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Early iron age pottery: a quantitative approach

QUANTIFICATION OF CERAMICS FROM EARLY IRON AGE TOMBS

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Abstract

The paper is concerned with the importance of quantifying ceramic material from tombs and the potential contribution of quantitative analysis to the interpretation of funerary contexts. The first part argues that quantitative approaches ought to be included in all publications of pottery from burial assemblages and outlines the considerations that should be taken into account in quantifying data. The second part discusses a case study from the archaeology of Early Iron Age Crete with the aim to demonstrate that the contribution of quantitative approaches can go beyond the field of ceramic analysis. By quantifying urns from select Cretan tombs I challenge the widespread identification of these contexts as family tombs and pave the way for alternative interpretations.

Keywords: quantification, burial contexts, collective tombs, family tombs, urns, Crete

METHODOLOGICAL CONSIDERATIONS

Quantification has been defined as 'the process of measuring the amounts of pottery of different categories in one or more assemblages' (Orton 1993, 169). The use of quantification has only been acknowledged in the last few decades, during which both the theory and the practicalities of the process have received considerable attention (see mostly: Rice 1987, 288–305; Orton and Tyers 1990; Orton 1993; Orton, Tyers and Vince 1993, 166–181; Arcelin et Tuffreau-Libre 1998). Scholars have typically applied quantitative approaches to ceramic assemblages from settlements and—to a lesser extent—sanctuaries; they have, however, largely left out material from cemeteries without any justification. This bias is noticeable in scholarship on Greece of the Early Iron Age, which applies quantitative approaches to material from primarily domestic contexts and sanctuaries (see mostly: Wells 1983, 125–135; Catling and Lemos 1990, 147–160; Morgan 1999, 152–155, 321–326; Stissi 1999; Eder 2006, 200–203), but only rarely to finds from cemeteries (see below). There are even cases in which fairly recent, major publications, such as the Knossos North Cemetery (Coldstream and Catling 1996), apparently omit any calculation of the overall size of ceramic assemblages in individual tombs or in the entire necropolis.

In principle, quantification is applicable to pottery from cemeteries and the exclusion of such contexts from relevant discussions is—I presume—primarily because ceramics from tombs are regularly fairly complete or even intact. This makes any quantification relatively straightforward and non-laborious and therefore very similar to a mere count which has no real need for methodological tools such as MNI or EVE. Still, the process is extremely useful for a number of reasons, including the fact that very fragmentary pottery is not missing from most excavations of cemeteries and the strata surrounding or overlying the tombs, even if this material normally remains unpublished or attracts limited attention. Furthermore, quantification contributes considerably to modern interpretations of burial sites by systematizing data and thus facilitating their interpretation. The latest publication of the Early Iron Age cemetery at Torone in Chalkidike by John Papadopoulos (2005, 421–424; see Fig. 1) clearly suggests the importance of the approach. My own study of the pottery from chamber tomb A1K1 at Eleutherna in Crete involves similar inquiries (Kotsonas 2008, 299–334; see Fig. 2; for the tomb in general see Stampolidis 2004, 122–124) and smaller scale work of comparable nature has been conducted for material from the cemeteries at Vroulia in Rhodes (Morris 1992, 184–190) and Pithekoussai (Ridgway 1992, 67–77; Luke 2003, 61–64; Nizzo 2007). Despite their qualities, the quantitative essays cited are empirical in that they pay rather limited attention to the theory of quantification. To compensate for this, I have chosen to fashion the first part of my paper as a contribution to the formulation of the largely missing methodological background for quantifying ceramics found in tombs. This part of the paper is primarily concerned with questions on the use of—or significance for—quantifying material from tombs. The second part applies the conclusions drawn in the first part to a case study from the archaeology of Early Iron Age Crete; the aim here is to establish that quantification can shed light on major archaeological questions that extend beyond ceramic analysis. Recurrent is the argument for the inclusion of quantitative analyses in all publications of ceramics from burial assemblages.

The uses to which the quantification of material from tombs is put are basically no different from those of quantification in general. Clive Orton's work has shown that these uses largely involve the formulation of relative chronologies through seriation, the study of the circulation of goods, as well as the analysis of their function and social importance (Orton and Tyers 1990, 81–82; Orton 1993, 174; Orton, Tyers and Vince 1993, 168). The first use does not apply to Greek sites of the Early Iron Age. Studies of Greek burial contexts for this period generally do not make use of seriation, unlike, for example, scholarship on Italian cemeteries of comparable date (Bietti Sestieri 1996, 158–160). In the case of Greek sites, relative chronologies are constructed on the basis of ceramic style and are normally finer than their Italian counterparts. On the other hand, quantitative concerns are regularly introduced in studies on the circulation of Greek ceramics of the given period; however, these con-

