs implies a selective practice of bone removal
	Completeness	Good, but with increased fragmentation	Fragmentation occurred inside the grave
	Surface Preservation	Moderate, fairly homogeneous, root marks	No different taphonomic histories: all skeletons once interred as primary burials in this grave.
	Anatomical articulations / Spatial bone relationships	Disarticulated, randomly dispersed bones, except for skull clustering	Bones re-allocations are random, occurring after complete disarticulation; selective bone arrangements only for adult skulls.
Burial 7	**Segregation / individuation**	Individuation not possible, except for few sub-adult bones	Random compilation of few bones (token?), no concern for retention of individual skeletons
	MNI calculation	MNI: 3	In combination with very limited bone quantity: limited bone selection (token?)
	Bone Representation Index (BRI)	Poor	Random bone selection (token?)
	Completeness	Moderate to poor, not many joins	Fragmentation occurred elsewhere, different taphonomic histories
	Surface Preservation	Moderate to poor, variable	Different taphonomic histories, possibly in different graves, prior to final deposition. Weathering not that extreme to account for the absence of other bones.
	Anatomical articulations / Spatial bone relationships	Disarticulated, randomly mixed bones	Bones transferred completely disarticulated from elsewhere

Fig. 3. Grave 10, bottom layer (view from the west). Mid-excavation layer, with clustering of crania with associated mandibles in the central pile of bones.

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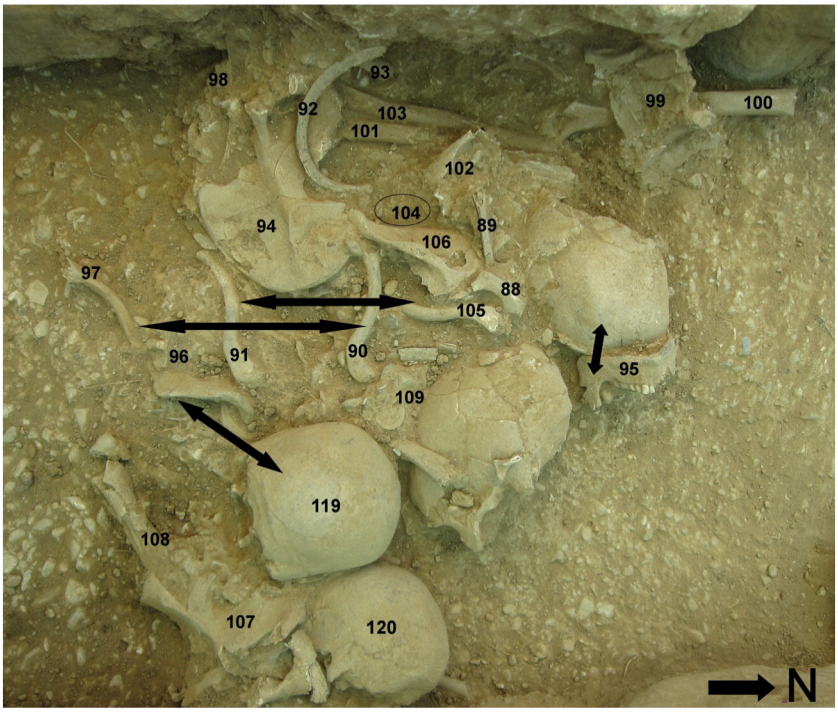

Fig. 4. Grave 10, central pile of disarticulated secondary remains, with bones shown tagged on excavation photo. Detail of in situ associations of re-individuated elements: clavicles located randomly far apart, but crania placed in close proximity to associated mandibles.

no modern disturbance was attested inside the cist. The grave contained a large quantity of commingled, disarticulated human remains (1230 bone fragments and 119 teeth), attesting to a MNI of 6 individuals: four adults (two males, two females), and two children, aged around six and eight years. All burials were unfurnished. Bones were found dispersed in a few clusters, with their majority, completely disarticulated and randomly mixed, collected in a central pile (Fig. 3). Even though several bone pairs were individuated in the lab, these were not located in close proximity to one another within the grave, which implies that no attempt was made for clustered retention of matching elements. The only exception was noticed in the clustering of skulls in the central pile, with each cranium placed in close proximity with its associated mandible (Fig. 4).

