



Perishable, yet perennial: formal and semantic properties of round building architecture in prehistoric Aegean

Evyenia Yiannouli

University of Peloponnese, Department of History,
Archaeology and Cultural Resource Management
24 100 Kalamata, Greece (eyiannou@uop.gr)

Received: 18/10/2005

Accepted: 22/3/2006

Abstract

Round buildings are architecturally distinct, while defying direct assessment of specific, cultural significance. This is partly due to a lack of finer typology regarding morphology, range of use, stratigraphy, settlement context and indeed geographic and chronological correlations. Flimsy structure and very small numbers compared to other architectural types are two additional reasons that might explain an overall apprehension to deal with these constructions as a distinct and peculiar class of evidence.

This paper aims at bringing the Aegean evidence to the fore of archaeological discussion, with regard to its peculiar morphology and contents, stratigraphy and settlement context, chronology, duration and symbolic manifestation. An architectural reconstruction is suggested on account of combined sources, i.e. actual remains, iconography and plastic models. The semantic ramifications of this class of evidence will be explored against its typological and contextual transformations mainly within Minoan Crete. It is suggested that perishable structure is a significant formal property as much as a semantic constituent of form, in the same way that the goddess with upraised arms enthroned in the LMIII hut models indicates an association with the sacred. An interpretative approach of these enthroned figures in particular will also be attempted.

Keywords: round huts, seals, models, perishable structure, aegean, prehistory.

Scope of research

This is the third in a series of papers engaging in a discussion of round building tradition, regarding its peculiar morphology and contents, stratigraphic succession and settlement context, chronology, duration and symbolic manifestation as evidenced in Aegean prehistory. Stratigraphic and chronological observations from settlements in the Aegean and Cyprus suggested, in our view, that this tradition is closely linked to incipient aspects of the Neolithic (cultivation - permanent settlement), requiring an assessment of the non-submerged round building along with bothroi and pit-houses (Yiannouli 2006). Combined architectural, iconographic and scriptural elements relating to the ground level variant in the Aegean further pointed, in our view, to the existence of an elusive type in Minoan architecture, admittedly at odds with typically Minoan and especially palatial remains (Yiannouli forthcoming). In our examination of the Minoan evidence, we analyzed form in terms of general shape and contour of pronounced architectural elements, such as floors, doors, roofs and walls, comparing two distinct sets of data: hut iconography of MMIII-LMI talismanic seals (18 specimens; Onassoglou 1985) and the LMIII-PG clay hut models (18 prehistoric of which 2 doors, 4 historical; Mavriyannaki 1972; Hägg 1990; Mercereau 1993). In this paper, we intend to examine form in the sense of materials and structure, complementing the foregoing analysis of Minoan architecture. The peculiar character of this genre in Aegean prehistory appears to be captured in a tripartite constant, namely analogous form, generally flimsy structure and insignificant numbers. Its persistence, however, in technically more advanced architectural contexts (e.g. MN Sesklo, EHI Eutresis) or during periods of patent architectural sophistication, such as Minoan Crete, portrays even more sharply this contrast, rendering the latter a particularly apposite point of departure.

Architectural analysis of material structure

In our examination of the aforementioned body of seals and models, we contested that the peculiarities

of each example that found no replica in any group and the limited set of regularities along which each seemed to be constructed were two basic characteristics retained in the archaeological material. The features examined emerged as patterned regularities, which were technically exclusive to no particular means, matter or mode of representation, thus impinging on the existence of a building frame that lied beyond each particular set. This frame could be envisaged in the form of a real, concrete and specific construction, or a common and so immediately recognizable building type, whose singularity was echoed in what each iconic and each plastic representation replicated. This state would explain both the homogenous character of either set conforming to the same type as well as the peculiar idiosyncracies of each particular example. In fact, the existence of a not merely abstract building type but a distinct, concrete and constructed building configuration would be clearly as cogent with the available evidence. We shall heretofore elaborate on this dual character of homogenous, yet idiosyncratic rendering of material structure in an effort to construe a more refined discernment regarding the aforementioned bodies of data.

Floors

A clear demarcation between the elevation of the structure and the base on which it rests may be noticed on all instances, but for few sub-Minoan models from Karphi (Mercereau 1993, cat. nos. 13, 16). In 15 out of the 18 seals and in 8 out of the 16 prehistoric models this demarcation is formed by a slight expansion beyond the wall boundaries by way of socle, possibly of stone, on analogy with actual edifices (Yiannouli forthcoming, n. 10). On some clay models where such expansion is not observed, floor differentiation is effected either by painted bands running along the base of the model (Mercereau 1993, cat. nos. 1, 18, 19, 21) or the opening of the threshold (*ibid.*, cat. no. 22) or by multiple, horizontal incisions (*ibid.*, cat. nos. 11, 20). However, the information yielded from seals in particular points to the possible existence of a wooden sort of double deck, often with vertical reinforcement (Fig. 1: 5, 12, KO-5, 14, KO-11; for 1 see dis-

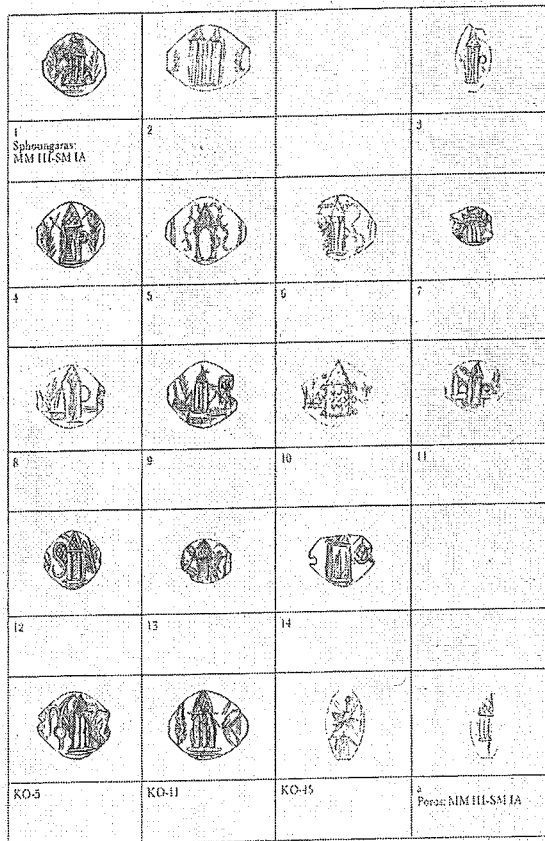


Figure 1. Huts on MMIII-LMI talismanic seals (after Onasoglou 1985, Taf. X).