cerns are normally not registered in distribution maps that introduce some indication of relative abundance or in charts with fall-off curves.[1] More extensive use of quantification has in the case of the Greek Early Iron Age been made for the understanding of the function of ceramics in burial and their significance for reconstructing social interaction in cemeteries (Morris 1992, 184–190; Ridgway 1992, 67–77; Papadopoulos 2005, 421–424; Kotsonas 2008, 299–334). Unlike earlier works, current scholarship does not tend to treat pottery recovered from tombs as tokens of wealth, or prized possessions of the dead intended for use in the afterlife, but considers them primarily as equipment used during funerals (Papadopoulos 2005, 373–376, 392–393; Dickinson 2006, 177, 195; Kotsonas 2008, 302–304) and emphasises the significance of ceramics and other offerings in conveying the claims and aspirations expressed by the living kin on the social identity (or identities) and status of the deceased (Cavanagh and Mee 1998, 121–135; Crielaard 1999, 62–66; Papadopoulos 2005, 346–354; Dickinson 2006, 177–178. Also, Parker Pearson 1999, 72–94). To achieve a better understanding of the role of ceramics in the burial ritual, the same scholarship does not treat them in isolation, but refers to their relation with other classes of artefacts and also to physical anthropological evidence and to other remains; this wide-ranging approach is of particular relevance to the methodology of quantification (cf. Orton 1993, 176–177).

There are three types of inferences one would potentially like to draw from quantifying the pottery of any assemblage, including burials (Orton 1993, 178–180; Orton, Tyers and Vince 1993, 166–167. Also, Orton and Tyers 1990, 88): A) inferences on the number or amount of vessels in an assemblage, either as a total or by type; B) inferences on the composition of assemblages and the proportions of different types; C) comparisons over the composition of different assemblages. In the case of domestic contexts, Orton and his colleagues concluded that type A and—to an extent—type B inferences can normally not be made because the life-span of ceramics found in such contexts is indeterminate; type C inferences were regarded as possible. Nonetheless, the relevant scholarship did not consider the case of burial assemblages, which are of a different nature and deserve separate treatment.

Leaving some exceptional cases aside (for one such case see below), type A inferences can not be drawn from burial assemblages. The pottery found in or by a tomb can not readily be taken to represent the original amount (or parent assemblage) involved in the funeral ritual held on the spot because of the effect of depositional and post-depositional processes. The potential effect of the first type of processes is eloquently suggested by one of the earliest funerary laws known from Greece; this is a 5th-century BC inscription from Keos which explicitly regulates the removal of the pottery from the area of the tomb after use (Sokolowski 1969, 188, no. 97, line 10. Also, Morris 1992, 107–108). Another case in point is secondary cremation, in which the pottery burned in the funeral pyre does not often accompany the cremated remains to their final resting place, as observed, for example, in the cemetery of Pithekoussai during the 8th century BC (Ridgway 1992, 50–51; Luke 2003, 61). Significantly, the effect of depositional processes may vary over time; the quantitative analysis included in my study of the pottery from a collective tomb at Eleutherna, tomb A1K1, confirmed that a range of vessel shapes was placed in the tomb during the 9th century BC, but thereafter the repertory within the same context was largely limited to urns and urn covers (Kotsonas 2008, 299–334). It is ironic that in cases like tomb A1K1, quantification has to be made to expose its own limitations.

Burial assemblages of the Early Iron Age are also commonly affected by post-depositional processes. To start with, destruction and looting, especially in modern times, are known to have occurred widely and often at a large scale. Post-depositional disturbance was common in antiquity in the case of collective tombs, which were fairly widespread in the Aegean of the period (for their distribution see Mazarakis-Ainian 2000, 158–165, 170–171; Dickinson 2006, 181–183). The repeated use of a tomb for successive interments often caused disorder on previous burials, the mixing of individual complements of goods (Whitley 1986, 278–279; Branigan 1993, 81–95; Wason 1994, 89; Keswani 2004, 24) and potentially the removal of objects from earlier burials (for a discussion of this possibility in the case of Knossian tombs see Kotsonas 2006, 155–156, fn. 22). Long use may have also involved periodic clearances, as, for example, is the case with the circular tombs of Early Bronze Age Crete (Branigan 1993, 88; Dickinson 1994, 218). On these grounds, I would argue that quantification of ceramics from a tomb can generally not answer the question of how much pottery was used in the funeral ritual held at or near the tomb; it is only indicative of how much was deposited (and survived to be excavated). The split between these two amounts may be considerable, depending on the effects of the processes mentioned. In any case, the bearing of those effects should be addressed.

Drawing type B inferences on the composition of assemblages and the representation of various wares, shapes and types can be considerably less complicated in burials than other contexts. This is because the life-span of ceramics found inside a single tomb can normally be confidently estimated and narrowly defined, with all pots having been used only once and for a very short time on the occasion of burial (the possibility of a previous use at a different context is important in several respects, but does not affect estimates of the representation of ceramics in their final resting place). Conversely, the life-span of ceramics from settlements and sanctuaries is often indeterminate; the dating of the material can only show how many pots were disposed of at a certain place over a certain period and cannot shed light on how many pots were in use at a certain point at a certain time (Rice 1987, 296–298; Orton 1993, 178; Orton, Tyers and Vince 1993, 166). These last concerns apply to an extent to the case of collective tombs. In those contexts, concurrent

[1] For tables with indications of abundance and charts with fall-off curves see Orton, Tyers and Vince 1993, 199–206. Distribution maps of early Greek ceramics normally exclude indications of abundance; see, for example, Dickinson 2006, 208, fig. 7.1; 212, fig. 7.4.

use of a group of vases can be securely determined only on the basis of stratigraphy and contextual information, whereas the life-span of pots can not readily be taken to be very short. Re-use of vessels deposited in a collective tomb on the occasion of the re-opening of the tomb for burial is—in theory—possible. This possibility remains, however, highly unlikely because of the well-known fear of ritual pollution that was widespread among the ancient Greeks (Kurtz and Boardman 1971, 149–161; Garland 1985, 41–47). The same possibility is generally discounted by modern scholarship, probably because excavation has not yielded any evidence suggesting re-use of ceramics from tombs (for an exception from a Roman context see Slane and Walbank 2006, 380–381). In short, the life-span of ceramics found in tombs can generally be taken to be fixed; hence quantification can show the degree of popularity of certain ceramic types at a given time-span and offer important insights about burial customs. Such insights ought not to overlook the various depositional and post-depositional processes.