Bone surface preservation was moderate (precise classes: 2–3) and fairly homogeneous, showing evidence of root disturbance. Skeletal preservation was good in terms of completeness (precise classes 1–2), even though most bones had suffered significant post-mortem fragmentation and were often reconstructed from several conjoined fragments. The high levels of in situ fragmentation were attributed to increased root activity and the indirect effects of ploughing and trampling through the weight of superimposed soil; this type of natural damage was enhanced due to the shallowness of the grave and the absence (probably removal) of its cover slabs. Since the preservation patterns do not show discrepancies that could indicate diverging taphonomic histories *prior* to deposition in this grave, it is inferred

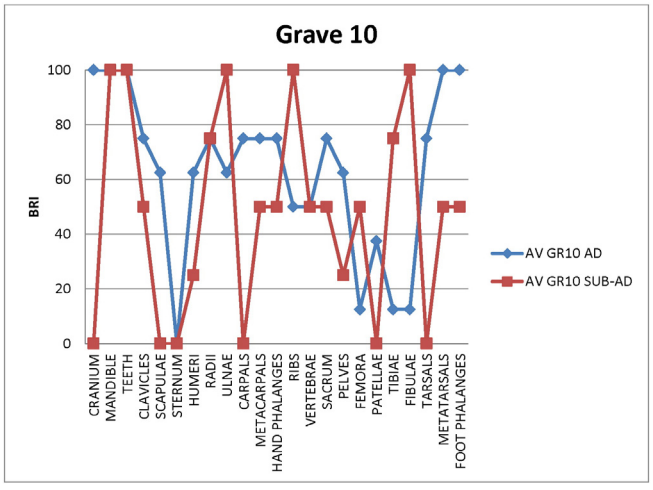

Fig. 5. Grave 10: Bone Representation Index (BRI) by age group. Key: *AV GR10*: Grave 10, *AD*: adult sample, *SUB-AD*: sub-adult sample. In contrast to the good representation of most skeletal elements, representation of adult lower limb bones is markedly poor, implying their selective removal. This is not attested in the sub-adult remains, whose BRI is consistent with natural taphonomic loss and accidental disturbance.

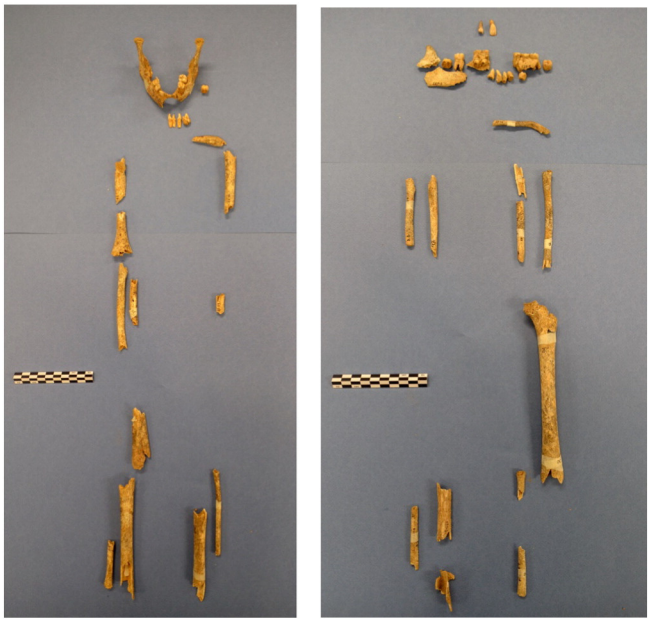

Fig. 6. Grave 10: Re-associated remains of the two sub-adult skeletons.

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Fig. 7. Burial 7: total quantity of post-cranial skeletal remains (MNI: 3).

that all skeletal remains belonged to bodies initially interred here as primary burials. Since the cist is not large enough to accommodate six intact skeletons simultaneously, at least a few successive episodes of primary interments and of subsequent acts of disarticulation and relocation inside the grave must be inferred.