cussion in Stands and Platforms), in the manner of hut on piles. The inference of a hut on piles is strengthened by analogous depictions in Cretan hieroglyphs (S52) surviving into Linear A and B (Yiannouli forthcoming, fig. 5A,E), while pile models are not unknown in earlier periods in the Aegean (the Melos pyxis), or the Neolithic tradition at large (Marangou 1992, 180). An interesting analogy may be drawn between the inferred wooden double deck (without piles) on seals and the multiple grooving along the base of models (e.g. Mercereau 1993, cat. nos. 11, 20. Fig. 2: 1, 2). The technique of incision, in other words, which is essential for stone engraving but not clay modeling, may have been used in order to echo an analogous type of (wooden?) floor base in these two distinct material sets. This is also suggested on analogy of the multiple grooving observed along the upper wall perimeter of certain models (ibid, cat. nos. 1, 11), where a wooden frame could

be reasonably expected to act as wall juncture with roof (Fig. 2:1). The employment of a stone socle, on the other hand, evidenced in actual edifices (e.g. the FN Phaiastos hut, Vagnetti 1972-3) rather than building reproductions may not be as clearly discerned as the inferred wooden levels. This situation could be explained by reference to the hazards of actual building preservation (wood not preserved) or even the intended effect in the particular building type reproduction (stone not employed or imperative to depict).

Doors

This element, basic in all building, acquires an intriguing form and character in building reproductions. The very practical nature of doors seems to be at odds when shaped outside their commonly experienced realm of use. For one thing, images and models being reproductions rather than the thing in itself may retain features deviating from practical function, such as the employment of un-pierced lugs for a door fastener, along with pierced variants (e.g. Hägg 1990, 96 and cat. no 17). For another, this ubiquitous and most unequivocally present feature appears to set iconic from plastic representations apart. All hut models, in other words, preserve a door opening and/or the door itself, which is freely moveable rather than swinging on hinges or somehow fastened on to a doorjamb. Instead pierced or un-pierced lugs attached in a similar position on the walls at either side of the opening, and occasionally a third one on the door itself, seem to perform this practical task with the aid of a chord or string. At first glance, a most blatant differentiation in the representation of building between models and seals is certainly the absence of any obvious indication for a door, or an opening for that matter, in the body of walls, except for some dubious cases (Fig. 1: 4- 5).

We have argued, however, that a moon-shaped or semi-circular device attached in a similar position on the walls in half of the seals recall the handles on the later models (Yiannouli forthcoming, n. 11). In other words, the icons of buildings on seals seem to signal rather than depict the door itself, by making a shorthand reference by way of handle, whose form, placement and mostly scale find a direct analogue in the

relevant plastic protrusions of the models in the later period. The particular importance of doors as necessary devices for building to exist is highlighted by the choice of this very element as architectural motif in glyptic imagery, especially within the realm of the talismanic group iconography (Schiering 1984).

The shorthand reference to a door among the seals and its detachable version in the models may be partly explained by the different media of materialization. It may additionally indicate a different sort of use and significance of seals and models, where a mere signaling for the existence of doors suffices for the former but obviously not the latter. In either case, the presence of what makes all building permeable and so inhabitable can be traced in both sets of materially and chronologically differentiated evidence, thus associating it with none exclusively.

Conversely, not all features may be thus explained, as they seem to pertain to limitations of technique (in addition, perhaps, to significance and use).

For instance, if both lugs were depicted on the two-dimensional facades of iconic representations on seals, they would be either obscured in the midst of wall construction details or would distort the architectural reality of the depiction, were they to project from either side of the walls. In fact, this sort of preoccupation may have led the engraver to depict the building at an angle rather than frontally, which would perfectly explain the most striking difference between seals and models, i.e. the implied existence of a door or the general refrain from the depiction of doors in the former. In this case, the craftsman's preoccupation would hinge on a very tangible, visual experience, such as that shaped by commonly experienced, tangible, architectural images. The craftsman would furthermore comply with the apparent necessity to depict this type of building emphasizing wall boundary and construction material as of equal, if not greater, significance for his purposes to building permeability itself.

Walls

Although analogies may be drawn in the rendering of buildings regarding wall inclination on seals (vertical, swelling out, slightly concave) and in models

(vertical, swelling out, slightly concave, flaring out, Yiannouli forthcoming, fig. 5-7), a striking difference may be noticed with regard to construction materials and technique. The latter is profusely depicted and similarly retained in the iconography of the talismanic seals only.

Two main wall construction variants are observed in the talismanic examples. Walls may appear compact, in the form of interwoven and apparently perishable matter (Fig. 1: 10) or simply emphasizing its upright arrangement (Fig. 1: KO-45, perhaps 4). The sheer majority of examples, however, are depicted in the manner of distinct, columnar type of elements that carry the roof. Their individual shapes vary less in the same edifice rather than between huts. Although different in thickness and general shape, they are often sturdier in the middle and/or the bottom half (e.g. Fig. 1: 7-9) and sharper towards the top. The possibility further envisaged is that these uprights are arranged in groups of two (Fig. 1: 14) or simply consecutively fastened (Fig. 1: KO-5). Some are depicted smoother (e.g. Fig. 1: 2, 7) than others (e.g. Fig. 1: 4, 11, KO-11) that seem to retain the coarseness of non-worked or natural surfaces. It is the very contour of these uprights that decides on wall inclination type. In a good number of intercolumniations, spaces are filled with horizontally (Fig. 1: 1, 4) or diagonally arranged (Fig. 1: 9, 12, 13, 14, KO-11) short slashes, engraved in the form of finer lattice.

The absence of analogous material depictions on the clay models presents a striking contrast that, in our view, does partly emanate from the qualities that inhere in the particular means and mode of manufacture, pertaining to the realm of texture and color instead. Contrary to the buildings on seals, clay models initially create the impression of low quality, coarse, even clumsily made reproductions but for a singular exception (the Archanes model). At closer inspection, however, one realizes that it is the repetitively combined elements of means and mode of fabrication that result in this homogenous and, therefore, actively construed picture. The coarse appearance of these artifacts seems to be largely due to variations in the employment of a basic, tripartite color/hue scheme, black-

red-white, regarding their constituent parts: gritty inclusions, the clays and the pigments employed. Surface color, on account of clays and/or slips, mainly belongs to the range of pink (Mercereau 1993, cat. nos. 1, 2, 16, 18, 19, 21) and red (*ibid.*, cat. nos. 6, 7, 8, 9, 13, 14, 15, 20), seldom white (*ibid.*, cat. nos. 15, 18). Paint, whenever applied on wall surface or design detail, is red (*ibid.*, cat. nos. 1, 7, 8, 9, 20) or black (*ibid.*, cat. nos. 10, 18, 19, 21, 22). Inclusions, whenever attested, are generally described as angular, but they seem to conform to color combinations patterns: white (*ibid.*, cat. no. 2), quartz/white-black (*ibid.*, cat. nos. 3, 19), black (*ibid.*, cat. nos. 4, 18), black-red (*ibid.*, cat. nos. 1, 15), quartz/white-red-black (*ibid.*, cat. nos. 6, 8) and exceptionally "sparkling flecks" (*ibid.*, cat. no. 13). No particular color combination seems to be tied to a particular provenance regarding grit. The employment of pink clays/slips and black paints are similarly from varying provenances. Red clays and/or pigments, however, seem to be more highly rated in Phaiastos (*ibid.*, cat. nos. 7, 8, 9, 20) and Karphi (*ibid.*, cat. nos. 13, 14, 15).