In the light of these considerations, drawing type C inferences from comparisons over the composition of different burial assemblages is also possible; such inferences are, however, particularly meaningful as long as they refer to assemblages from the same cultural context that were formed by fairly similar depositional processes. Pottery from burials is generally better suited for the making of type C inferences than material from other contexts, given that the life-span of ceramics from burials can be closely identified.

To conclude, burials of Early Iron Age Greece are an advantageous context for the application of quantitative approaches. Such approaches can shed light on the composition of burial assemblages, the representation of various types in different assemblages and, in a few cases, on the number of vessels used in the funerary ritual held in or near the tomb. They can also contribute to studies on the distribution of ceramic types, as well as to analyses of the function and role of ceramics in the funerary ritual; hence, quantitative approaches ought to be included in all publications of pottery from tombs. Approaches of this sort, however, necessitate an understanding of sampling biases and depositional processes. Taking this as a starting point I present below a case study from the archaeology of Early Iron Age Crete, which clearly shows the salience of quantification for ceramic analysis and, more broadly, for the study of ancient society.

QUANTIFYING 'POTS AND PEOPLE' IN CRETAN COLLECTIVE TOMBS

The general neglect for quantification of ceramics that pervades publications of burial contexts of the Greek Early Iron Age is also apparent for Crete, one of the best studied areas in the Mediterranean. In my wish to overcome this bias I have applied a quantitative approach to a sum of 400 vessels from a chamber tomb at Eleutherna (Kotsonas 2008, 299–334). The study has demonstrated the importance of such an approach for the understanding of the role of pottery in the funeral ritual and for shedding light on other, core issues of the archaeology of burial. In the present paper, I limit myself to a single issue of Cretan archaeology and make use of quantification of urns from collective tombs to overtly challenge the most widely-held assumption for these contexts, namely, that they all were family tombs.

Collective tombs, mostly rock-cut chambers or stone-built tholoi, dominate the archaeological landscape of Early Iron Age Crete from the 10th to the 7th century BC, outnumber individual burials and have attracted considerable study and publication (see mostly: Brock 1957; Coldstream and Catling 1996; Tsipopoulou 2005). These tombs were used for uneven lengths of time (sometimes reaching up to three or four centuries) and received a variable number of individuals. In most cases, inurned cremation was the preferred burial rite. Urns were typically sizeable storage vessels of diverse types, called pithoi in Knossos (Cavanagh 1996, 659–660. Mazarakis-Ainian 2000, 163–164, 170–171; Snodgrass 2000, 164–170; Coldstream 2003, 48, 99, 276) and jars in Eleutherna (Kotsonas 2008, 100–141; this work explains the problems that pertain to the naming of Cretan storage vessels). The identification of Cretan, including Knossian, collective tombs as family tombs is shared by many specialists on the Early Iron Age (Brock 1957, 41; Boardman 1967, 63; Coldstream, Cavanagh and Musgrave 1981, 163; Whitley 1986, 275–278; Cavanagh 1996, 664, 666; Osborne 1996, 50; Moignard 1998, 80; Coldstream and Huxley 1999, 291; Mazarakis-Ainian 2000, 163, 170; Snodgrass 2000, 141; Coldstream 2003, 48, 99, 276; Matthäus 2005, 297; Tsipopoulou 2005, 542). Nonetheless, these scholars have provided surprisingly little argumentation in support of this association, thus producing what is probably the greatest factoid in the archaeology of Crete of the given period. Alternative suggestions are not absent and have placed emphasis on gender as a decisive criterion for burial in these tombs; the relevant arguments have, however, insufficiently been presented (Sallares 1991, 184–185; Snodgrass 2009, 105) and irresolutely upheld (Whitley 1998, 613; Whitley 2004, 437; Whitley 2009, 283). In response to these arguments, it has been pointed out (Coldstream and Huxley 1999, 291, fn. 9) that individuals of both sexes and different age groups are represented in the Knossian tombs and, most significantly, that a hereditary trait, identified in the bones from three urns in a single tomb, suggests consanguinity (Musgrave 1996, 681). The issue has been considered closed and a very recent thesis on burial customs in Early Iron Age Crete only spares a few lines to basically espouse the 'traditional view' (Eaby 2007, 225, 283).