Bone representation patterns confirm that Grave 10 was the original burial place for these skeletons and not an 'ossuary' which received secondary remains from elsewhere, even though no articulation was attested (cf. 'reductions of the corps': Duday, 2006; Knüsel, 2014: 44). Bone representation was good (class 1) for most elements, including small-sized bones (Fig. 5); the absence of sterna and patellae is consistent with natural taphonomic loss (cf. Willey et al., 1997; Bello et al., 2006; Bello and Andrews, 2006). The good representation of both very small bones, such as hand and foot phalanges, and very fragile ones, such as ribs, confirms that decomposition took place inside this structure. Taphonomic studies have shown that it is highly unlikely for such small elements to be largely included in a secondary burial deposit away from the original grave (Andrews and Bello, 2006; cf. Moutafi, 2016). In contrast to the good representation of most elements, adult lower limb bones are poorly represented (class 4). The marked under-

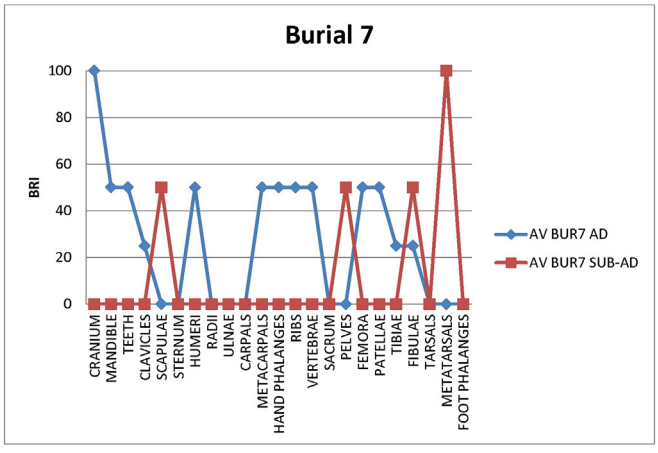

Fig. 8. Burial 7: Bone Representation Index (BRI) by age group. Key: *AV BUR7*: Burial 7, *AD*: adult sample, *SUB-AD*: sub-adult sample. Bone representation is poor for most skeletal elements of both adults and sub-adults, indicating a practice of random, non-selective, compilation of very few bones from each individual in this assemblage.

representation of dense elements, such as femora, tibiae and fibulae, in an otherwise well-preserved assemblage cannot be attributed to natural decay and strongly suggests a practice of selective removal of these bones. This practice, however, was not attested in the sub-adult remains. Sub-adult skeletons were only missing the most fragile elements (cranial fragments, sterna, scapulae, patellae and carpal bones), which is consistent with greater intrinsic bias in sub-adult bone preservation (Bello et al., 2006). The re-individuation process also confirmed these results: adult bone pairs were found only in upper limbs and clavicles, while sub-adult skeletons were more complete (Fig. 6).

Burial 7 represents a different type of secondary deposit. A limited quantity of assembled bones (94 fragments and two teeth), accompanied by two Late Helladic (LH) I-II vessels (a small ring-handled jar and a *kantharos*), was placed in a small heap (c. $0.54 \times 0.30 \times 0.10$ m) over one of the slabs covering Grave 8. Grave 8 was a large, well-built cist, containing the intact single burial of an adult, probably female, and two LH I-II vessels (*askos* and *kantharos*). Despite the low bone quantity, the MNI of Burial 7 is three, including very partial remains from at least two adults (one male, one female) and a 5–6 year-old child (Fig. 7). Bone preservation is moderate to poor in terms of completeness (precise classes: 3–4) and surface condition (precise classes: 2–4). The latter is very diverse, suggesting different taphonomic histories prior to the final deposition of the bones. Since the analysis of Grave 8 did not indicate the existence of earlier burials within it, it can be suggested that the secondary remains of Burial 7 originated from other graves of the cemetery. Bone representation is poor (except for the two adult crania), with the majority of skeletal elements being completely absent or poorly represented (class 4; Fig. 8). Except for the female cranium and mandible that probably match, as well as the sub-adult remains, bone preservation did not allow any further individuation. In conclusion, the bones appear to represent a random, non-selective, compilation of very few bones from each individual, perhaps in the form of a 'token', indicating no concern for the retention of fairly complete skeletons or specific bones.