Consequently, in the case of walls, the presence or absence of particular typological features may or may not emerge as technical limitations resulting from the respective means and material of manufacture. Walls inclination would be an example of the latter alternative. In the same vein, although the exclusive depiction of building construction details in the form of wood or perishable matter on seals only could supposedly (or symbolically) relate to the type of artifact, the raw material itself, the technique, or even the scale of representation, all this is technically confined to none. In an analogous fashion, the systematic occurrence of branches and horns of consecration on seals only does not reflect what is technically impossible on models. This is best exemplified in the painted decoration of the PGB Archanes or the Gortyn models (*ibid.*, cat. nos. 19, 21-22, respectively) as well as in the widely employed forms of painted and incised motifs in the house models of previous periods in the Aegean, the Balkans and Russia (Marangou 1992, 180, 191). Conversely, it is here appropriate to wonder whether the employment of a coarse, gritty fabric cum particular

color code in models, so characteristically conveyed in clay rather than stone work, pertains to matter and technique only or, additionally, to the intended depiction of an actual building type made of clay (and perhaps stone) more than wood and so possible to convey by means of clay modeling than stone engraving. In this case, one should also envisage the possibility that the employment of a wooden frame type of structure existed along with clay (rubble? pisè?) walls as the two basic wall construction techniques. That would also mean that the iconic depiction of buildings on seals might indicate an association of the wooden frame type of building with the talismanic group in particular, as it appears quite impossible to portray the intended clay fabric properties in stone, thus rendering the idea of a progressive, wall construction development from wood to clay during the course of the LB Age a potentially unfruitful course of research. This conclusion is partly based on the foregoing discussion, while further supported by the recovery of 3rd millennium clay hut models in Crete (EMI/IIA Lebena) and the Greek Mainland (Tiryns; Yiannouli forthcoming, fig. 5C-D). The discussion also implies that type of round structure (wooden frame or clay) and means, mode and technique of conveyance (stone engraving, plastic modeling) may not be freely interchangeable but justifiably matched in a culture and context specific sense.

Roofs

In the case of iconography, roof shape is tantamount to general building type. In other words, are the huts on the talismanic seals really round or are they simply facades of gabled rectangular houses? The question is legitimate, particularly because of its bearing in the course of this discussion. And were we to provide an answer solely on the basis of a generalized analysis of the relevant seals, then that would be a probabilistic inference by elimination. In other words the hypothesis of a gabled roof is problematic within Neopalatial data, be it architectural or iconographic, since Minoan roofs of this or earlier periods are reconstructed as "universally" flat rather than gabled or tiled (Graham 1969, 148, 160-1, 239). A conical roof on

the other hand would be a likelier type of roofing for a round building, irrespective of its function, as has already been proposed for EM and MM tholoi (discussion assessed in Pelon 1976, 55-63) or the "koulouras" (Pelon 1980, 225), or, even better, as concretely shaped in the Lebena model (Alexiou and Warren 2004, fig. 32.512) and the hewn Hypogaeum recorded under the south porch of Knossos (Evans 1921, fig. 74). Conversely, rectangular gabled structures abound in the mainland from the Neolithic to the end of the Bronze Age and beyond, but, during both Proto- and Neopalatial times, it is Crete that sets the impetus regarding artistic events on the mainland than the other way round, were we ever to envisage the adoption of an architecturally prevalent, mainland prototype. But it is really a closer examination of the architectural properties of these depictions that bear the decisive evidence regarding their identity as round structures, along with their affinities to the clay models as well as to actual buildings of the same type.

It must be reminded yet again that, although images and models form two homogeneous sets, no two instances from either group are identical. The actual rendering of common features vary in all instances from either set of evidence and differences of scale as well as material of execution should constantly be taken into consideration.

Roofs on both seals and models pose questions analogous to those discussed with regard to walls. For one thing all roofs are simple in shape. Formal analogies are observed to persist despite the different techniques of engraving and plastic modeling, particularly regarding the lateral sides of roof contour that are yielded in a straight or slightly concave or slightly convex sense (Yiannouli, forthcoming).

The roofs on the seals, however, differ from those of the clay models in that the engraver opted for sketching details that the clay modeler generally did not. The former are informing on the texture of roofing material as well, generally consisting of cross-hatching and thus resembling thatch. In the majority of seals, lateral sides do not expand beyond wall perimeter, seldom extending in the form of eaves (Fig. 1: KO-11, KO-45, perhaps 7 and 13). In models, the conical roofs invari-

ably terminate at the circumference of the walls, being attached to their top. Although cross-hatching has not been recorded, horizontally arranged concentric bands, be they painted (Mercereau 1993, cat. nos. 1, 18) or incised (ibid, cat. nos. 11, 15, 20) around the pitch of clay model roofs conceivably portray roof structure according to a coil arrangement of thatch, in a manner analogous to that observed in a single, iconographic instance (Fig. 1: 7). What are identified as concentric wheel marks on the roof of some Phaistos models (Mercereau 1993, cat. nos. 7, 8) may be thus understood to codify an analogous visual reminder, whereby reproduction technique and concrete architecture are reasonably matched on account of their mutual ability to serve culture specific representations.

One thing peculiar to some clay roofs is that they terminate in a sort of flattened disk (ibid, cat. nos. 2, 7, 9) or a flattened peak (ibid, cat. nos. 10, 16; an aperture or "chimney" is to be found on the LM IIIA2 Zakros model 1 and historical models 19, 21, 22). No such analogous device is seen on the engraved examples, although on two occasions (Fig. 1: 5, 9) the sprawling straw ending of the thatch might be depicted, whereas on another (Fig. 1: KO-45), an obscure object is resting upon the peak in question. The arrangement is reminiscent of the condiments sign which, placed in a similar position, forms a ligature in the Linear B 123-4 hut ideogram of the G-series (Chadwick 1973, 50, 224-231), meaning that the device was not of secondary order to be overlooked even within the realm of ideographic, shorthand abstraction.