The idea that a collective tomb is a family tomb is not, however, particular to the archaeology of Early Iron Age Crete. It is typical for the scholarship concerned with collective tombs in other regions of the same period, such as Thessaly (Georganas 2000, 54; Mazarakis-Ainian 2000, 160, 165), or earlier, Bronze Age tombs of diverse types found in several parts of the Aegean (Branigan 1993, 81–82, 94–95. Dickinson 1994, 215–216; Cavanagh and Mee 1998, 78–79, 131). A unified interpretation for diverse

contexts from different chronological periods and geographical regions is, however, in sharp contrast with the evidence from social anthropology. This documents that a range of social groups could practice collective burial, including patrilinear or matrilinear descent groups and the entire village or community (McHugh 1999, 44–45; Keswani 2004, 17), age grades, gender groupings or status categories (McHugh 1999, 19–29, 30–39, 51–61). The identification of a collective tomb as a family tomb has therefore been used by some scholars as an all-embracing and therefore problematic concept of convenience. Behind the concept lies a wider, deeply-rooted urge of western scholarship to identify kin groups in cemeteries, as well as an obsession of anthropology with kinship (Humphreys 1980; Papadopoulos 2005, 351).

Notwithstanding the wider problem of determining the identity of groups buried collectively, I limit myself to the case of Early Iron Age Crete. The emphasis I place on tombs from two sites, Knossos and Eleutherna, is solely due to the current state of research and the quantity and quality of data available for study (this refers to the publication of large bodies of ceramic material recovered from controlled excavations, as well as of the associated physical anthropological data). I maintain, however, that the case of the two sites is instructive for much of Crete, given the cultural homogeneity of the island, and make brief reference to finds from elsewhere.

The argument for the identification of Cretan collective tombs of the given period as family tombs presents several drawbacks. First, it heavily relies on data from Knossos; this is understandable to an extent since comparable information is missing from most—but, significantly, not all—other sites. Second, the above-mentioned Knossian tomb that produced evidence for consanguinity among the burial group need not be representative for all remaining contexts. Further, consanguinity for individuals from the same collective tomb does not necessitate the identification of the burial group with the family but is compatible with other possibilities; one could, for example, speculate that the group in question was formed on the basis of gender, age or status affiliations, in which case any kin ties between group members would have been of secondary importance. In fact, kin ties were clearly not the sole principle governing access to burial in the Knossian tombs; age was also an important factor, as suggested by the heavy underrepresentation of infants and children, which is unlikely to reflect the poor preservation of their bones or their unsuccessful recovery (Musgrave 1996, 680). This suggests that more than one principle determined the making of the Knossian social groups buried collectively, a case which is well-documented in ethnographic literature (Ucko 1969, 268; McHugh 1999, 19–61, particularly 31 and 46; Keswani 2004, 17) and has been taken up in a recent study of Cypriot collective tombs of the Late Bronze Age (Keswani 2004, 107–108). The effect of such principles could have fluctuated through time and the implicit assumption that the identity of the group using a Cretan or other collective tomb remained unchanged throughout the use of the tomb is questionable. On these grounds, I would be sceptical about the identification of the Knossian and other Cretan tombs as family tombs. In the lines that follow, I explain further drawbacks of the 'traditional view' through the quantification of vessels used as urns. My criticism over the principles on which this view is founded should not, however, be taken as an argument against the identification of any collective tomb as a family tomb. The criticism is intended to support the idea that a variety of social groups were interred in Cretan collective tombs rather than completely dismiss the possibility that families were among those groups.

The first aim of my analysis is to demonstrate that the study of Cretan urns presents particular advantages for quantification and allows for the development of Orton's various types of inferences. This aim is in line with an argument of the first part of this paper, which stresses that quantification of ceramics in tombs ought to take into account the processes that shaped the archaeological record.

Because of the role of Cretan urns as containers of cremated human remains, their deposition was largely unaffected by the depositional and post-depositional processes laid out above. Every urn used in the tomb can in general be taken to have been deposited there permanently, provided there is no contradictory evidence. There are cases in which urns are known to have been moved from their original position inside the chamber of a tomb, but there was care in placing them elsewhere, for example in a niche cut in the dromos (see, for example: Brock 1957, 41, 84–86, 101); in no case has the discard of earlier urns been documented and this possibility remains unlikely. However, urns could have been smashed when the tomb was opened for a new burial (see, for example: Coldstream and Catling 1996, 201, 240) and vessels were also damaged by ancient looters (see, for example: Hutchinson and Boardman 1954, 222), who were, however, not particularly interested in removing pottery and preferred metal items. Hence, leaving modern looting aside, the effect of sampling biases is, in the present case, normally limited and the assemblage recovered can be taken to be representative of the parent assemblage of urns originally stored in the tomb. Urns can therefore be used for the formulation of Orton's first type of inferences.

Cretan urns of the Early Iron Age further allow for the formulation of Orton's second and third type of inferences. Each urn was normally used once and therefore has a specific life-span. This general pattern is not necessarily challenged by the discovery of cremated remains of more than one individual in some urns from Knossos and Eleutherna (Musgrave 1996, 681–682; Agelarakis 2005, 30–31, 406). These finds may represent concurrent deposition rather than reuse and anyway they only appear rarely. On these grounds, Cretan urns are considered to be a favourable set of data for quantification; they further present one of those rare cases in archaeology where pots do equal people (on 'pots and people' see: Papadopoulos 1997; Dickinson 2006, 199–20) and can therefore shed much light on the size and identity of the group buried in the Cretan tombs.

