Metal to Clay: "Recovering" Middle Minoan Metal Vessels from Knossos and Phaistos through their Ceramic Skeuomorphs

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Abstract

Metal vessels made from precious materials are often noticeably absent from the archaeological record. This dearth of precious metal vessels is especially acute on Crete during the Middle Minoan period. Considering the vital role of metals in the socio-economic life of ancient societies, the loss of precious metal vessels represents a critical gap in our understanding of Minoan society during this period. Rather than relying on the fortuitous discovery of metal vessels in future excavations, this study offers an alternative method of "recovering" these "lost" vessels. Concentrating on the Middle Minoan ceramic assemblages from the palatial sites of Knossos and Phaistos on Crete, this dissertation demonstrates the feasibility of using ceramic skeuomorphs with "metallic" features to re-construct the appearance, function, and roles of metal vessels in Minoan society.

The conclusions reached in this study represent only the first glimpses of the possibilities skeuomorphs may offer to the archaeological community. The study of ceramic surface treatments did, in fact, allow for the "re-construction" of the appearance of certain metal vessels, even permitting the distinction between metallic decorative techniques that were likely first seen on foreign imports and those that were likely developed on Crete—including some that were previously unattested, such as inlay and enamel work, for the Middle Minoan period. The analysis of the origins of the shapes of these skeuomorphs suggest a possible trade in metal goods with the southwestern coast of Anatolia or northern Levantine coast—at a time when the first palaces were being built on Crete—and the analysis of the functional use of the skeuomorphs suggests that the majority of metal vessels were used as luxurious "drinking sets" for the socio-political elite, engendering, in turn, the emulation of ceramic copies to be used by the "sub-elite" as substitutes in competitive feasting ceremonies. In the end, the verdict falls squarely in favour of the skeuomorph; the study of these objects can only provide new avenues of research into the past.

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METAL TO CLAY:
“RECOVERING” MIDDLE MINOAN METAL VESSELS FROM KNOSSOS AND PHAISTOS THROUGH THEIR CERAMIC SKEUOMORPHS

Tanya J. McCullough

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Tanya J. McCullough
To my parents, the models I strive to emulate. *Merci.*
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ABSTRACT

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Tanya J. McCullough

Thomas Tartaron

Metal vessels made from precious materials are often noticeably absent from the archaeological record. This dearth of precious metal vessels is especially acute on Crete during the Middle Minoan period. Considering the vital role of metals in the socio-economic life of ancient societies, the loss of precious metal vessels represents a critical gap in our understanding of Minoan society during this period. Rather than relying on the fortuitous discovery of metal vessels in future excavations, this study offers an alternative method of “recovering” these “lost” vessels. Concentrating on the Middle Minoan ceramic assemblages from the palatial sites of Knossos and Phaistos on Crete, this dissertation demonstrates the feasibility of using ceramic skeuomorphs with “metallic” features to re-construct the appearance, function, and roles of metal vessels in Minoan society.

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CHAPTER 1

INTRODUCTION

Metal objects are notoriously underrepresented in excavated assemblages. Very often, these objects were melted down, looted, or curated—preventing them from entering the archaeological record altogether—or lost due to their high susceptibility to post-depositional processes. The paucity of extant metal objects is especially acute in Middle Bronze Age assemblages on Crete where only a handful of metal vessels dating to this period have been uncovered. This lack goes beyond the mere loss of objets d’art; it represents a critical gap in the dataset that informs our understanding of past societies.

Much of the acquired gold and silver in the past was transformed into precious tableware, and, just like plate in later periods, these vessels were used as a reservoir of wealth, a means of payment and reward, as well as markers of prestige and status within society. The acquisition of metals was considered of such import that it spurred the establishment of long-distance trade networks, the movement of peoples, and the need for specialized craftsmanship. The establishment of trade networks, prompted in part by the need for metals, also opened the channels for the import of other luxury materials, which, in turn, encouraged the local production of exotic goods, the exploitation of local resources, and the expansion of regional exchange networks, among other developments. Thus, the import and manufacture of metals helped to shape the Aegean Bronze Age societies known to us today.

Considering the central role of metals in the ancient economy, the dearth of extant metal goods in the archaeological record presents a critical problem for the scholar attempting to reconstruct the full extent of the social and economic systems of the time. Instead of relying on the serendipitous discovery of metal vessels in future excavations,
this dissertation offers a different approach to the “recovery” of these objects by analyzing the existing ceramic forms and attempting to trace the “metallic” features on these forms in order to “re-construct”¹ the appearance and meaning of metallic vessels in Minoan society.

As early as the 1950s, V. Gordon Childe noted the potential for skeuomorphs (imitations of an object in another medium) to give a “glimpse into [the] productive activities and artistic media of which no direct evidence survives” (Childe 1956:13–14). Despite this early realization, however, few studies to date have relied on skeuomorphs to reconstruct the character of past assemblages. Those studies that have focused on the phenomenon of emulation in the Aegean, Europe, and the Near East have largely been concerned with imitations of materials other than metal vessels or with assemblages from different time periods. Interest in the introduction of technological innovations during the Neolithic and Early Bronze has spurred research on ceramic imitations of basketry (Schuchhardt 1909; Wengrew 2001; Hurcombe 2008), stone imitations of metal tools, and vice versa (Frieman 2010a; 2010b), or local imitations of imported metal weapons (Nakou 1995:13–14), while a focus on trade and exchange during the Late Bronze Age has led to a number of studies on local imitations of imported Aegean wares in Egypt and Italy, Cypriot wares in the Near East, Anatolian wares in the Aegean, and Mycenaean wares in the Eastern Mediterranean (respectively, for Egypt: Vermeule 1982; Bell 1983; for Italy: Vagnettii 1999; D’Agata 2000; for Cypriot wares: Negbi 1978; Prag 1985; Bergoffen 2006; for Anatolian wares: Reeves 2003:203–245; for Mycenaean wares: Kling 1989:91–94; Jones and Vagnetti 1991:132–133; van Wijngaarden 1999:33–34). The few studies that have specifically focused on ceramic skeuomorphs of metal vessels can be divided into material that dates to the Early Bronze Age in the Levant (Philip and

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¹ The term “reconstruction” implies an exact replication. The use of the term “re-construct” here with hyphen is used to emphasize the fact that, archaeologically, most “reconstructions” are, in fact, present-day “constructs” (Reynolds 1999; Hurcombe 2008).
Rehren 1996) and Anatolia (Reeves 2003); Late Bronze Age in Europe (Traschler 1965; Sherratt and Taylor 1997); the Classical period in the Aegean (Vickers 1985; Gill 1986; Gill and Vickers 1990; Vickers and Gill 1994; Miller 1997; Zimmerman 1998); or later periods in other parts of the world (Verhaeghe 1991; Vickers 1986). Works that have touched on “metallic” skeuomorphs dating to the Middle Bronze Age include Reeves’ (2003) work on contextualizing the metal vessels from Anatolia and the Aegean during the Bronze Age and Foster’s article (1989), which mentions metallic imitations as one of many kinds of imitations in Minoan Crete. This work, then, is the first to offer a comprehensive study of ceramic imitations of metal vessels from Crete dating to the Middle Bronze Age.

Of the aforementioned studies that focus on ceramic imitations of metal vessels, none offers a model for recognizing skeuomorphs in the archaeological record when metal vessels are no longer preserved in the same contexts as their ceramic counterparts, nor do they focus on a large assemblage of ceramic imitations as the present study does. Vickers and Gill (1994), for example, largely concentrated on a sub-set of ceramic imitations: the black and red-figure vases that may have been emulating inlay work on metal vessels. In other works—such as Traschler’s (1965) observations of the metallic influence in Iron Age pottery in the Alpine Region, Sherratt and Taylor’s (1997) efforts to contextualize the Valchetrün metal hoard in the context of Bronze Age Europe, or Foster’s (1989) examination of the clay metallic “translations” in Minoan pottery—the concern is not on tracing lost metals through ceramic shapes; when metallic imitations are mentioned, it is only to show that they existed alongside metal vessels. These studies do, however, have a substantial practical advantage over the present work in that, for their time periods and regions, they are able to compare pottery shapes with extant metal examples from concurrent contexts. The recovery of metal vessels on Crete during a time for which so few metallic objects are preserved presents an altogether different challenge.
Unable to rely on the direct comparison of ceramic forms to surviving contemporary metal vessels, the emphasis of this dissertation lies almost exclusively, then, on the ceramic remains themselves.