These affinities, consistently observed in the rendering of minutiae of roofing profiles between chronologically and materially distinct data sets, emerge as patterned similarities. And although remains of thatch roofing are hard to survive, the impression that led scholars to call these structures huts does not seem wholly unwarranted.

Other types of formal consistencies, whereby all instances are analogous but not identical, may also denote the morphological cohesion in the data of either set.

In the prehistoric clay models, roof carination mostly falls within a limited span, ranging between 25-30 degrees: ca 25 (Mercereau 1993, cat. nos. 2, 6,

7, 8, 18), ca 30 (*ibid.*, cat. nos. 3, 9, 14, 15) and exceptionally ca 12 (*ibid.*, cat. no. 10) or 15 (*ibid.*, cat. no. 16) or 20 (*ibid.*, cat. no. 11) or 35 (*ibid.*, cat. no. 12).

Interestingly, regularity in roof carination is also detected on the earlier depictions on seals, whereby all are rendered in sharper angles:

ca 40-50 (Fig. 1: 2left)

ca 50-60 (Fig. 1: 1, 2right, 5, 7, 8, 10, 11, 13, KO-45)

ca 60-70 (Fig. 1: 4, 6, 9, 12, 14, KO-5, a)

ca 70-80 (Fig. 1: 3, KO-11)

We believe that the situation could be explained by the fact that the LM III hut models themselves seem to retain traces pertinent to or filtering the LM III reality in particular. For it is during LM III, the horizon of Mycenaean presence in Crete, that the majority of the hut models have their roofs at an angle of ca 25-30 degrees, systematically contrasting the high pitch on the talismanic seals. Even if the latter is suggested to derive from a purely iconographic idiom, the compliance of the hut models with a lower pitch, such as that generally employed in the gabled roofs of Mycenaean architecture (Iakovidis 1990), could well indicate at least an awareness, if not direct emulation, of the Mycenaean manners prevailing in the period. Once more, that would indicate that formal variation in round building representation, apart from being related to existing architectural forms, is not abstractly typological but distinctly culture specific.

Special features

Semi-subterranean hut models

Certain consistencies observed in the clay hut models may be understood as evidence for the existence of a pit model variant and, accordingly, of concrete, semi-subterranean architecture. In our view, this applies to the two hut models from Phaistos (Mercereau 1993, cat. nos. 8, 10), possibly one from Karphi (*ibid.*, cat. no. 13) and, by analogy to those, another one from Gortyn (*ibid.*, cat. no. 21, Fig. 2: 3, 4, 5).

These consistencies concern the existence of the slanting or flaring out rendering of the lower parts of the walls in the models from Phaistos that retain floor diameter smaller than wall diameter, which reaches

maximum length at the carination between this feature and the upward continuation of the same wall. We believe that this should be co-assessed with an accompanying feature, namely the correspondence of threshold level with carination level (the presumed ground level in real terms) rather than anywhere below or above it. The absence of threshold level in the preserved lower half of the admittedly very fragmentary Karphi model might indicate a similar sort of arrangement. In an analogous fashion, although no slanting walls are observed in the Gortyn model, the very thick dark band that runs along its base, terminating exactly at the level of the preserved threshold, may be indicative of a semi-subterranean construction by way of painted rather than plastic signaling.

This situation points to the existence of at least two types of round buildings, those at ground level and those partly below it, the latter exhibiting two different ways of wall rendering, i.e. slanting or vertically hewn in the earth. Both variants of the semi-subterranean type may be traced in Minoan settlement, although in buildings not strictly defined as houses.

At Archanes the relevant evidence concerns the so-called circular chamber of the LMI Spring House (itself within a palatial edifice?) of the settlement (Sakellarakis 1965, Sakellarakis 1997, 112-5). Evans (1928, 65, fig. 30) succinctly describes the lower 3 as the basin courses of the masonry with "a distinct outward slope", but the 4th, resting on ground level, with "a slight slant inwards". He reconstructed the roof as domed according to the "horizontal" system (courses increasingly tilted up behind by wedges) and measured the diameter of the chamber to ca 5.25m. However, this description implies that the initial outward slanting of walls would make floor diameter smaller than that of the 3rd course, which would be the maximum, compared to the slight inward slant of the 4th course. But the outward slant of the lower parts of the wall at Archanes and the smaller diameter of the base compared to the inferred dome is also attested in the swelling or flaring out type of walls of certain LMIII models, particularly those from Phaistos. Interestingly, the maximum outward slant in the Archanes Chamber is at ground level, echoing a similar state in the

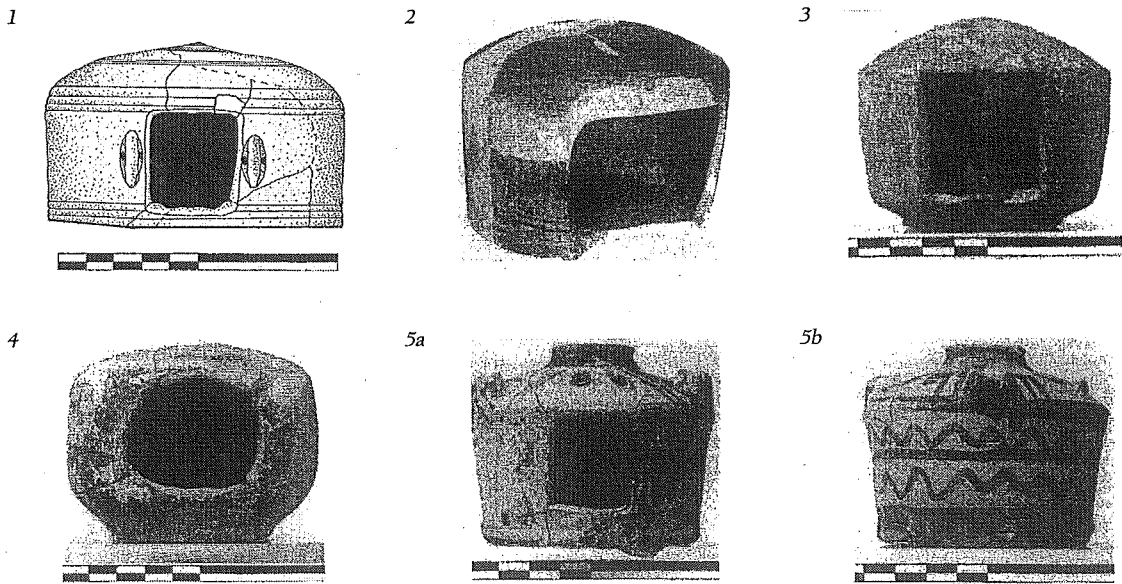


Figure 2. Clay hut models: 1. LMIIIC-Subminoan Karphi 2. MG-LG Phaistos 3. Undated, Phaistos 4. Undated, Phaistos 5. Gortyn (after Mercereau 1993, cat. nos. 11, 20, 8, 10, 21, respectively).