On the basis of similar considerations, the number of urns found in the collective tombs of the Knossos North Cemetery has been linked with discussions of demography (Fig. 3) and has been taken to support the identification of the groups using those tombs as families (Cavanagh 1996, 659–664). This identification does not, however, do justice to the complexity of all evidence available and this is particularly clear in the case of the 7th century BC, as explained below.

Figs. 4–9 present some basic quantification of clay urns in five Knossian collective tombs and the single comparable context hitherto excavated at Eleutherna; the Figures register the deposition of such vessels during three or four centuries of the island's Early Iron Age.[2] The tombs were selected on the basis of the evidence they provide for a notable rise in the number of urns deposited in the 7th century BC; comparable patterns can currently not be identified in earlier centuries, but there are individual Knossian tombs which show a high number of urns in particular phases (Cavanagh 1996, 664). On first impression, the five Knossian tombs discussed appear to represent a fraction of the approximately 60 tombs that are known to have been in use at the site for some time in the 7th century BC (for the estimate see Kotsonas 2006, 158, where the relevant references are cited), which is a period of central importance to my argument. Nonetheless, only 50 of those tombs have been published and some of them were damaged or looted to an extent that discourages any assumption on their original content; also, some tombs were only used in the 7th century BC and hence do not allow for a diachronic assessment of patterns of deposition. On this basis, I would estimate that the five contexts discussed represent no less than 15% of the Knossian tombs that are known to have been used in the 7th century BC. The remaining tombs, which are obviously the majority, contained no more than five urns (Cavanagh 1996, 664) dating to the 7th century BC and this number represents no serious departure from the number of urns deposited in the previous century. To avoid unnecessary complications in preparing Figs. 4–9, I have upheld the general identification of urns with pithoi or jars of various sorts and have excluded the rare cases in which vessels other than pithoi/jars were used as urns, since in Bill Cavanagh's (1996, 659) words they do not 'seriously affect the statistics'. References to urns made of other materials (mostly bronze) were also excluded because of their rarity. In all cases I have confirmed that these choices do not affect overall patterns, the significance of which, in any case, lies in relative rather than absolute numbers.

Figs. 4–9 suggest a marked rise in the number of urns deposited in some Cretan tombs during the 7th century BC. This rise seems more pronounced when one takes into account the fact that the Knossian tombs were abandoned before the last quarter of the 7th century BC (the Tekke tholos was abandoned even earlier, before the end of the second quarter of the same century); this make the last phase considerably shorter than the previous ones. The assumption that the 7th century BC urns are more numerous simply because they were not disturbed after the tombs went out of use is not convincing; it is during the early to advanced rather than the late 7th century BC that the number of urns reaches its highest peak in Knossos North Cemetery tomb 107 and Eleutherna tomb A1K1, while in the case of Knossos North Cemetery tomb 285 numbers remain stable from the advanced to the late 7th century BC. The rise seen in Figs. 4–9 is therefore not a mirage produced by some bias, but a notable pattern that deserves attention.

Interpreting this pattern in accordance with the widely-shared identification of the Cretan collective tombs as family tombs involves assuming that the families represented sharply grew in size in the given period. It is wiser, however, to perceive this rise in the number of urns not as a direct reflection of an increase in the actual size of the social groups buried in the tombs, but as a reflection of changes in the identity of those groups and the pattern of admission to burial (cf. Morris 1987, 97–109). In any case, the evidence presented speaks against a single, static conception of the identity of the social groups represented in the Cretan tombs. Figs. 6 and 9, in particular, overtly challenge any all-embracing identification of these contexts and confirm that some tombs could not have accommodated the remains of nuclear families or even steadily growing extended families. The size of the social groups buried in Knossos Fortetsa tomb P and tomb A1K1 at Eleutherna during the 7th century BC far exceeds the size of the groups buried in the vast majority of Cretan tombs of the Early Iron Age. That these two cases are not isolated is confirmed by tomb R at Afrati (Levi 1927–1929, 202–304), a considerable part of the material from which, however, cannot readily be dated with precision. The evidence from the tombs in question therefore lends support to my argument for the identification of diverse social groups in the Cretan collective tombs of the Early Iron Age. Further support is provided by a recent physical anthropology study of the human bones from the Eleuthernian tomb A1K1 (Agelarakis 2005). This study established that burial in that context was largely determined by the age and sex of the deceased, rather than by kinship ties; the tomb was largely reserved for adult males, even if females and children were not entirely absent. This eloquently suggests that future publications of the island's collective tombs should determine whether 'kin and/or kith' were buried in them on the basis of the particular evidence they provide, rather than rely on conclusions drawn from other sites or tombs and/or espouse all-inclusive interpretations. The contribu-

[2] Absolute rather than relative chronology was preferred in Figs. 4–9 for reasons of clarity. The 10th century BC is identified with the Early Protogeometric and to an extent the Middle Protogeometric periods, the 9th century BC with the latest part of the Middle Protogeometric in addition to the Late Protogeometric and Protogeometric B periods, the 8th century BC with the Geometric period and the 7th century BC with the Orientalizing or Protoarchaic period. For the number of urns from the Knossian tombs see: Hutchinson and Boardman 1954 (Tekke tholos); Brock 1957, 82–97, 101–138 (Fortetsa tombs II and P); Coldstream and Catling 1996, 148–159, 239–249 (Knossos North Cemetery tombs 107 and 285). For the data from tomb A1K1 of Eleutherna see Kotsonas 2008, 80–81, 100–141 (also 308–309, graph 4). Disturbance caused by repeated use or ancient looters was not missing entirely from the five Knossian contexts treated here, but the excavation reports suggest that the bias was not great and/or did not apply to the case of clay urns.