Ceramics are ubiquitous in the archaeological record. Comparatively inexpensive to make, pottery was made in vast quantities and discarded relatively soon after manufacture. As this material preserves well, ceramics are present at most sites. Furthermore, the transient nature of pottery afforded craftsmen the ability to experiment widely with form and decoration. Potters regularly borrowed shapes from other ceramic traditions, invented new forms themselves, were inspired by nature, or copied objects made from other materials, including metal vessels. In copying metal vessels in ceramic, these artisans were, unbeknownst to them, preserving a record of the original object. In a way, then, the ceramic skeuomorphs can be said to constitute the “negative imprint” of the original metal item; long after the precious object has disappeared from the archaeological record, its more durable counterpart has remained. Thus, by looking for “metallic traits” on pottery forms, one should be able to “re-construct” the appearance of the types of metal vessels that once existed, and, from the data mined from these “metallic” forms, be able to better understand the role these metal vessels (and their skeuomorphs) played in Minoan society.

The “metallic” nature of certain Middle Minoan ceramic forms has long been recognized in features such as ribbon-handles, clay rivets, egg-shell thin walls, neck-moldings, sharp carinated shoulders, stamped motifs said to resemble repoussé, and

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2 This is the same idea as Vickers’ “footprints in the snow” (e.g., 1989:49).

more. While these metallic traits have long been acknowledged, few have delved into the nature of the relationship between clay and metal vessels, let alone attempted to trace the “metallic” traits of the ceramic skeuomorphs back to their original prototypes. No doubt this is in part due to the lack of a clear theoretical framework to support such an endeavor. Contemporary approaches to skeuomorphs offer definitions of the word that do not take into account the underlying processes of emulation and imitation on the physical appearance of these objects. By embracing a broader definition of the word, this present work is able to view skeuomorphs with different degrees of similarity between them and their prototypes as products that fall along the same chronological spectrum spurred on by emulation, a difficulty that may have hampered earlier attempts at recognizing the significance of skeuomorphs. Furthermore, this dissertation offers for the first time tangible criteria for identifying skeuomorphs in the archaeological record without the aid of contemporary metal examples and applies these criteria to a large ceramic assemblage in order to test the framework proposed. Thus, by offering a broader definition of a skeuomorph, by proposing a framework for identifying skeuomorphs in the archaeological record, and by comparing the framework to a Middle Minoan pottery assemblage on Crete, this dissertation presents a first step in the process of using ceramic skeuomorphs of metal vessels to re-construct lost metallic assemblages of the past and in using these skeuomorphs to discuss some aspects of the social and economic life of the Minoans during the Middle Minoan period.

1.1 DATASET

The chosen dataset for the present study is the Middle Minoan pottery from the sites of Knossos and Phaistos. A number of reasons informed this choice, including the central

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4 For example, Walberg 1987a:34–36.

5 Examples were occasionally drawn from secondary sites whenever the case warranted a further illustrative example.
role of these sites during the Middle Minoan period, the quality and quantity of the assemblage, and the wealth of publication of the materials.\(^6\) Knossos and Phaistos are two of the sites with the earliest palaces on Crete. The destruction and rebuilding of these palaces at various times have preserved pottery assemblages from some of the earliest phases of the Middle Minoan period (MM IB, MM IIA)—phases that are not always represented at other sites on the island. At Phaistos, in particular, large sections of the Middle Minoan Palace were found with little disturbance from later occupational layers. These remains allowed for the differentiation of distinct ceramic deposits, which provided archaeologists with good comparative material for the early levels of the Middle Minoan period, as well as evidence of the stratigraphic relationships for these assemblages.

Also of importance is the fact that some of the pottery from Knossos and Phaistos is very alike; so close, in fact, that petrographic and trace analyses have shown that some of the highest-quality ceramics—the so-called “Kamares” Ware\(^7\)—from both sites may have been manufactured at the same production center(s) somewhere in the Western Mesara\(^8\) (Wilson and Day 1994; Day et al. 1997; Day and Wilson 1998; see also Van de Moortel 2007:202). As will be demonstrated within this study, it is precisely these highest-quality ceramics that prove to be have the most “metallic” appearances. Thus, in

\(^6\) Like Gisela Walberg, when preparing her two monumental tomes on Kamares Ware pottery, I found it “soon obvious that the material from Knossos and Phaistos had to be analysed first, before it could be used as a framework for comparisons [with the rest of the island]” (1983:1).

\(^7\) For a definition of the term Kamares Ware, see Betancourt 1985:95-96; Day and Wilson 1998:352.

\(^8\) Day and Wilson (1998) do not reveal the statistics for their study, but state that “a significant portion of the classic, high-quality Kamares Ware...within the Knossos Palace precinct was not produced there, or even in the environs of Knossos” (1998:356). Rather, “many occur in fabrics which are local to south central Crete and, more particularly, the Mesara Plain” (1998:355). This study was corroborated by Van de Moortel, who has examined the subtle differences in manufacturing techniques among Knossian and Phaistian ceramics. She concludes that there was little movement of pottery between the two sites, except for the highest-quality Kamares vases and some transport vessels (2007:202).
a sense, one may understand the Middle Minoan pottery from Knossos and Phaistos not as two wholly disparate assemblages, but, in fact, as two assemblages that have much in common, including sources of origin for some of the most “metallic” of wares.

Lastly, the Middle Minoan assemblages from Knossos and Phaistos are relatively well published. A study of this kind necessarily relies on visual examples; therefore, good published illustrations are indispensable. Much of the ceramic material used as the basis of the present work has been drawn from the best illustrated reports of these sites: Pernier (1935), Levi (1976), and Levi and Carinci (1988) for Phaistos, and Evans (1921–1935) and MacGillivray (1998) for Knossos.

1.1II CHRONOLOGY

Just like other archaeological investigations into complex stratigraphic and ceramic relationships, the chronological sequencing of the Protopalatial material from Knossos and Phaistos has not been without constant reassessment over the years. The chronological sequence of the this period was first articulated by Evans at Knossos (1921–1935). He distinguished various pottery phases of the so-called Old, or Middle Minoan Palace, at Knossos (MM IB, MM IIA, MM IIB) through the stratigraphic and stylistic relationships of pottery groups uncovered under the remains of his later so-called New Palace. The chronological phasing for this period underwent few challenges until a large section of a Protopalatial (Middle Minoan) palace was uncovered at Phaistos by Levi in the 1950s and 1960s (Levi 1976; Levi and Carinci 1988). Previous excavations at Phaistos by Halbherr and Pernier, carried out at the same time as Evans’ excavations at Knossos, also revealed part of this palace (mainly by excavating under the remains of the later Palace), but they were able, with the relatively modest amounts of uncovered material, to syncretize their sequence of construction and destruction levels to those outlined by Evans at Knossos (Pernier 1935; Pernier and Banti 1951). Pernier used
Evans’ classification system for the Protopalatial levels at Phaistos, but ascribed the stratigraphic sequence of the Middle Minoan Palace to only three phases with no subdivisions: MM I, MM II, and MM III (Pernier 1935:xiii–xv). He attributed the construction of the palace to MM I, ascribed the pottery found immediately underneath the later Palace floors to MM III, and that found in between to MM II (Pernier 1935:447–457; Caloi 2009:377). Although the end of the period in Pernier’s term (MM III) was later than Evans’ MM IIB date for the end of the Protopalatial palace at Knossos, the fact that most of the pottery from Pernier’s MM III level was found underneath the Neopalatial Palace levels suggests that most of this material probably belonged to the acme of the palatial complex, thus, to MM II (mainly MM IIB; see Carinci and La Rosa 2007:118). Problems with reconciling Evans’ chronological phasing at Knossos with the stratigraphic evidence at Phaistos only arose after the extensive remains of a previous unknown wing of the Protopalatial palace were uncovered at this latter site by Levi (1976; Levi and Carinci 1988). Contrary to previous Protopalatial deposits at Knossos and Phaistos, these remains consisted of deeply stratified layers and large amounts of associated pottery, allowing for a finer chronological assessment of the period. On the basis of these finds, Levi advocated a ceramic sequence that was quite different from the one at Knossos. Having uncovered three superimposed floors in a building in the southwest wing of the palace, which he interpreted as representing three separate building phases, he proposed a sequence consisting of three corresponding ceramic phases (Fasi I, II, and III), one of which he divided into two sub-phases (Fase Ia and Ib) based on some building alterations he observed in some rooms (Levi 1960:81). According to his interpretation, Levi rejected Evan’s subdivision of the Protopalatial ceramic material, only agreeing that both palaces were likely constructed at the same time (Evans’ MM IB;
Levi’s *Fase* Ia) and that his *Fase* III corresponded to Evans’ MM III period. It was Levi’s I and II phases that proved the most problematic. Platon (1962; 1968), and Zois (1965) were quick to criticize Levi’s interpretation. Noting that that there were joins between vessels from Levi’s building/ceramic phases Ib and II, that phase Ib pottery showed strong similarities with both MM IIA and MM IIB pottery from Knossos, and that the pottery from *Fase* Ib did not differ very much from that associated with *Fase* II levels, they suggested that, rather than representing two distinct phases of the same building, in actuality, *Fasi* Ib and II probably represented the upper and lower floors of the same building after a destruction event. They only differed on the date of this event: Platon (1962; 1968) believing it occurred in MM IIB (in Knossian terms), and Zois (1965) suggesting that the destruction took place in a period corresponding to Evans’ MM IIA. Levi’s architect at the site took up the challenge of reviewing the architectural phases of the site (Fiandra 1961–1962). Fiandra also rejected Levi’s interpretation of the Phaistian stratigraphy and proposed instead the existence of four architectural periods based primarily on changes in building styles (periods 1, 2, 3, and 4). Fiandra’s sequence of building phases—and the pottery associated with them—formed a sequence that closely corresponded with Evans’ ceramic and building phases at Knossos (i.e., period 1 = MM IB; period 2 = MM IIA; period 3 = MM IIB; and period 4 = MM III), but some of the phases that she once attributed to different parts of the site have now been revised.