Phaistos models, where the maximum slant of the lower sides corresponds to threshold level. Evidently, the analogy between real architectural features in a rear building type and specific features in plastic models may not be an attribute of static, technical or functional nature, unless we envisage that the Phaistos huts are modeled after partly subterranean structures. This is not an unreasonable conjecture considering that the instability of a restricted lower part compared to the superstructure would be counterbalanced in real architectural terms were we to consider the Phaistos huts as partly basements. To make things more complicated, we should further recall that the section of the Prepalatial Hypogaeum under the south porch of Knossos, as published by Evans (1921, fig. 74), exhibits a similar restriction in base diameter compared to the bulging out contour of the hewn walls, where, similarly, entrance to the dromos of the subterranean chamber is shown at maximum wall diameter level.

Furthermore, in the palatial site of Malia, round building may be traced in the form of circular basin. In Quartier E, House E and room XXXVII Deshayes and Dessenne report on an unusual find (1959, 109-110, pl. XLI 3-4, 6). A submerged circular construc-

tion, reminiscent of the palatial “koulouras” except for the central pillar (diam. 2.50m, depth 0.70-0.75m), was filled almost exclusively with cups, some fragments deriving from miniscule and gritty, undecorated examples, other ones being entirely preserved. The excavators note that the stone built and stucco walls would be unnecessary if that was a refuse pit, while observing that its contents find no parallel in the similar “koulouras” of Malia and Knossos. Moreover, they envisage the possibility that the circular basin could have been originally constructed outside House E, on account of the palatial analogues. Not an unrealistic thought in view of the earlier architectural phases observed below the east wall of room XXXVII, “fondé jusqu’au sol où il repose, dans sa partie Sud, sur un mur antérieur” (ibid, 109). Although the building is Neopalatial, Levi (1976, 352) observes that the handleless cups of pl. XLI 6 could pertain even to Protopalatial times. So, the possibility that this was a circular basin resembling the “koulouras” in structure and position but not content, cannot rule out, on the basis of the published information, its ancestry in relation to House E, nor its use in Neopalatial times within House E, when superstructure would be deemed

unnecessary. In other words, the published archaeological picture cannot rule out the possibility that this was in fact an instance of a semi-subterranean round building within a settlement, of perishable superstructure but of special purport, on account of its content as well as Neopalatial, architectural context, particularly in the case it antedated it. Such a hypothesis would accord well with the exceptional character of House E, being to the palace what the Little Palace is to Knossos according to Pelon, whereby the long stratigraphy of its eastern border includes LMI and LMIII pottery as well as Protopalatial material (Pelon 1970, 1-2) and, in particular, a large quantity of MMI-LMI cups (Gillis 1990, 55-63). The special character of this area is further marked by the star sign engraved in the southern wall of the room (Deshayes et Dessenne 1959, 109), echoing the star and cross engraved on pillar 2 of the "koulouras" as well as on the portable altar in room XVIII1 of the neighbouring, palatial sanctuary (Pelon 1980, 225-6, pl. 157.4). Although this hypothesis can be ultimately confirmed by further work, the Neopalatial association of basin, cups and the sacred, implied by the form and distribution of mason marks in the southwestern part of the palace, seems to portray the sort of picture whose formal attributes at least may set a precedence for the inferred basement hut and cups association in the sanctuary context of the Gortyn models (respectively, Mercereau 1993, cat. nos. 21 and 22).

Again, the employment of round building construction within the palatial sphere of Minoan architecture should not be considered an exclusively Minoan or palatial prerogative. In fact, our survey of the Aegean evidence points to the ancestry of both variants in pit house architecture throughout the Neolithic right from its inception, where both vertical and slanting wall types may be co-temporary in the same settlement, as for example in the case of Aceramic Sesklo (Theocharis 1957, 77-78; 1962, 29).

Stands and Platforms

These features are sparingly employed on few seals only. The existence of an apparently wooden platform fronting the building façade, which is in turn flanked

by similar devices, occurs on two occasions (Fig. 1: 8-9). On analogy to their form, seal no. 1 might be seen as preserving evidence for a façade platform rather than the wooden layers for a piled floor. On seal no. 11 two similar devices side the edifice laterally. Whenever objects, such as plants and horns of consecration, are deposited on these features, they are constantly observed laterally on what are conceivably acting as stands. Apart from the telling significance of plants and horns in Minoan religion, a corroborating property regarding the character of these edifices is implied by the tripartite structure of the layout highlighting the huts as focal points of reference. The buildings occupy the centre of this arrangement and the platforms, be they in the role of lateral stands or frontal platform, reinforce the emphasis on the very centre of the layout. Horns, plants and the tripartite arrangement of structure, with huts as focal referents, leave little doubt as to the cultic or sacral significance that at least some of these edifices seem to be endowed with.

S-shaped attachments and disproportionately sizeable handles

A certain question is raised with regard to the s-shaped attachment discerned on one seal (Fig. 1: 12) as well as a number of vessel-like rather than hut-like handles on few others (Fig. 1: 9, 13, 8?). These features are represented as attributes of disproportionate scale in relation to building size. The hypothesis that can be advanced here is that these icons may not be depictions of real buildings but of real objects or building models instead, probably in the form of vessel, hence their handle-like form.