tion of physical anthropology in determining the identity of the groups mentioned is undoubtedly invaluable but often remains unavailable for old finds or faces insurmountable vicissitudes because of the poor preservation of the material. Quantification of urns, however, offers important hints in this respect. By overtly challenging the most tenacious assumption on Cretan collective tombs of the Early Iron Age, the approach has paved the way for alternative interpretations on the identity of the social groups buried in those tombs.

SUMMARY AND CONCLUSIONS

The preceding analysis brings to the fore the dearth of quantitative approaches in publications of ceramics from Greek cemeteries and tombs of the Early Iron Age. Although the state of relevant research on material from domestic and sanctuary assemblages of comparable date is not advanced either, the dearth is more acute in the case of burial contexts. This dearth is probably due to the advantageous state of preservation of ceramics from tombs, which makes any quantification of them seem unnecessary to some, but is also indicative of unawareness over the uses of quantification for the archaeology of burial. In response to this state of affairs, the preceding analysis examined the uses of quantitative approaches for the study of material from Greek cemeteries of the Early Iron Age and argued that approaches of this sort should form an integral part of any publication of burial contexts. I further commented on considerations that should be taken into account in quantifying material from tombs and pitfalls that should be avoided. Also, I outlined the inferences that can be drawn by this approach on the composition of burial assemblages, the representation of varied types in different assemblages and the role of ceramics in the funerary ritual.

I further emphasised that quantification allows for the detection of important patterns which might go unnoticed in a conventional pottery analysis. In support of this argument, I discussed a case study from the archaeology of Early Iron Age Crete; by quantifying the urns found in collective tombs of the given period at Knossos and Eleutherna, I challenged the widely shared identification of these contexts as family tombs and hinted at the varied character of the social groups represented in them. This case study demonstrates that the contribution of quantitative approaches transcends the field of ceramic analysis and sheds light on diverse facets of ancient life and, as in our case, death.

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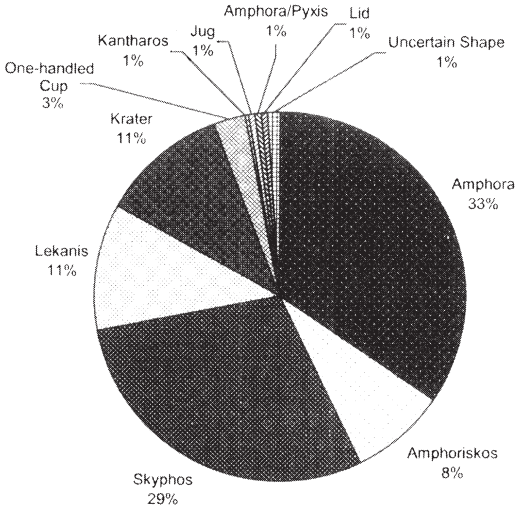
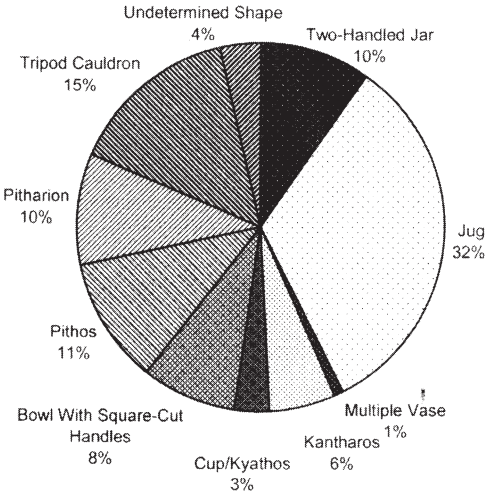
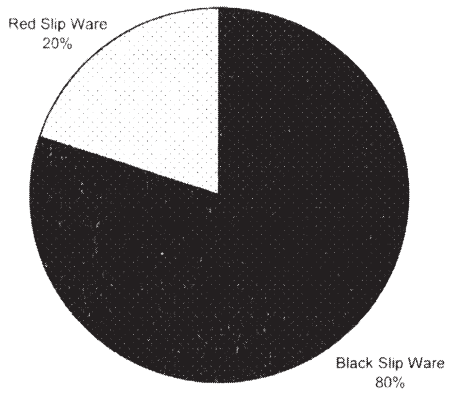


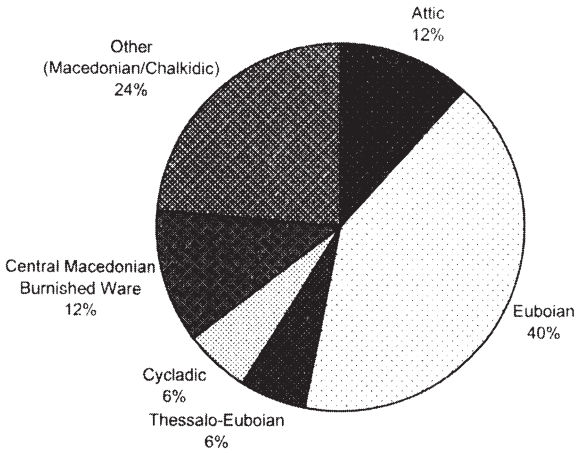
GRAPH 5.2. Local wheelmade pottery.