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9 Specifically, Levi believed that the destruction of the First palace at Phaistos occurred in MM IIIB; therefore, he questioned Evans’ MM IIIA phase and Evans’ date of MM IIB for the end of the First palace at Knossos (Levi 1960:84–85). Levi’s date for the end of the First palace at Phaistos has now been rejected, and it is now thought that the end of the First Palace at Phaistos occurred in MM IIB, like at Knossos (Carinci and La Rosa 2007).

10 For example, Fiandra stated that only the Southwest wing, as excavated by Levi, was built in MM IB (period 1) and that only the North wing of the palace, as excavated by Pernier, was constructed in MM IIA (period 2; 1961–1962:112–118). The most recent revision of the stratigraphy at Phaistos has concluded that both the Southwest and North wings of the First Palace were built at the same time, together with the West and Central Courts, in MM IB (Carinci and La Rosa 2007:21, 110–111).
Faced with such criticism, Levi, together with Carinci (Levi and Carinci 1988) revised his stratigraphic assessment of Phaistos and published changes to his original chronological scheme. Although accepting that the pottery of the Fase Ib and II floor deposits were stylistically similar, the scholars still maintained that this pottery belonged to two different architectural phases (Levi and Carinci 1988:299, 303). Carinci was able to distinguish some ceramic deposits that could be dated to an early phase of Ib, which he labelled Ib Early, or Fase Ib iniziale (Levi and Carinci 1988:302), distinguishing it from stylistically different pottery from a Late stage of Fase Ib (or just Fase Ib in Levi and Carinci 1988). Van de Moortel has shown that much of this Early Fase Ib can be roughly equated with Evans’ MM IIA period (2006:267; 2007:204, table 3). More recently, Carinci has confirmed that Fase Ib Late/II, rather than Fase III, was the last Protopalatial ceramic phase at Phaistos, and that Fase III, corresponding to Evans’ MM III, actually represented the first Neopalatial phase at the site (Carinci 2007; see also Girella 2010 for MM III at Phaistos, which shows that Fase III is MM IIIA). Thus, the few Fase II deposits that could be isolated under the structures assigned to Fase III as well as above earlier Ib material (such as fill deposits) were assigned to a mature phase of MM IIB (Carinci and La Rosa 2007:117).

Since 1994, the Italian Archaeological School at Athens, under the direction of La Rosa, has returned to Phaistos in order to revisit the stratigraphy of the site (La Rosa 2000; 2002; 2003; Tomasoel 2001; Carinci and La Rosa 2007; 2009; Caloi 2009; Militello 2012). In addition to revealing significant evidence for Prepalatial periods, the new archaeological soundings have revealed several additional building phases from the Protopalatial period and allowed the excavators the means of fine-tuning the date and stratigraphy of the previously exposed levels (see Carinci and La Rosa 2007; Militello 2012). In short, the new excavations have confirmed a wider construction phase in the
MM IB,\textsuperscript{11} recognized a MM IIA level of construction, identified some new building phases (e.g., the lustral bath phase, Kouloura/es phase, or sacelli phase) at the site (falling into different periods), and fine-tuning the latest MM IIB levels (Carinci and La Rosa 2007; see Militello 2012, table 8.1 for comparison of chronological sequences at Phaistos by different scholars). Although individual deposits around the site have been re-dated, in terms of reconciling the new excavations’ phasing with the earlier one proposed by Levi (1976) and modified by Levi and Carinci (1988), it seems as if there is still some correspondence in the date of the phases. \textit{Fase Ia–Ib iniziale} is thought to correspond to late MM IB, \textit{Fase II} is seen as a mature phase of MM IIB, and \textit{Fase III} (ceramic phase) is still attributed to MM IIIA.\textsuperscript{12} As for the stylistic dating of pottery from \textit{Fase Ib} (Late) levels, the most recent assessment has concluded that “\textit{Fase Ib} substantially corresponds to the entire MM II period, on account of the pottery, without the possibility of further subdivisions in spite of the large quantity of deposits” (Carinci and La Rosa 2007:117).

As this study is concerned with the dating of specific vessels, and because Levi and Carinci (1988) provides the most comprehensive list of vessels with their context finds and phasing for Phaistos to date, this study has adopted the phasing sequence proposed by Levi and Carinci (phases Ia, Ib, II), but has dated these phases according to the most recent work at the site. Thus, in general, pottery said to have come from \textit{Fase Ia} is hereby dated MM IB, from the \textit{Fase Ia–Ib} (Early) transition and the \textit{Fase Ib} (Early) to MM IIA (as per Van de Moortel 2006:267; 2007:204, table 3; Caloi 2009:436), \textit{Fase Ib} (Late) to MM IIA–IIB (or MM II), and \textit{Fase II} to mature MM IIB.

\textsuperscript{11} The first phase of the palace is now thought to encompass the Southwest Quarter, the Northwest Quarter, the Central Court, the Lower West Court, the pavement of the Middle West Court, and a few houses to the west of the West Court (Militello 2012:239). This is \textit{contra} Fiandra (1961–1962) and Levi (1976), who only believed the Southwest Quarter was founded in MM IB.

\textsuperscript{12} There has been some confusion about this phase. Pernier and Levi’s architectural \textit{Fase III} mainly belongs to the end of the MM Palace period, or MM IIB. The pottery attributed to \textit{Fase III} in Levi and Carinci (1988), however, has mainly stylistically been dated to MM IIIA, or in some cases, to MM IIIB (Militello 2012:240).
Meanwhile, at Knossos, Evan’s chronological sequence of the pottery from the Protopalatial periods have undergone their own reassessment over the years (e.g., Popham 1974; Betancourt 1977; Warren 1980; 1981; Hood 1961–1962; 1994; Walberg 1987a; Momigliano 1991; 2000; Panagiotaki 1998; Macdonald and Knappett 2007). As much of the Protopalatial pottery from Knossos was found in isolated pockets around the site, and as the stratigraphic relationships between contexts were not always fully published by Evans, much of the discussion surrounding this pottery has centered around the stylistic distinctions of particular ceramic groups. In an effort to clarify the confusion surrounding this pottery, a pottery workshop was convened at Knossos in the 1990s to help clarify the stratigraphy and ceramic sequences of the Early Minoan and Middle Minoan levels at the site (Cadogan et. al 1993). This resulted in a general consensus and a return to the pottery sequence proposed by Evans in his original publications of the palace (Macdonald and Knappett 2007:149). Of equal importance to the chronological sequencing at Knossos, MacGillivray (1998) also undertook a full re-investigation into the stratigraphy of Protopalatial levels at Knossos, and his resulting monograph of the Middle Minoan pottery at Knossos remains one of the most comprehensive studies of this ceramic material. As a result, this study has adopted MacGillivray’s dating and terminology for the majority of the Middle Minoan pottery material at Knossos. This work also has provided most of the core sample of ceramic vessels from Knossos mentioned in this study. As it was not possible to determine in many cases how the Protopalatial pottery deposits at Knossos were formed due to a general absence of detailed plans, true stratigraphic sections, and photographs of the Evans excavations, MacGillivray opted to refer to the Middle Minoan ceramic deposits “groups,” each one labelled with a letter (e.g., deposits from the “Royal Pottery Stores” are named Groups F

13 Some additional illustrated examples have been sampled from Hogarth and Welch (1901); Mackenzie (1906); Evans (1921–1935), Walberg (1976); and Macdonald and Knappett (2007).
to I). For a list of the names and dates of the pottery groups under discussion, see MacGillivray 1998:17–53, 98, fig. 3.1.

In order to determine whether contextual differences affected the distribution of “metallic” wares, the pottery examined for this study was not confined to the palaces *stricto sensu* at Phaistos or Knossos. Some houses surrounding the houses, especially at Phaistos were also considered. Whereas this study has confined itself to pottery from MM IB to MM IIB, due to mixed deposits with pottery stylistically dated to MM IIB–IIIA (especially at Knossos), some slightly later pottery vessels may also be included in this study with the understanding that some of the pottery traditionally labelled MM IIIA may in fact have originated in MM IIB levels. For a schematic view of the chronology of Crete during the Bronze Age, please see Table 1, and for plans of the palaces, see Figures 1 and 2.