Although no published information on MMIII-LMI building models has as yet seen the light of print, the existence of hut-like vessels may not be immediately ruled out. On a Protopalatial seal (CMS II2, no. 315d) two objects of apparently the same genre are portrayed: a one-handled cup and what is probably a one-handled hut-like vessel, on account of the latter's smooth, undifferentiated body walls as opposed to the slash effect of its pitched lid, a style customary of thatching on seals. Similarly, the association of the hut and vessel notions is far from foreign to the Neopalatial glyptic

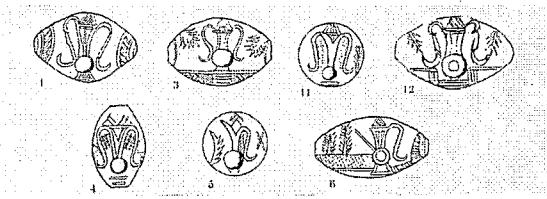


Figure 3. The "ritual vessel" motif on talismanic seals (after Kenna 1960, Pl. 2: 1, 3, 11, 12 and Pl. 3: 4, 5, 6).

scenes. The "ritual vessel" motif is often topped with a lid in the form of thatched roof (Fig. 3), while the extravagant S-shaped handles of these ewers match the hut attachments on some seals (Fig. 1: 12, 13?) or the very vessels that may accompany them (Fig. 1: KO-5). It remains an open question, however, as to whether the "ritual vessel" motif imitates an existing type of Minoan artifact, or, as Kenna (1960, 68) suggested, a change in LMI glyptic style, whereby fragmentation of as yet insufficiently developed forms and depiction of detached parts reach a climax at the end of LMI talismanic iconography.

Context

Context constitutes an additional dimension in the understanding of perishable structure.

Most of these MMIII – LMI seals are without provenience but two come from burials in Sphoungaras and Platanos tholos B, respectively (Onassoglou 1985, 23. Taf.X: 1, 11). The LMIII models derive from settlement deposits, the Knossos LMIIIC Spring Chamber sanctuary, PGB-LG tombs and sanctuary contexts of the Orientalizing period (Mercereau 1993, Table 1). In fact, this variety of contexts capitulates the controversy initiated by the PGB Archanes model, regarding the intended configuration as shrine, house, domestic shrine or tomb (summary in Sakellarakis 1987, 69, Hägg and Marinatos 1991, 301). According to the authors, the unflinching presence of a door together with other minutiae renders the act of viewing (here, the role of actual or visual permeability as opposed to wall boundary) essential in the course of some relevant cult practice (Hägg and Marinatos 1991, 307). It is then conceivable that the burial context of deposition and the horn and spray association on seals, the relation to

water in Knossos and deposits within settlement occupation are all indicative of a broadly "chthonic" semantic area with which these representations are directly engaged by way of context as much as by way of the raw matter of their form. The relation of the data examined to the semantics of "earth" as produce (wood, vegetable matter) or substance (clay, gravel) is direct and overt. Other evidence, such as horns and sprays in association with the hut ideogram, the Linear B condiment ligature and the associated palatial industry, the partly submerged aspect of the structures in Malia and the Archanes Spring Chamber point to the same general semantic field.

It so appears that the perishable structure of architectural representation rises in a sense that is homologous to the vertical (underground) axis of concrete architecture, in that they both eloquently append to the chthonic field of semantics, further reinforced by iconographic associations (horns, sprays, tripartite division, stands/platforms) as much as context (tombs, houses, spring chambers/sanctuaries) and actual contents (gritty, "lowly" cups, water in palatial architecture, the "goddess" in some hut models).

We believe that the course of contextual transformation on Crete succinctly reverberates the course of "Minoanizing" an older Aegean form. This includes at least three major states of archaeological manifestation with components that are not mutually exclusive in the course of time.

1. A distinctive type of vernacular architecture, the round building, is employed within funerary grounds (from the FN hut of Festos to the Lebena model in Prepalatial Crete).
2. The sepulchral cum sacral character of the perishable hut is evidenced in cemeteries (the seals), while the form and its chthonic symbolism are incorporated within palatial architecture and interests (Malia E, the Archanes Spring Chamber, the hut ideogram associations, Linear B industries, finally the Knossos Spring Chamber Sanctuary). It follows that this does not preclude the possibility that round huts may have had a place in (non-palatial) settlements as well.

3. Revert to settlement/sanctuary deposits and funerary grounds as “hut-shrine” during LMIII-PG times. In all cases, building plan and perishable structure remain conservative and so in invert analogy to contextual variation in prehistoric and early historical Crete.

On the semantics of perishable form in round building architecture

Discussion here needs to emanate from a particular feature discerned in certain models only.

It takes the form of protrusion at the centre of the floor of two models from Chania (the raised floor is mentioned by Hägg 1990, 96, fig. 3, see also Mercereau 1993, cat. no 3 LMIIIB?; and Mercereau 1993, cat. no 4, undated) and one from Kastro-Palaikastro (ibid, cat. no. 6, LMIIIB-C). The fixed torso of a female goddess with upraised arms in the Knossos model occupies an analogous, central position (ibid, cat. no. 18, LMIIIC-Subminoan), followed by her seated variant in the Archanes model (ibid, cat. no. 19, PGB).

Since current discussion sets the LMIIIB date of this specific arrangement as a probable post quem, it conveniently compares with two strands of relevant evidence from the Linear B script.

On the one hand, the Linear B 123-4 hut ideograms of the G-series, attested in Knossos, Pylos and Mycenae, are understood in the context of dry measures for condiments, such as cyperus and coriander. In Pylos they form part of the unguent production process, while in Mycenae the coriander sign is combined into a ligature with the hut sign (Chadwick 1973, 50, 224-231). So, in addition to the archaeological material, the inscriptional associations of the hut sign point to the most tangible reality of palatial industry, in which a hut-like entity generally associated with flora is involved, although it is unclear whether it should be understood in the form of hut-like vessels for measuring specific produce, or in the form of actual huts, such as the one inferred for Malia House E, or both. The existence of hut-like vessels as units of measurements would add to the typology of vessels

used as measures in Linear B, but it would also point to one particular reality in the Linear B horizon (palatial industry), apparently distinct from the currently known EM I-IIA (funerary) and LMIII (settlement, sanctuary) contexts.

On the other hand, the Mycenaean reference to *o-pi-e-de-i* in Pylos An 1281, relates to offerings to *po-ti-ni-ja i-qe-ja* “at her shrine”, as is often translated, but literally meaning “at her seat” (Chadwick 1973, 483-4, 565). Scholars agree that the word *e-de-i* is the dative of *ἕδος* (neut.) from *ἕζομαι* < **sed-*, meaning to sit, to place, to be seated, particularly *ἕζομαι* < **ye/o*, in the sense ‘*etre assis plutot que s’assoier*’ (Chantraine 1968, s.v.). Also *ἕδαρος* is now proposed to derive from *ἕδος+ἀπή* (as in *ἐπαπή*, *ἀνέπαρος*), so that *ἕδαρος* (also neutral in *-ος* after *ἕδος*) originally refers to the one “qui touche le siège, l’emplacement, etc.” (Van Windekens 1986, s.v.). But this etymological exposition seems to correspond well to the archaeological picture of the figure who is seated on an almost shapeless protrusion of the ground, a sort of *ἕδος-seat*, and also to the torso fixed to the ground in the typical manner of the goddess with upraised arms, which in turn accords perfectly well with the understanding of *o-pi-e-de-i* as the seat or residence of a goddess in her temple or sanctuary (Jorro et Adrados 1993, s.v. and n.2 with refs). And since the etymological meaning that rests at the bottom of semantic stratigraphy precedes subsequent semantic transformation, we would further argue that the depiction of the seated figure on a slight protrusion that marks the place while being inseparable from it, (in the sense that it would have been if a stool or throne was used instead), corresponds to a purposive intention to portray the elementary relation of inseparability between figure and place as in the relation between *ἕδος+ἕδαρος*.