GRAPH 5.3. Local handmade pottery.

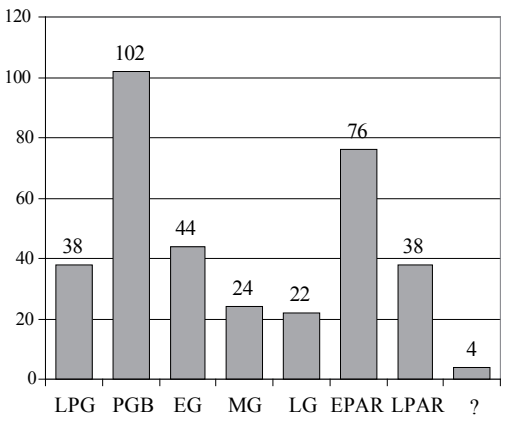


GRAPH 5.4. Black- and red-slip ware.

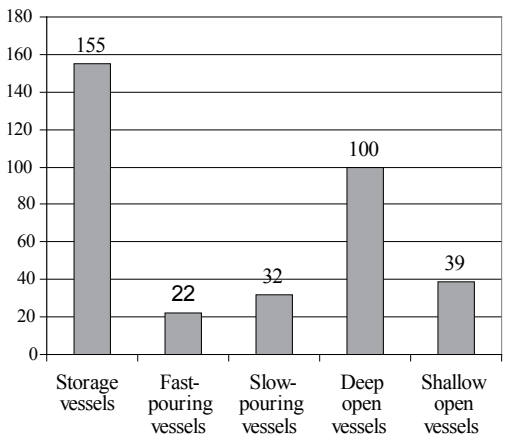


GRAPH 5.5. Imported vessels.

Fig. 1. Quantification of Early Iron Age pottery from the cemetery of Torone (reproduced from Papadopoulos 2005, 422).



Graph 1: Number of local vases per period



Graph 2: Number of local vases per shape category

Fig. 2. Quantification of Early Iron Age pottery from Eleutherna tomb A1K1 (based on Kotsonas 2008, 307).

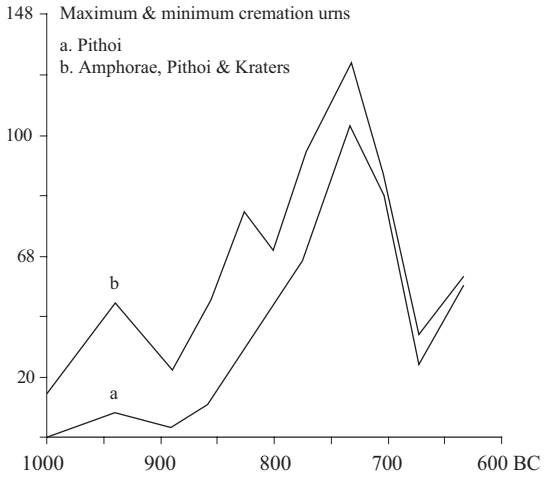


Fig. 3. Maximum and minimum number of clay urns in the Knossos North Cemetery (reproduced from Cavanagh 1996, 661).

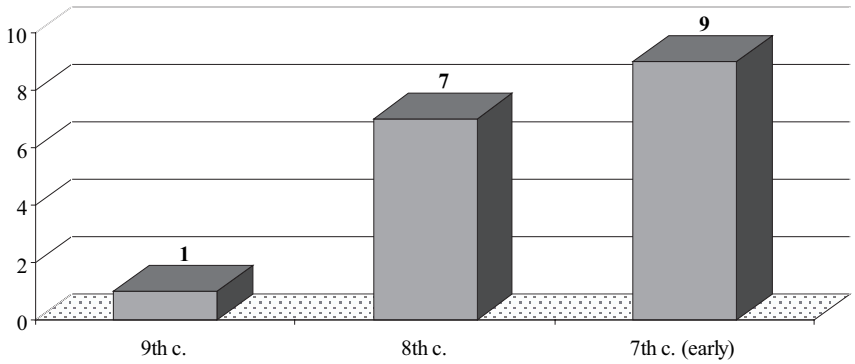


Fig. 4. Number of clay urns in the Knossos Tekke tholos.

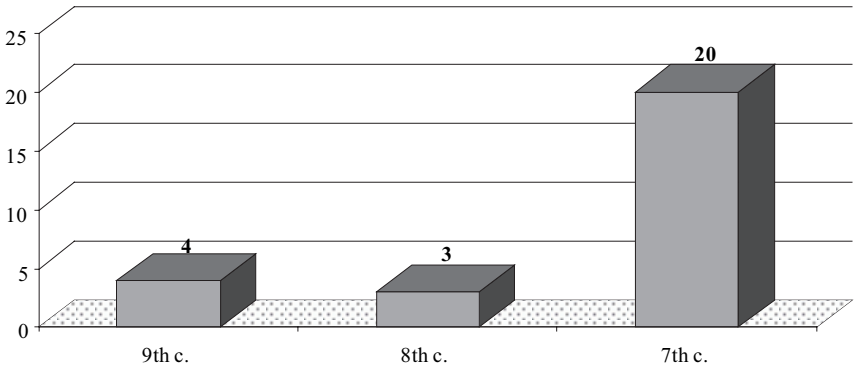


Fig. 5. Number of clay urns in Knossos Fortetsa tomb II.