1.III ORGANIZATION

This dissertation is organized in the way thought best to serve its goals of providing a workable framework for the study of skeuomorphs and to test it against the Middle Minoan assemblage from Knossos and Phaistos. Thus, Chapter 2 sets the groundwork for the rest of the dissertation by proposing a new, usable definition of “skeuomorph” and by crafting a general model of the emulation process that can then be compared with the dataset. As part of this model, a framework for recognizing skeuomorphs in the archaeological record is provided. This framework is applied to the pottery assemblages of Knossos and Phaistos dating to the Middle Minoan period, and the resulting data is presented in the next three chapters. Those attributes that allow for the identification of metal prototypes are organized in groups that reflect their usual treatment in ceramic

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14 That is to say that even though stylistically dated to MM IIIA, there is also the possibility, from a stratigraphic point of view, that pottery stylistically said to be MM IIIA may have been manufactured in levels contemporary with ceramics dated to MM IIB.
studies, thus, Chapter 3 focuses on structural details, Chapter 4 on decorative surface treatment, and Chapter 5 on pottery shapes. For ease of reference, the ceramic shapes were organized in Chapter 5 according to type groups. Mention in the text to pottery types (e.g., SG CUP 1, JUG 1) refer to this typology. The examples used in these chapters are amply illustrated to facilitate comprehension. These examples are reproduced in plates at the end of the manuscript and cited in the text in [square brackets and bold type] after the pertinent reference. The plates follow the order in which the examples are mentioned in the text. Therefore, some illustrations of the same vessel may repeat. Efforts have been made to also provide visual examples of metal vessels that share similar traits with the pottery. The metal vessel examples have been drawn from various sources. As few extant metal vessels have been found on Crete dating to the Middle Minoan period, it has been necessary to find examples of extant metal vessels from other periods and other regions in order to compare the features on these vessels to the pottery vessels that may have been emulating them. While the manufacture of metal itself (smelting, ore source) and the production techniques (sweating, soldering, casting) may have changed significantly over time, it can be argued that the decorative techniques used on metal vessels (fluting, gadrooning, repoussé work, incising, chasing or engraving) are universal techniques that have been applied to metal vessels from antiquity to the present day. Since it is the “look” of the metal vessel that is being copied, it is the superficial decorative details that are most important in trying to identify imitations in the archaeological record. That being said, every attempt has been made to find metal examples that are close in date to the pottery being studied (late EBA, MBA, early LBA), in Crete and the Greek mainland, and in geographical zones (within MBA or end of the EBA) that may have had connections with Crete (Anatolia, Near East). (See section 6.II Origins of Shapes for a discussion on the metal comparanda for the ceramic vessels on Crete).
In Chapter 6, the data presented in the previous three chapters are summarized and tabulated. The goal here is to highlight some of the data that can be mined from the analysis of ceramic skeuomorphs of metal vessels. In order to assess the nature of the information that may be garnered from each type of “metallic” attribute (structural details, decorative surface treatments, and shapes), each section within the chapter examines the distribution of these attributes among the skeuomorphic assemblage present at Knossos and Phaistos during the Middle Minoan period. Results indicate that, in fact, much information can be gleaned from the analysis of ceramic skeuomorphs of metal vessels. For example, the study of ceramic surface treatments did, in fact, allow for the “re-construction” of the appearance of certain metal vessels, even permitting the distinction between metallic decorative techniques that were likely first seen on foreign imports and those that were likely developed on Crete—including some that were previously unattested, such as inlay and enamel work, for the Middle Minoan period. The analysis of the origins of the shapes of these skeuomorphs suggest a possible trade in metal goods with the southwestern coast of Anatolia or northern Levantine coast—at a time when the first palaces were being built on Crete—and the analysis of the functional use of the skeuomorphs suggests that the majority of these goods may have been imported as parts of “drinking sets” for the socio-political elite, which, in turn, engendered the emulation of ceramic copies to be used by the “sub-elite” as substitutes for metal vessels in competitive feasting ceremonies. And finally, the study of the distribution of structural details on vessel types over time revealed another use for skeuomorphs, one that has yet been attested in the literature on this subject. The continued presence over time of “metallic” features on certain vessel types intended for cultic spaces—a pattern that diverges from the norm—suggests that certain skeuomorphs used in ritual ceremonies were purposefully invested with “fixed” markers in order to cognitively evoke a connection with tradition and the past.
There is much to recommend the use of ceramic skeuomorphs to glean information about “lost” metal vessels. In section 6.IV however, the emphasis is on the limitations inherent in this technique. This section discusses the chronological and contextual challenges offered by the archaeological record and concludes with a final evaluation of the emulation and imitation model proposed in Chapter 2. In the end, the verdict falls squarely in favor of the skeuomorph; the study of these objects can only provide new avenues of research into the past.
CHAPTER 2
THEORETICAL FRAMEWORK

In this study, I suggest using the ceramic skeuomorphs of metal vessels in order to “recover” the Middle Minoan metal vessels that are now lost to us. Before this could be accomplished, however, it was first necessary to determine the significance of these objects as well as understand the relationship between skeuomorphs and their metallic prototypes. Unfortunately, this task was not without its complications. One of the major problems to understanding the meaning of skeuomorphs is the assortment of studies proffering competing theories on the function and use of these objects. While, at the most prosaic level, skeuomorphs may be defined as objects in one material imitating the features of an object regularly made in another (e.g., Childe 1956:13; Vickers and Gill 1994:106; Hurcombe 2008:102), theories concerning the roles and functions of skeuomorphs in the archaeological literature are almost as diverse as the contexts in which these objects find themselves. Interpretations of these objects over the years have ranged from perceiving skeuomorphs as being of little social relevance to regarding these imitations as meaningful objects implicated in schemes of identity creation and maintenance, economic strategizing, and incorporating new technologies into society. Whereas these previous theories have done well in expanding our knowledge about the character of skeuomorphs in different contexts, the diversity of functions attributed to these imitative objects in the literature has led to a general sense that skeuomorphs do not “express or embody a single set of fixed meaning” (Frieman 2010a:34). One of the challenges of working with skeuomorphs, therefore, has been to sort through these various interpretations and to provide a universal definition for skeuomorphs—a definition that would not only be able to explain the character, value, and purpose of
these objects, but one that would also be able encompass all the roles attributed to these objects in such varied contexts.

Compounding the difficulty of working with skeuomorphs, besides the prevalent notion that skeuomorphs do not represent any fixed meaning, is the fact that not all imitative copies exhibit the same degree of fidelity to their prototypes. Within a large group of copies, some objects may appear to adhere closely to the prototype, whereas others may only bear a passing resemblance. This disparity in appearance provides a challenge to the archaeologist trying to either define what constitutes a proper skeuomorph or to assess the degree of accuracy needed in order to re-construct the appearance of the original prototypes. In today’s literature on the subject, one of the obstacles to fully understanding skeuomorphs is, seemingly, the perception of the word itself. The word “skeuomorph” is still deeply rooted in the physical characteristics of the object. As the etymology of the word suggests, the identification of a “skeuo-morph” is highly contingent on its form (“μορφή” or “shape” in Greek). As a result, when assessing an object for its mimetic qualities, there is a tendency to focus on the “materiality” of the object (i.e., its form, structural details, technological aspects) and to unconsciously compare that object with the idealized physical qualities of the original model. Inevitably, there is judgement on the “accuracy” of the copy vis à vis its prototype. As the prevailing definition of the term asks that skeuomorphs resemble in whole or in part their prototypes, objects that seemingly do not display “enough” resemblance to the original model may be cognitively dismissed as “cheap copies,” in which the artist has put no “real effort at imitation” (Prag 1985:161), or rejected altogether as not worthy of being called a skeuomorph. As a consequence, objects traditionally labeled “skeuomorphs” tend to only represent the “most accurate” copies and do not encompass the whole spectrum of potential imitative copies, which has limited our understanding of these objects.
In this study, I propose a new definition of skeuomorphs based on the conviction that these objects can only be understood by examining the underlying processes inherent to the creation and propagation of these particular kinds of copies. In essence, all skeuomorphs are herein considered to be the by-products of a processual cycle of emulation and imitation. Furthermore, I suggest that many of the physical quirks and behaviors of these objects may be explained once skeuomorphs are regarded as emulative proxies invested with a symbolic authority to act on behalf of their prototypes. By viewing skeuomorphs as corollaries of the emulation process, this approach not only manages to reconcile the divergent interpretations of skeuomorphs in the archaeological literature back to one unifying definition for these objects, the framework proposed here also provides an explanation for the apparent diversity in appearance among groups of imitative copies, from accurate to not-so-accurate. This ability to recognize and define the various forms of skeuomorphs by their formal attributes has proved to be an important component of this study, given the self-imposed tasks of identifying the “metallic” skeuomorphs among the ceramic assemblages of Knossos and Phaistos and of defining the role and meaning of these skeuomorphs (and their prototypes) at these palatial sites.