Similarly, the Knossos torso may be seen as configuration of this very idea, both in form – the torso emanating from the ground-seat by way of confounding the entities of ground and body without any form of intervention whatsoever, and in technique – the torso being affixed to the ground in the manner of inseparable, immovable and permanent attachment to it. And since seated or enthroned figures in Aegean art

are much older than the LMIII-PGB variants, this particular set should also be understood as an intentional resort to the basic semantic stratum of this arrangement. In other words, this state does not in our view suggest that a linear regression occurred from palatial glitter to post-palatial impoverishment. Rather it means to portray the LMIII variant of semantic, iconographic and archaeological reality, arranged specifically as much as intentionally, whereby a female divinity is in the closest possible connection to the ground and the various qualities that emanate from it; (note that the sense of seat-stool-abode/dwelling is further retained in the Homeric period for the Olympian pantheon, while, in even later periods, it is still used as a synonym for seated statue and foundation/base (Liddel and Scott 1996, s.v.).

This idea could in fact explain many of the properties of the archaeological record of the periods that have so far been discussed. Rough making with coarse, gritty clay, lack of serious decoration or sophistication of any kind should be seen as cultural choices in the construction of the LMIII models, whereby unrefined clay would be for models what branches and perishable material would be for actual huts or floral attributes would be for the iconography of huts. It would accord with the coarseness of the columnar elements on seals and the poor stamping qualities that some exhibit, as "perhaps [they] were not intended to be used as such" (Kenna 1960, 45). It would explain the importance, hence palatial interest in structures, such as the basin of Malia House E, its possible ancestry to it, and the Neopalatial incorporation into it. It would explain the MMI - LMI chronology of the cups, which, despite their undecorated and "lowly" appearance in a building comparable to the Little Palace, would nevertheless indicate the "high social standing of the residents" (Gillis 1990, 63). It would explain the choice of the hut motif on the talismanic seals and its association with plants and horns, echoing the sprays and bucrania in the hieroglyphic inscriptions. And of course the choice of the hut model as the sort of vessel appropriate for measuring quantities of earth produce in lists of offerings specified by the analogous ideogram; offerings to a female divinity that in Pylos was served

by the palatial perfume industry. We further believe that this outline should not be understood in the form of contrast between the palatial and the post-palatial worlds. Rather, it seems to figure a state that must have existed within the palatial world, endowed nevertheless with its distinguishing properties, as well as along with it, in order to explain its survival into the post-palatial eras. The Lebena model, the huts on the talismanic seals from Sphoungaras and Platanos and the Archanes model would be an example of this long and parallel state within the realm of funerary custom.

Consequently, the search for an architectural tradition of round building in Minoan Crete can be traced through various strands of evidence with broadly converging semantics, but varying contextual associations and symbolism. The evidence is disparate not simply on account of its perishable and "lowly" character, which we understand as intentional, but also because of its many different contexts of encounter. The pre-palatial round buildings are structures whose form and significance are not fully grasped. But in the 2nd millennium B.C. the hut ideogram points to associations with the sacred in Hieroglyphic and Linear A (bucrania, horns of consecrations, sprays), echoing analogous groupings in the iconography of the talismanic seals (plus stands/platforms, tripartite arrangement). Malia House E basin could be a tangible example of a long-lived such structure filled with handleless cups in the manner of the later Gortyn model, also from a sanctuary complex. The employment of round building morphology in non-domestic palatial edifices (e.g. the Archanes Spring Chamber) adds to the range of transformation in architectural form and contextual meaning. The explicit Linear B reference to offerings at the seat of a female divinity could be seen as an explanatory frame for the particular arrangement of the LMIII clay hut-models, whose chthonic overtones are not only traced in their perishable structure but also in their appropriateness as grave good dedications.

Conclusions

In this paper, we argued that round building representation in Minoan Crete draws from the existence

of actual edifices constructed by perishable matter (wood, clay/rubble) in the form of huts erected on ground level and at times as pile- or partly submerged structures. Roofs are conical and simple in shape, rarely terminating in the form of eaves, while more often topped with some distinguishing feature. Basic roofing material seems to be thatch, but it is conceivable that a coil arrangement of thatching is encountered in clay models (or in LMIII?) more often than on the LMI seals. Walls rise vertically from the ground in a straight, slightly convex or concave manner or, when partly hewn, they are dug in a vertical or in an outward slanting sense. On the seals wall structure mostly appears in the form of regular uprights with traces of interwoven lattice.

The overall shape of the buildings depicted, be they huts of two homogenous sets or single instances in either set or even constituent building parts (roofs, walls, floors, doors), does not generally emerge as a technical limitation resulting from the respective means and material of manufacture. This also applies to numerous features, such as the perimeter of floors that slightly expands beyond wall circumference in both sets, the employment of incision in the course of building/building part representation, presence/absence of eaves, the feature attached to roof pitch, roof carination angle, presence/absence of pile models and perhaps choice of context. Similarly, the need for a door, or for a door opening or for a door-fastening device, although varying in form and relative frequency from set to set, features regularly and irrespective of media of materialization. However, the different raw matters employed (stone for seals, clay/slip/pigment/inclusions for models) are differentially prone to convey intended properties of material structure (clay/rubble wall texture, color pattern, coil type of thatching). Not all kinds of structural material, however, are possible to represent by resorting to a single technique or mode of representation (e.g. wood). Rather, the emergent basic, yet constant property is the coarse semblance regardless of the various particulars or the time intervals and the variety of contexts in question.

Differences in the function of building permeability is implied between seals and models, in that per-

meability, either actual or visual, is imperative to retain and so unfailingly convey in the latter only. It follows that the two main types (wooden frame, clay walls) may correspond to two semantic sub-types regarding location, usage, occupant, visit frequency, life span, etc., conveniently matching with the two different modes and media of reproduction (incised on stone, modeled in clay).

The presence or absence of the majority of the typological features may thus appear irrespective of the media of materialization, while, on certain other occasions, they are meaningfully matched with the technique and the character of the raw materials employed.