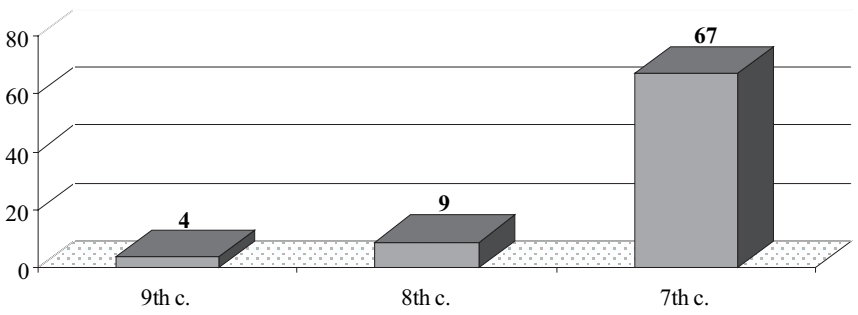


Fig. 6. Number of clay urns in Knossos Fortetsa tomb P.

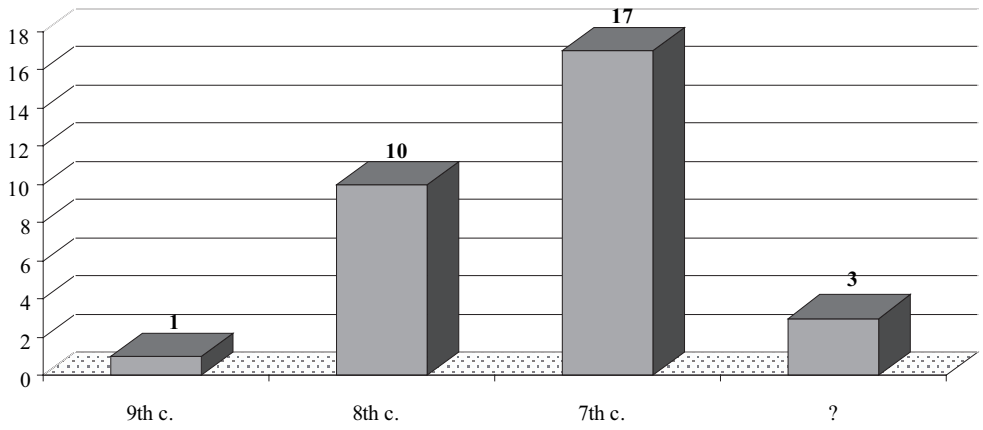


Fig. 7. Number of clay urns in Knossos North Cemetery tomb 107.

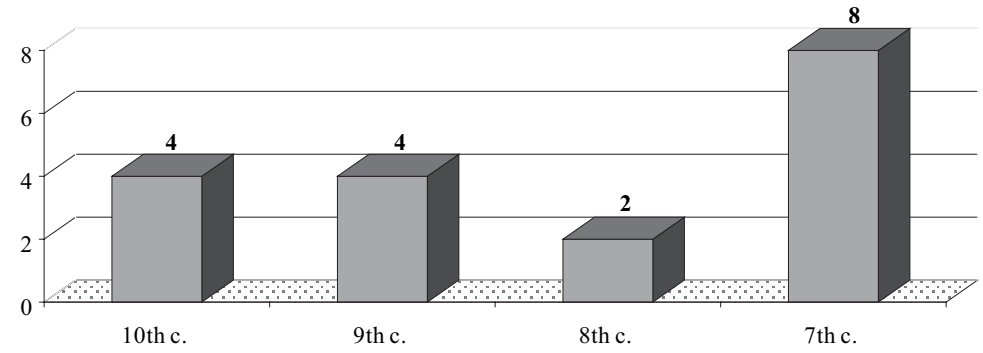


Fig. 8. Number of clay urns in Knossos North Cemetery tomb 285.

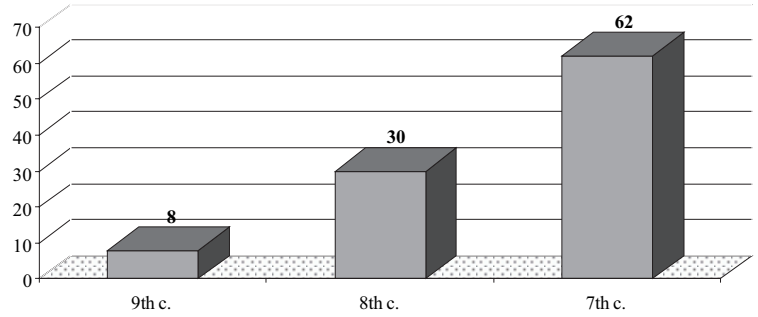


Fig. 9. Number of clay urns in Eleutherna tomb A1K1.