This chapter, then, outlines the current theories concerning skeuomorphs and, building from those studies, presents a new model for the study of these objects. This model is thereafter extended to the archaeological record, where a methodological framework is proposed for the identification of ceramic imitations of metal vessels in the Minoan archaeological assemblages.

2.1 PREVIOUS LITERATURE ON SKEUOMORPHS

There is little consensus on the overall meaning or role of skeuomorphs in the archaeological literature concerning this topic. In general, theories concerning the function of these objects tend to fall into various camps depending on the region and time
period in which the skeuomorphs figure. Thus, the tendency to view “earlier” skeuomorphs (from the Neolithic or early Bronze Age) as a means of understanding the transition to new technologies, “later” skeuomorphs (from the Late Bronze Age onward) as economic substitutes for luxury goods, and modern-day skeuomorphs as a way of facilitating the interaction between computer users and software programs. Even this tendency to assume the function of skeuomorphs a priori within these studies is still an improvement in our understanding of these objects from the period when the term was first coined by H. Colley March in 1889. Colley March devised the term to describe “those forms of ornaments...derived from structure” (1889:166). In his view, vestigial features on objects in the a medium were the means for people using more advanced technologies to visually cite the more primitive materials once used for the same function. Skeuomorphic details, thus, were simply an expression of stylistic conservatism that were not conceived by Colley March as conveying any significant socio-political or economic relevance (1889:166–168).

This approach to skeuomorphism reflected the broader theoretical conception common at the time that envisioned the archaeological record as a linear progression from more primitive societies to ones using more advanced and sophisticated technologies and materials. As a consequence, skeuomorphic features were viewed as attributes that were technologically inferior and, thus, not very meaningful. Even though this nineteenth and early twentieth centuries cultural evolution approach to the archaeological record has been discredited today, the idea that there is a linear progression in “better” and “more fit” technologies seems to persist. Thus, despite early recognition by some archaeologists of the value of skeuomorphs in helping to interpret the archaeological record (Evans 1921:241; Myres 1930:464; Childe 1956:12–14), the perception that these objects were almost worthless has persisted until relatively recently (e.g., Vickers and Gill 1994:124, fn. 78 for further references).
Surprisingly, it is only relatively recently that the imitation of objects has come to be understood as a purposeful strategy by past peoples for understanding and mediating the world around them. One of the most common explanations for skeuomorphs is that they fulfill an economic role as less expensive copies of intrinsically high value objects. Michael Vickers, followed by David Gill—some of the first scholars to espouse this idea—have been strong proponents of this explanation (Vickers 1985; 1986; 1989; Gill 1988; Gill and Vickers 1990; Vickers and Gill 1994). The main thrust of their argument revolved around the proposition that Attic Black- and Red-figure vases were direct copies of more expensive metal vessels with gold and silver figure inlays. Although Vickers and Gill’s (1994) ideas have been supported by scholars who have noted a parallel value scheme for metal objects and their imitations in other regions and time periods (Rawson 1986; Watson 1986; Vickers 1986; Verhaeghe 1991), the rigidity of these authors’ hierarchical scheme of materials, their assertion that black represented tarnished silver on the ceramic imitations, and the fact that potters only had a small number of colors to choose from have led many classicists to reject the idea that black and red figure vases were in fact copies of metal prototypes (e.g., Cook 1987; Boardman 1987; 1996).

The same understanding of imitations as economic substitutes has been espoused by some scholars studying the distribution and consumption of Cypriot and Mycenaean wares in the Eastern and Central Mediterranean during the Late Bronze Age. They argue that Aegean wares—as added-value goods—were valued export items high demand in countries around the Mediterranean basin at this time (for distribution of Aegean ceramic wares: Hankey 1981; 1993; Leonard 1981: 1985; Mee 1978; van Wijngaarden 1999;

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1 As opposed to prime—convertible—value or preciosity value (Sherratt 1994:62–63).
As the desire for these goods “trickled down”\textsuperscript{2} from the upper levels of society down to other social groups, the demand for these imports would have grown. Therefore, during periods when the flow of the original imports was interrupted or during periods when demand outgrew the pace of importation, it was argued, the imitations of Aegean-style pottery would have fulfilled a socio-economic need for the originals (Cadogan 1973:100; Hankey 1981:109–110, 115; 1993:104; Sherratt 1980:196, 197, 202; Leonard 1981:90–91; Artzy 1985:136; Cadogan 1991:169; Åström 1998:263; D’Agata 2000; Bergoffen 2006; cf. Wijngaarden 1999:32).

Although successful in demonstrating, in many cases, an inverse correlation in the distribution of luxury goods and their skeuomorphs at any given moment in time, one of the problems with studies of this kind is the seemingly underlying belief that the production and distribution of skeuomorphs were regulated by impersonal “market forces” in a supply and demand based economy. There is little discussion of agency in many of these studies, wherein luxury goods are seen to “trickle down” to lower status individuals seemingly independently, more as a matter of course than as a distinct strategy by those wanting to own skeuomorphs. Nor do many of these studies confront the question of just why individuals of lower status should be satisfied with patently “non-genuine” copies of higher-value goods.

One exception in this regard is the work by S. Sherratt, who, in an 1999 article, does contemplate the role of added-value goods, that is to say, goods that derive their value less from the preciosity of the medium in which they are made, but rather through the association of these goods with other high value materials, such as metals or textiles, or through the contexts in which they are used (see also, Sherratt 1994:63–64). As

\textsuperscript{2} The “trickle-down effect” was also cited by Vickers and Gill (1994:54) as the reason that less affluent members of Greek society would want the “metallic” imitations. In this view, taste in fashion is created by the elite, and as fashion “trickles down” from more expensive products to cheaper ones, potters were only following the fashion trends of the day.
objects that also derive their value from the cognitive association with other objects rather than from (in most cases) the materials in which they are made, Sherratt’s description of added-value goods may also be applied to skeuomorphs as well.

In discussing the consumption and cultural value of added-value pottery in societies outside of the manufacture area of the originals, Sherratt suggests two possible roles for this pottery: as sub-elite or substitute-elite stand-ins (1999:185). According to Sherratt, the main role of sub-elite objects, which, essentially, consist of suitably exotic, yet non-convertible goods, is to act as “placebos” for social groups who are excluded, through means or status, of accessing genuine elite materials and goods. Substitute-elite goods, on the other hand, specifically refer to stand-ins for elite objects that may otherwise have been used in elite contexts. These stand-ins occur particularly in tomb depositions or sanctuary dedications in circumstances where token gestures would be deemed acceptable or where sumptuary regulations frown upon conspicuous consumption. Contrary to the notion of an impersonal agent causing elite goods to “trickle down” as an explanation for the occurrence of imitations, Sherratt’s suggested uses for value-added products—which, in essence, describes many skeuomorphs—provide more meaningful explanations for the function and role of these objects in society. Not only does the notion that added-value goods were used as substitutes for high-end objects tackle the thorny problem of the acceptance of patently “non-genuine” objects, she suggests a role for these objects more than just mere “economic substitutes” in an implicitly conceived market economy framework.

As will be argued below, I agree with Sherratt’s assessment of the role of added-value goods; these objects were likely used as substitutes for other valued objects. Where our work diverges, however, is in the notion that all skeuomorphs acted as “cheaper” substitutes for high-status goods or that these objects were necessarily used in “elite” contexts. While a large majority of skeuomorphs seemed to take on the role of substitutes
of luxury goods, examples of skeuomorphs made from more expensive (or at least comparable) materials than those of their prototypes demonstrate that, in some cases, some of these imitative objects were actually more intrinsically valuable than their prototypes, hence, hardly practical options in a paradigm that would see skeuomorphs as “placebos” for lower-status individuals. In addition to these types of skeuomorphs that do not conform to the interpretation of skeuomorphs as “economic” substitutes in a market-oriented economy, another problem with this paradigm is that this interpretation fails to explain the presence of these objects in societies that show little evidence of class distinction into formalized elite and non-elite groups.