The two contexts (Grave 10 and Burial 7) share some basic similarities: a) they were both shown to represent the outcome of intentional human activities which cannot be attributed solely to practical considerations (in terms of their final formation: secondary bone arrangements with no intact primary burial in Grave 10; spatial re-allocation in Burial 7); b) they displayed extensive commingling and no retention of fairly complete skeletons (except for the children in Grave 10); and

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c) in both, bone removal took place, albeit in different degrees. At the same time, the two contexts differ in many aspects. Body fragmentation is much more pronounced in the case of Burial 7, where each skeleton is minimally represented. In Grave 10, the secondary bone dispersal was restricted to within the original grave, with the exception of certain adult bones. On the contrary, the remains of Burial 7 probably originated from different graves; their cumulative re-allocation here can be viewed as part of an enchainment process, creating (or maintaining) links and re-defining social relationships between these three individuals and Grave 8 (cf. Chapman, 2000: 6–7).

A rich diversity in secondary treatment is also observed in the other graves with commingled remains. In the group with both primary and secondary remains, the treatment varies from limited removal within the grave of a single earlier interment for the deposition of the succeeding one ('reduction', seen in Graves 1, 3, 24) to complex sequences of successive burials that involved the secondary removal of more than one individual in diverse ways (Graves 14, 18, 23). In the latter cases, the disarticulated remains were retained commingled inside the grave, in different degrees of completeness: while some skeletons were retained fairly complete, others were missing several skeletal parts that had probably been removed to some -unknown to us- place outside the grave. The group with exclusively secondary remains is even more variable, including graves with both semi-articulated disturbed primary burials and commingled secondary remains (Grave 4), graves with exclusively disarticulated, commingled, displaced bones (Grave 10), and assembled commingled bones, usually found above another grave (Burials 7 and 15).

5. Discussion and conclusions

The taphonomy-oriented bioarchaeological methodology enabled us to reconstruct bone manipulation in detail and clearly revealed the complexity of funerary treatment in Ayios Vasilios. Let us now draw together our observations and attempt to understand the diversity of practices attested on this site in the transitional Early Mycenaean period.

5.1. The diverse forms of secondary treatment

The funerary assemblages in the North Cemetery at Ayios Vasilios are almost equally divided between the 'traditional' form of single primary burials and more 'innovative' types of disposal, characterized by different extent and forms of secondary treatment. All commingled assemblages were shown to represent the outcome of intentional human activities, and not of natural taphonomic disturbance. More importantly, our observations suggest that these activities were probably part of the sequence of funerary rites, performed out of choice rather than simple necessity. We have found evidence of bone clustering, of selective removal and relocation, and manipulation of earlier remains irrespective of another interment entering the grave (i.e. lack of in situ intact burial).

The secondary treatment of the body in Ayios Vasilios is characterized by considerable diversity in frequency and form. The MNI of each assemblage and the number of funerary episodes in each locus vary considerably. So does the attitude towards the decomposed body, with bodily fragmentation ranging from very limited dispersal and commingling (e.g., single secondary burials or fairly complete skeletons retained in mixed assemblages) to extensive commingling inside or even outside the original grave. The mode of associations enabled by the manipulation of the fragmented bones seem also to differ: while secondary treatment often remains contained within the original funerary locus, in at least one case (Burial 7) human remains must have circulated around the cemetery, forming new associations with other graves. Finally, the confirmation of selective bone removal from a grave (at least in Grave 10) suggests the possibility of further associations with other loci which may yet be found in another, as yet unexcavated, context.

5.2. Age and sex differentiation in funerary treatment

Both sexes are included in primary and secondary contexts in equal proportions. This suggests no differentiation in funerary treatment between them, unlike the observed male predominance in contemporary elite precincts (Voutsaki, 2004, 2010a). Age-based differentiation is, however, attested between adults and sub-adults. This is observed both in the low representation of sub-adults (% adult:sub-adult frequency, 74:26), but also in the correlation between age and grave type, and the exclusion of infants and very young children (<5 years) from commingled secondary assemblages. Infants were only encountered as intact primary interments in small pits, with the exception of a single secondary infant burial in Grave 24 (noticeably retained with another infant and not an adult), as well as two cases of intramural infant burials in small cists in the nearby settlement. Older children had all received secondary treatment, but evidence for removal from the original grave was only found in one case (Burial 7). As it has been argued elsewhere (Voutsaki, 2004, 2010a), differentiation between age groups appears indeed to become more pronounced in this period.