We further argued that the perishable structure of huts and the vertical (semi-subterranean) axis of certain, substantial round structures present an homologous relation, concerning the role of "earth" as produce, substance and semantics pertinent to their construction. This point emphasizes the need to extend this type of study into monumental round building morphology in systematic detail. It also stresses the importance to record, report and resort to soil sample analysis in the excavation of round structures.

Our work endorses the views that the hut models in particular constitute a "fairly homogenous group", depicting "most probably huts built of wood, branches, straw and perhaps mud," standing for a LMIII "simple household shrine" (Hägg 1990, 95, 101, 102). However, the "un-Minoan" character with which these models have been occasionally endowed (summary in Hägg 1990, 98-101, Mercereau 1993, 2-4) may be here understood not as foreign to the Minoan custom but as distinctive of the peculiar ways of Minoanizing an architectural form that is not exclusively Cretan.

The persistence of the numerous architectural regularities here examined are best understood as purposive choices after some sort of shared repertory, an exemplar or template of definite and limited formal properties within which one may create analogous but not identical configurations, largely irrespective of the purely technical aspects of means and media of manufacture. Above all, the "rustic" appearance is here understood to emerge as a cultural choice than a failure of technique. We suggested that the semantics of this cultur-

al choice revolve around the notion of "earth" in many and varying manners, including building structure and features, content, context and iconography.

It is the extent to which a general independence from type and technique of reproduction is maintained, not to say from time itself, that provides the typology of the ever persisting "perishable" with semantic significance; patterned configuration and use emerge in relation to a particular building type and also culture and context specific manifestations. In a sense, we are here witnessing the role of differential choices that actively constitute culture specific architectural regularities, while impinging on the existence of a building tradition that lies beyond, while being portrayed within, each particular set.

References

- Alexiou, S. and P. Warren (2004) The Early Minoan tombs of Lebena, southern Crete, *SIMA XXX*, Sävedalen.
- Chadwick, J. (1973) *Documents in Mycenaean Greek*, Cambridge.
- Chantraine, P. (1968) *Dictionnaire étymologique de la langue Grèquue*, Paris.
- Damiani Intelicato, S. (1984) A new kouloura at Phaistos. *American Journal of Archaeology*, vol. 88, 229-230.
- Evans, A. (1921) *The palace of Minos at Knossos*, vol. II, London.
- Evans, A. (1928) *The palace of Minos at Knossos*, vol. III, London.
- Deshayes, J. and Dessenne, A. (1959) *Fouilles exécutées à Malia: Exploration des maisons et quartiers d'habitation II*, 'Études Crétoises XI, Paris.
- Graham, J. (1969) *The palaces of Crete*, Princeton.
- Gillis, C. (1990) *Minoan conical cups. Form, function and significance*, SIMA LXXXIX, Göteborg.
- Hägg, R. (1990) The Cretan hut-models. *Opuscula Atheniensi*, vol. XVIII, No 6, 95-107.
- Hägg, R. and N. Marinatos (1991) The Giamalakis model from Archanes. Between the Minoan and the Greek worlds. In Musti, D. et alii (eds) *La transizione dal Miceneo all'alto arcaismo, Atti del Convegno Internazionale Roma, 14-9 Marzo 1988*, Consiglio Nazionale delle Ricerche, Roma.
- Iakovidis, S. (1990) Mycenaean roofs: form and construction. In P. Darcque and R. Treuil (eds) *L'habitat Egéen préhistorique, B.C.H. Suppl. XIX*, É.F.A., Athènes.
- Jorro, F. and Adrados, F. (1993) *Diccionario Griego-Espanol*, II, Consejo Superior de Investigaciones científicas, Madrid.
- Kenna, V. (1960) *The Cretan talismanic stone in the Late Minoan Age*, S.I.M.A. XXIV, Lund.
- Levi, D. (1976) *Festos e la civiltà minoica I*, Roma.
- Liddel, H. and R. Scott (1996) *A Greek-English Lexicon*, Oxford.
- Marangou, C. (1992) *EIDOLIA. Figurines et miniatures du Néolithique Récent et du Bronze Ancien en Grèce*, B.A.R. International Series 576, Oxford.
- Mavriyannaki, C. (1972) Modellini fittili di costruzioni circolari della Creta minoica. *SMEA* vol. 15, 161-170.
- Mersereau, R. (1993) Cretan cylindrical models. *American Journal of Archaeology*, vol. 97, 1-47.
- Onassoglou, A. (1985) *Die "talismanischen" Siegel (CMS Beiheft 2)*, Berlin.
- Pelon, O. (1970) *Fouilles exécutées à Malia. Exploration de maisons et quartiers d'habitation (1963-1966)*, III, (Études Crétoises XVI) Paris.
- Pelon, O. (1976) *Tholoi, tumuli et circles funéraires*, Athènes.
- Pelon, O. (1980) *Le Palais de Malia, VI*, Études Crétoises XXV, É.F.A., Paris.
- Sakellarakis, G. (1965) Tourkogeitonia. *AD* vol. B3, 558-9 (in Greek).
- Sakellarakis, G. (1987) *Archaeological investigation for illegal digging in 1949 on Crete. Philia Epi to G.E. Mylonas*, The Archaeological Society at Athens, Athens (in Greek).
- Sakellarakis, G. (1997) *Archanes. A new look at Minoan Crete*, Athens (in Greek).
- Schiering, W. (1984) Bemerkungen zu den sogenannten architektonischen Motiven der minoischen Siegelkunst. In *Aux origins de l'hellénisme, la Crète et la Grèce*, Sorbonne, Paris.
- Theocharis, D. (1957) From Preceramic Thessaly. *Thessalika*, vol. 1, 70-86 (in Greek).
- Theocharis, D. (1962) Excavation at Sesklo. *Praktika*, 24-35 (in Greek).
- Vagnetti, L. (1972-3) L'insediamento neolitico di Festos.

ASAtene vol. 50-1, 7-138.

Van Windekens, A. (1986) *Dictionnaire étymologique complémentaire de la langue Grèque*, Leuven.

Yiannouli, E. 2006 *On pit-houses with regard to Thessalian remains. Archaeological Works in Thessaly and Sterea Hellas, Volos 27.2.-2.3.2003*, Ministry of Culture, Volos (in Greek).

Yiannouli, E. (forthcoming) The Minoan round building: On the traces of an elusive reality? In Glowacki, K. and N. Vogeikoff-Brogan (eds) *STEGA, The Archaeology of Houses and Households in Ancient Crete from the Neolithic to the Roman Period, International Colloquium, Ierapetra 26-28 May 2005*, Hesperia Supplement, ASCSA.