It is perhaps for this last reason that the role of skeuomorphs is perceived differently among scholars who study skeuomorphs from periods in which societies evince little or incipient social stratification (Wengrew 2001; Hurcombe 2008; Frieman 2010b). Studies of this kind tend to view skeuomorphs as the means of understanding new materials and technologies during periods of technological transition, such as, for example, the transition from basketry to pottery in the Neolithic or the transition from stone tools to metal implements in the Early Bronze Age (Wengrew 2001; Hurcombe 2008; Frieman 2010b). The critique of these scholars is mainly directed towards the assumption that past peoples shared the same value system with modern societies and that information traveled unidirectionally from one material to the other in a way that reflects our own contemporary value systems (i.e., the assumption that metals are more “valuable” than stone, hence, stone tools necessarily imitated metal ones). This premise assumes that the adoption of new technologies such as metallurgy represented “progress” toward more practical and useful strategies, and, thus, the new technologies must have been considered more desirable than the traditional technologies that they were replacing. Rather than assuming that new technologies were necessarily considered “more fit,” “high-status,” or economically viable, scholars who critique this view prefer to see the
innovations and their imitations as a dialogue between two materials (Frieman 2010a; 2010b). From this viewpoint, the creation of skeuomorphs was a means for past peoples to understand the new technology and a way of incorporating foreign ideas and materials into their societies in a meaningful way (Schuchhardt 1909; Wengrew 2001; Taylor 1999). A potter, for example, experimenting with ceramics at a time when this medium was not well known, would have “reproduced, not only the operational procedures familiar to [him] from basketry, but also the outer appearance, texture and perhaps color schemes of decorated woven vessels” (Wengrew 2001:81). This would not only have allowed the potter a way to familiarize himself with the mechanical properties of the new medium, but would also have produced new goods that elicited the same aesthetic response as the old. In this way, a pot that looked like a basket would have been more readily understood, desired, and, ultimately, adopted in the society. Taylor calls this cultural phenomenon “envaluing” (1999:29, fn. 6). The new materials became envalued by a process that gradually embedded the new materials into the stylistic and functional framework of their better-known predecessors. Thus, skeuomorphs, in this view, are not economic substitutes of the “better” technologies made from new materials, but the means by which the new technologies were incorporated and given a specific value within past societies. As people grew more familiar with the properties of the new materials, it is argued that artisans in the new medium would have begun to develop their own styles and methods suitable to the properties of the new material. No longer dependent on skeuomorphs to mediate between the old and new technologies, then, over time, the need for skeuomorphs would have waned, until, eventually, they would no longer have been manufactured.

The view that skeuomorphs are created as the means of understanding and mediating between old and newer technologies is one that has taken hold in communities concerned with graphic design interface in computer technology. In this interpretation,
skeuomorphs, such as, for example, digital software that imitate physical musical instruments and audio equipment with “knobs” or “switches,” are deliberately employed to make the new technology look familiar to the user, and, hence, easier to use.³

In this interpretation of the material, the functional value of the skeuomorph as a tool for enhancing the usability of a new medium/technological innovation trumps any consideration of the social and intrinsic value of the prototype or of the comparative value of the prototype in regards to its imitation. Thus, while it may be true that skeuomorphs played a role in understanding and accepting new innovations/technologies within the society, this theory takes little account of the underlying reasons an object may have been copied in the first place, nor does it manage to explain the number of skeuomorphic copies of high-status goods, whose function appears to be less about understanding and enhancing the usability of a particular object than act as a referent to that object in different contexts. Given this lack of consideration for these factors, the theory that skeuomorphs were created in order to facilitate the transition and understanding of innovations and technologies, therefore, can not be applied universally to all skeuomorphs.

The case of skeuomorphs in computer design persisting over time is a reminder that the arrival of new technologies or products does not necessarily mean the old are abandoned. In fact, a large percentage of skeuomorphs, once introduced, continue to exist side by side with their prototypes for various lengths of time, often taking on new uses and meanings within the society. Perhaps sensing that the meaning of skeuomorphs resides in the relationship between the prototype and its imitation (and the social formations that created and used them), another set of scholars have proposed various

³ A search for “skeuomorph” in any online search engine will produce webpages discussing the merits and disadvantages of skeuomorphism in product design. Incidentally, the very specific use of “skeuomorphism” to reference elements in graphical user interface leads one to believe that this meaning of the term will usurp any other meaning of the term before long—at least on the internet.
roles for skeuomorphs based on this dialectic between the two sets of objects and the social groups that use them. The roles proposed have included skeuomorphs as the means of reinforcing social identities (Harrison 2003:326–327; Howey 2011); of subverting or consolidating the hegemony of elite groups by lower-status groups (Reeves 2003; Knappett 2002:111; 2005:147–148) and even improving the creative output of competing artisans (Zimmerman 2008).

Although very diverse, at the core of all of these interpretations is the recurrent theme of competition—between internal and external social groups, individuals, and/or artisans. That the creation of skeuomorphs should be thought to induce competition among different groups is an idea that is perhaps rooted in the properties of mimesis. Mimesis has been described as the ability “to copy, imitate, make models, explore difference, yield into and become Other” (Taussig 1993:xiii). The power of mimesis lies in the “copy drawing on the character and power of the original, [such that] in some way or another, the making and existence of the artifact that portrays something gives one power over that which is portrayed” (Taussig 1993:13). In other words, the act of imitating an object draws away from that object some of its power and transfers it to the copy, hence, giving the copy to power to compete with the original. The ability of a thing to act on the object it mimics has been likened to the properties of sympathetic magic, as used in voodoo, for example (Gell 1998:99; Harrison 2003:327; Knappett 2002:111). Contrasted with the use of contagious magic, which requires physical contact with the intended target, sympathetic magic “works” on the basis of imitation. That is, an object need only share similar visual properties with the intended target for the magic to have effect. Through the power of mimesis, skeuomorphs, as objects that also share visual properties with the models that they copy, become more than simple copies, they become meaningful objects with their own power to affect the discourse between things and between those social groups that own those things (Knappett 2002).
One example of the way in which skeuomorphs are thought to affect the discourse between (things) and people is Harrison’s (2003:326-327) ethnographic work among Aboriginal peoples of Australia. In his study, Harrison noticed that certain Aboriginal groups were using modern bottle glass to create forms that resembled ancient knapped stone tools. According to the author, the re-emergence of “archaic” forms in glass was a strategy by Aboriginal Australians to subvert the power of the politically dominant Caucasian Australian culture by appropriating a material proper to the “Other” and incorporating it into traditional stylistic systems. Although, in the end, noting that the glass skeuomorphs were not used for the same purposes as their stone prototypes (2003:327), nevertheless, the use of skeuomorphs was seen by Harrison as the means by Aboriginal peoples of commenting on the influx of colonial powers and, in some measure, of strengthening the indigenous identity faced with foreign incursion.

In addition to envisioning skeuomorphs as a means of strengthening and defining social identities, another common interpretation involving skeuomorphs as competitive tools with the power to affect the discourse between social groups is the position that these objects in the hands of lower status individuals were able to undermine or consolidate the power of the elites within the same community. In one study, for example, Knappett (2002:111) suggests that Minoan ceramic skeuomorphs of metal vessels were created in an effort to subvert the control of the elite, of which metal vessels were an integral part of their identity and status. As the elite were the only ones able to afford metal vessels, the production of ceramic imitations by lower status peoples would subvert the elite’s control over the production and consumption of these status markers by democratizing these items to the masses, and hence, reducing the exclusivity and status of the metal vessels. Thus, skeuomorphs, in this interpretation, were the means of rebalancing power-knowledge relations within the society by transferring some of the power from the elite to those using the imitations.
While there may be an aspect of subversion in the production of skeuomorphs, Taussig also writes of the “terrifically ambiguous power” of imitations (1993:42, 45), that is, of the power of the skeuomorph to “represent and also to falsify” (Howey 2011:331). In their capacity as representatives of the elite, skeuomorphs, it has also been argued, also had the capacity to consolidate the power of a group. In a later work, Knappett (2005:133ff) argues that the elites during the Middle Minoan period were, in fact, using skeuomorphs as a way of reinforcing the social hierarchy of the group. While examining the distribution of all manner of ceramic drinking cups in two primary depositional contexts at the palatial sites of Knossos and Malia, Knappett notes that within each of the deposits, there is a striking hierarchy in the quality of the cups present that range from a large number of crude cups to a small number of the finest cup types (2005:147–154). The finest cups most closely resemble metallic prototypes. According to Knappett, given that each of these cups would have been associated with an individual person—probably during some sort of ceremony involving conspicuous consumption—the scholar concludes that “some facet of Minoan social hierarchies finds itself crystallized in this assemblage” (2005:148). In this interpretation of skeuomorphs, rather than subverting the social hierarchy of the group, it is implied that ceramic imitations of metallic vessels were used in a way to express and reinforce the social status of the members within the group—with those using metal vessels (or their imitations) near the top of the social hierarchy. In this case, then, rather than a way of competing with the elite of the group, skeuomorphs were the means by which lower status individual could participate in a regime in which the elite were favored. Hence, skeuomorphs would have consolidated and legitimized the existing social hierarchy.