5.3. Secondary treatment and personhood in Ayios Vasilios

Commingling is often directly associated with dividual personhood (cf. Fowler, 2004), and secondary treatment is simply viewed as the final milestone of funerary rituals, bringing about the dissolution of personal identities to a collective body of 'ancestors'. While this may hold to some extent, it does not explain all aspects of the Mycenaean data: not everyone receives secondary treatment, and not everyone receives the same form of secondary treatment. The fragmentation of the dead body is indeed closely associated with notions of personhood, as the post-mortem manipulation of human bones materialises conceptual links in time and space, reaffirms or re-defines social relations, and plays a central role in the creation and experience of group, including kin identities (Chapman, 2000: 6–7). However, to respect the specificity of our contexts (or to approach real rather than generic shifts in notions of the self), we need to move beyond general perceptions of dividuality. Instead, we need to pay attention to variation and change, to subtle shifts of emphasis and possible tensions between structuring principles of the secondary treatment.

What do the diverse practices in Ayios Vasilios actually tell us? In half of our contexts, the human body is being transformed after death, often repetitively, shifting from living entity to the decomposing body of a still intact skeleton to semi-articulated or fully disarticulated bones which are then manipulated, re-associated, and mixed in new contexts. In this transformation, identities are reformed: the dead may become ancestors, while the living reaffirm, or redefine, their ties to them through this continuous interaction. This is especially clear in cases when bone manipulation was shown to be irrespective of solely practical needs. At the same time, though, we also encounter the other half of the contexts that lack secondary treatment; many persons (mostly, but not exclusively, the younger sub-adults) are either excluded from these practices or made to differ and adhere to traditional choices. And even in the secondary contexts, the extent of the treatment is variable, both in terms of bodily fragmentation and of dispersal, either broader or more restricted. Beyond the persistence of intact burials, a contrast is evident between the cases that express some concern for retention of fairly complete skeletons even in commingled assemblages and those that display greater fragmentation and broader associations (bones removed from the grave, either selectively or randomly). Interestingly, the bone re-assemblages found so far outside the original grave were re-associated with cases of single primary burials. While age divisions were evidently a factor in this diversity, with sub-adults adhering to single modes of burials or undergoing less fragmentation

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even in the commingled assemblages, sex did not appear to play any significant part in these choices.

The variation in practices and co-existence of different forms reveals tensions between tradition and innovation during this transitional period (Voutsaki, forthcoming). As we pointed out in the introduction to this paper, secondary treatment is only one aspect of the wider transformation of the mortuary practices, which includes also the decline of intramural burial and the introduction of multiple burials in graves especially designed for re-use. In the case of Ayios Vasilios, similar tensions are noted in the co-existence of contracted and extended burials, of intramural and extramural graves, of small pits and elaborate, large cists – and of course in the experimentation with new forms such as the built tomb 21. It has been argued elsewhere that all these changes indicate a shift from lineage to descent, from the household to the wider kin group (Voutsaki 2010a, 2010b, 2016; cf. Boyd, 2016). The adoption of secondary treatment in particular can be understood to express in ritual form the transformation of living persons to ancestors, the dissolution of individual identities within a wider kin group, and the redefinition of notions of the self. However, the variety of forms of secondary treatment implies that notions of personhood were fluid, variable and perhaps even contradictory.

In this paper, we made a first attempt to understand shifts in notions of the self by focusing on the synchronic variation of secondary treatment in this transitional period. These first observations will be expanded by means of an integrated analysis of contextual and bioarchaeological data from the North Cemetery at Ayios Vasilios and comparative observations with other sites and regions (Voutsaki, forthcoming). In this way, we will be able to reconstruct the process of transformation and re-definitions of personhood through time, but also varying responses by different individuals, groups, communities and regions. For now, we hope to have successfully shown that the combination of a taphonomy-oriented bioarchaeological methodology, close contextual observations, and an explicit theoretical framework is the best way to approach the complex meanings of commingled funerary contexts in the Aegean and beyond.

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