Disregarding the difficulties associated with equating status with individual cups within a ceramic assemblage subjectively graded by quality and stylistic merit, Knappett’s equivocation on the role of skeuomorphs as either agents of destabilization or
consolidation for elite groups in two different articles demonstrates some of the problems associated with this interpretation of skeuomorphs. Either these objects reinforced the political hegemony of the elite or they undermined it, but, clearly, they can not be doing both at the same time.

To further demonstrate the ambiguity surrounding the role of skeuomorphs, still another set of scholars—each focusing on ceramic imitations of metal vessels—attribute individual functions and purposes to the various types of copies manifested in the archaeological record, which are types largely defined by their close or vague resemblance to their presumed prototypes (Reeves 2003; Zimmerman 2008; Miller 1993; 1997). While studies of this kind are an improvement on some of the other studies previously mentioned here in that they acknowledge a whole range of skeuomorphic forms and not just the “most accurate,” they, nevertheless, do not agree on the causes for the apparent variety among the copies. Reeves and Zimmerman frame their investigation in terms of skeuomorphism and imitation/emulation, respectively, but believe different mechanisms were responsible for the variation among the copies. Miller, on the other hand, does not regard the different “copies of other objects” as products of imitation per se, but rather as the end result of the degree of receptivity achieved by the prototypes within the community.

In Reeves’ (2003:253–254) diachronic study of metal vessels and skeuomorphs from Anatolia and the Aegean over the course of the Bronze Age, she identifies three groups of skeuomorphs, which she sorts according to their decreasing degree of similarity with their presumed prototypes. According to Reeves, these three groups are thought to represent the results of “a spectrum of effects and devices aimed at achieving a number of strategies” (2003:253). The first group that she identifies, which are characterized as copies almost indistinguishable from their prototypes due to their strong metallic appearance, Reeves likens to “fakes” due to the notion that these objects were intended to
deceive the onlooker into believing they were the “real things.” These “fakes,” she believes, were used in the socio-political arena as either the means of reinforcing the status of elites or, alternatively, in undermining their control, depending on the persons responsible for using/creating these “fakes.” If owned and distributed by the elite, the skeuomorphs were the means of reinforcing the status quo, but, if acquired independently by elites of lower status, the imitations also could act as agents of subversion by undermining the perceived wealth and control of higher status individuals or groups within the community (2003:253). By virtue of their ambiguous nature, these “fakes” had the potential to be both agents of subversion and reinforcement.

The second group of skeuomorphs, according to Reeves, were not created with the intention to deceive. While convincingly metallic in appearance, these imitations were neither exact or near copies of their prototypes. Rather, this group, she believes, were created as substitutes of high status objects for the purpose of emulating the elite in the society. By referencing the higher status metal vessels and, symbolically, the elites that controlled them for political gain, these skeuomorphs, then, were the means of reinforcing the status quo and the values on which society was based. When used by individuals of lower status, these objects, then, allowed these individuals the means in participating in schemes of status acquisition. Thus, rather than undermining the elite, these types of skeuomorphs, then, were created to reinforce the values of the society (2003:253).

The final category of skeuomorphs observed by Reeves are not implicated in any socio-political maneuvering. Rather, these skeuomorphs, which are described as only loosely alluding to metal, are thought to be the effect of a “trickle-down” of elite styles to the general populace, which, when disseminated downward, tend to get attenuated in translation. The skeuomorphs in this group tend to occur in “later periods,” when references to metal had become “part of the grammar of both palatial and the finer
If any meaning can be attributed to these types of skeuomorphs, it is the possibility that these objects may represent a democratization of elite practices (such as drinking wine, for example) that was once the prerogative of a select few. With the exception of this possibility, these skeuomorphs are not thought to have much significance besides representing a generalized enhancement of value by reference to metallic vessels. Thus, according to Reeves’ interpretation of the material, each type of skeuomorph was created for different purposes: as tools for the subversion or reinforcement of the elite by other members of the elite, as substitutes for elite goods by lower class individuals, and as a means of referencing higher value goods by the greater populace. Given the specialized role of each type of skeuomorph and the use of these objects by distinct groups within the society, the implication here, then—although not explicitly stated by Reeves—seems to be that each type of imitation represented a different social group within the society and that the apparent differences evinced by these objects represented the specific objectives of these groups.

Zimmerman (1998) also believes that the differences apparent among the “copies of other objects” are the result of different objectives—but, in this case, she attributes these differences to the intent and objectives of the artists creating the copies. In contrast to Reeves (2003), Zimmerman only identified two different types of copies—one group that she has labelled “imitatio” and the other, “aemulatio.” The terms “imitatio” (i.e., imitation) and “aemulatio” (i.e., emulation), as well as “translatio” (i.e., translation), are terms that have been adapted from ancient Roman sources by modern literary studies scholars to discuss the contemporary reaction to and the adoption of literary styles among ancient writers. Each of the terms represents a different imitative literary or rhetoric exercise. Translatio involved the direct translation of one text into another language, with little change in content to the original text. Imitatio entailed the replication of another author’s literary style (using similar words, sentence construction, turns of phrases, etc.),
but with the addition of modifications to the original text to highlight a change in meaning. Aemulatio was similar in practice to imitatio, but the transformation of the text ran deeper. A successful aemulative text captured the essence of the previous author’s style, but was not constrained by formulaic language. In addition to the looser allusion to the original text, aemulatio also differed from imitatio by the perceived intent of the writer. As one Roman grammarian described the difference, “aemulatio differs from imitatio in that the latter is sincere and admits neither spite nor envy; the former, however, does have the eager application of imitating, but with malice added” (Nonius, *De compendiosa doctrina* 437.5 in Lindsay 1903:703). That aemulatio should be understood as malicious is directly related to the competitive nature of this type of imitation. Derived from the word for “rival” in Latin, “aemulatio” was perceived by the ancient Romans as the successful rivalry of one artist with another. Although competition need not always turn sour, as with any rivalry run amok, malice may be one unintended consequence of the contest between individuals. What Nonius’ definition illustrates is that aemulatio was not a simple imitative exercise; it was actually the end product, using imitation as a tactic, of the competition between artists.

Seeing parallels in the relationship between “imitatio” and “aemulatio” and the differences in appearance among ceramic copies of metal vessels during the Late Classical and Early Hellenistic periods in Greece and surrounding regions, Zimmerman has adapted these literary terms to discuss the intent of the ceramic artist in the creation of the copies. According to Zimmerman, imitatio (or imitations) are “cases in which the artists adopt the overall design of the other kind of craft with minor changes” and aemulatio (or emulations) as “cases in which the artists take up ideas from the other kind of craft for reasons of competition and adapt them to their own principles” (1998:149). In cases of aemulatio, the reproductions are not faithful copies, but retain enough elements of the prototype so that it may be recognized as an homage to the original model, but
also, by virtue of its dissimilarity as well, as a contrast to the model. Within the contrast lies the competitive edge of the artist, or his desire to improve upon the prototype. In Zimmerman’s model, the competition is understood as occurring between the potters and the metalworkers, with each group of artisans striving to outdo the other. As these artisans were each adapting and expanding on the ideas of the other, Zimmerman rejects the notion that ceramic copies of metal vessels were only “cheaper” versions of “more expensive” models. Rather, she sees aemulatio-type ceramic copies as the end result of the mutual exchange between potters and metalworkers. In the parlance of ceramic skeuomorphism of metal vessels, then, Zimmerman attributes different creative intents to the production of near-copies (imitatio) and those copies that only retain some semblance to their originals (aemulatio). Evocative of Nonius’ definition of the difference between literary cases of imitatio and aemulatio, according to Zimmerman, imitatio were “sincere” (i.e., not driven by competition), and that the competition inherent to aemulatio—the more prevalent type of copy—was the driving force behind the evident skeuomorphism among metallic-looking Greek pottery assemblages.4

In a different approach to the previous two scholars, Miller (1993; 1997) does not envision the differences among the “copies of other objects” as the end result of the competition between artists or social groups, but as the product of the different intensities of response to the incursion of foreign goods in a society. Specifically, she details the response by the Athenians in the fifth century BCE to the influx of spoils in Greece after the Persian Wars, of which metal vessels featured prominently. In this study of the receptivity of Persian goods in Athenian society, Miller noticed a difference in the degree of “closeness” between the local ceramic copies and their foreign metal prototypes. These differences, she argues, were the function of three different processes acting upon the

4 While this dissertation agrees with the notion that emulation was the driving force of skeuomorphism, there are apparent differences between the model espoused here and Zimmerman’s model. See below under 2.II for a definition of “emulation” as espoused in this study.
material—“imitation,” “adaptation,” and “derivation” with each group of copies (of the same name) representing, in decreasing order, a different level of social receptivity. Imitations she describes as the most accurate copies of a foreign object, given the limitations in material and manufacturing techniques at hand, adaptations as close copies of foreign forms, but with local modifications allowing for the “difference of use relating to differences in social practice,” and derivations as the least accurate copies, the result of the grafting of “a foreign approach to surface treatment or profile [...] to a traditional local form” (Miller 1997:136).

According to Miller, derived forms were the result of a gradual evolution of local forms due to the extended exposure to foreign elements in the society over time (1997:147–150, 151). At this stage, the incorporation of these foreign elements had by then become a matter of fashion (i.e., a shift in taste) rather than any attempt to consciously imitate any precise foreign form. As a generalized response to foreign goods, derivations were representative of the least degree of receptivity of foreign goods in the society. In contrast, imitation and adaptation represented an active or informed reception of goods, whereby artisans were aware of the original model and made the conscious decision to either reject, adopt and/or modify the prototype to suit societal practices (1997:136–146, 151). Whether artisans decided to reject, incorporate, or adapt the foreign goods was predicated on the society’s “readiness” to accept the goods and on the specific “needs” of the community (Miller 1997: 243–258). For example, Miller argues that, faced with increasing social complexity within its own society, one of Athens’ needs was to broaden its own lexicon of status paraphernalia to mark the emerging social ranks (1997:248). Thus, the Athenians adopted a number of luxury Persian goods as their own indicators of wealth and status. At the same time, loathe to give too much symbolic power to a foreign nation, the Athenians adopted a number of strategies to “tame the alien” within their society (1997:248–250). Most of these strategies involved modifying
either the usage of the foreign model (e.g., adding handles to metal vessel copies to conform to symposia aesthetics) or changing the context in which the model was originally used (e.g., Persian parasols once used by men now employed by Athenian women). Thus, due to this “filtering” of foreign goods through a cultural lens, of the two processes connoting a high level of receptivity, adaptation, rather than imitation, was by far the most prevalent. Of the two, however, Miller considers imitation as the most integrative response, as the lack of modification to the model would suggest that social practices were also adopted along with the object, denoting a high degree of acceptance by the community (1997:151).

As the three models for explaining the apparent differences among the ceramic copies of metal vessels illustrate, there is, as yet, little consensus on the causes of imitation or on the meaning of the various manifestations of the imitation process apparent in the archaeological record. Reeves (2003) seems to suggest that the variable differences observable among the different types of copies were the result of status maneuvering among contemporary social groups within a community; Zimmerman (2008) attributes the differences in copies to the intent of artisans working in different media to outperform each other; and Miller (1997) views the various copy types as the end result of the degree of acceptance afforded to foreign goods within a society. Even with such divergent theories about the cause of the variety in types of copies, nevertheless, similarities in the material do emerge from the different accounts.

Perhaps the most significant similarity in each scholar’s account of the imitation in ceramic of metal vessels is the cognitive grouping of copies into two or three categories based on the perceived “accurateness” of the copy to the model. Both Reeves (2003) and Miller (1997) recognized three groups of copies: almost exact copies, hybrid forms, and derived or devolved forms. Although Zimmerman (1998) did not distinguish between hybrid and derived forms, she too emphasized the distinction between near-exact
IMITATIONS AND OTHER TYPES OF COPIES. THE FACT THAT EACH SCHOLAR WAS ABLE TO OBSERVE SIMILAR GROUPS OF COPIES WITH VARYING DEGREES OF METALLIC ATTRIBUTES IS SIGNIFICANT FOR TWO REASONS. FIRST, IT REAFFIRMS THE FACT THAT SKEUOMORPHS WERE NOT ALL CREATED EQUALLY. INDIVIDUAL SKEUOMORPHS MAY FALL ALONG A SPECTRUM OF COPIES WITH VARYING DEGREES OF “CLOSENESS” TO THE MODEL AND ARE NOT JUST LIMITED TO THE MOST ACCURATE COPIES—A NOTION THAT IS NOT ADDRESSED IN MOST STUDIES OF TRADITIONAL “SKEUOMORPHS.” SECONDLY, IT SUGGESTS THE POSSIBILITY THAT, RATHER THAN MANY INDIVIDUAL FACTORS, PERHAPS THE SAME PROCESS WAS ACTING ON THE DIFFERENT POTTERY ASSEMBLAGES (FROM VARIOUS TIME PERIODS AND GEOGRAPHICAL REGIONS) WITH COMPARABLE RESULTS.

REGARDLESS OF THE DIFFERENT INTERPRETATIONS OF THE MOTIVATIONS UNDERLYING THE COPYING OF VARIOUS OBJECTS, THE \textit{de facto} PROCESS INHERENT TO EACH STUDY IS THAT OF IMITATION. MIGHT THEN THE PROPERTIES OF IMITATION ITSELF BE RESPONSIBLE FOR PRODUCING SIMILAR TYPES OF COPIES AMONG SUCH DIVERSE POTTERY ASSEMBLAGES? ARGUABLY, ONE OF THE CHARACTERISTICS OF THE IMITATIVE PROCESS IS THE INTRODUCTION OF “ERRORS” THROUGH REPEATED REDUPLICATION. “ERRORS” OCCUR IN GENETIC REDUPLICATION AS MUTATIONS, AS MODIFICATIONS IN THE MESSAGE DURING THE REPETITION OF AN IDEA OR MESSAGE, OR EVEN AS UNCONSCIOUS “SLIP-UPS” DURING THE TRANSCRIBING OF A TEXT, FOR EXAMPLE (THE IMITATIVE PROCESS IS DISCUSSED FURTHER BELOW). THE GREATER THE FREQUENCY OF REDUPLICATION, THE GREATER THE POTENTIALITY FOR “ERRORS” TO SEEP INTO COPIES OVER TIME. Thus, there is also a loss of accuracy (vis à vis the original model) over time as well. If this reduplicative process is a constant in the surrounding environment, it should also apply to the imitation of material culture as well. If this is so, then one should then be able to see the decreasing accuracy in the ceramic copies over time in the archaeological studies presented here. There are suggestions that this is so. OF THE THREE STUDIES CONCERNING THE CERAMIC IMITATIONS OF METAL VESSELS, AT LEAST TWO OF THESE SUGGEST THAT THE IDENTIFIED GROUPS OF COPIES WERE PRESENT AT DIFFERENT CHRONOLOGICAL STAGES. THIS EVIDENCE IS CLEAREST WITH DERIVED FORMS. BOTH OF THE SCHOLARS THAT RECOGNIZED A GROUP OF
derived forms (the least accurate copies) also noticed that these objects occurred in “later periods.” Both Reeves and Miller perceived these objects as the result of a passive process that occurs with the passage of time, either as a “trickle-down” effect of elite styles into the society at large over time (Reeves 2003:254) or as “shift in taste resulting from sustained contact with a foreign tradition” (Miller 1997:136). In both cases, as well, by the time derived forms enter the material record, there is a perceived shift in matters of taste and fashion among the members of the society, who may no longer have been conscious of the original models that engendered the imitation in the first place. If derived forms were a later development conditional only on the factor of time, might the other types of copies also reflect their chronological relationship with the original prototype as well? Logic would indicate that if derived forms occurred two or three generations after the initial copies, then exact copies and hybrid forms would necessarily occur at an earlier time. This is intimated by Miller’s observations of the timing of the first instances of what she calls imitations and close adaptations of Persian metal wares at Athens. She noted that the earliest imitations occurred at the end of the sixth century BCE—in a period contemporary with the earliest contact with Achaemenid culture in Asia Minor—and that the process of adaptation increased in quantity and variety from the second quarter of the fifth century BCE with the greater exposure to Persian spoils, and expanding appreciably thereafter (1997:146). Therefore, according to the evidence collected on the ceramic copies of metal Persian wares, direct copies and close adaptations occurred first, presumably spurred on by initial contact with foreign goods, hybrid forms appeared shortly thereafter, increasing in number and variety over time, and derived forms begin to appear a few generations later. What this suggests is some form of causal relationship between the “accuracy” of the copy and time elapsed away from the first contact with the original model due to the replication of copies of copies. This relationship, then, seems to conform well to the principles of the imitative process, which predicts the lessening of accuracy of copies in regards to the original model over time.
Perhaps, then, rather than representing “a spectrum of effects and devices aimed at achieving a number of strategies” (Reeves 2003:253), the exact, hybrid, and derived groups of copies may actually represent different chronological stages of the same imitation process, only appearing to be contemporaneous in some cases due to the static nature of the archaeological record, which can appear to “compress” time from a modern perspective, depending on the fineness of the dating methods used to measure it.

If, then, the differing groups of copies observed among the various ceramic assemblages presented in these three studies only actually represent different chronological stages of the same imitation process, wherein does the significance of skeuomorphs actually lie, if not in their varying physical manifestations in the archaeological record? What many scholars working with skeuomorphs have intuited is that the significance of these objects resides in understanding the motivation, or the impetus, for the imitation of any object. Although usually expressed as the functional role of skeuomorphs, some of the motivations proposed for the initial imitation of an object has included: resistance (Harrison 2002) or competition among social groups (Knappett 2002; Reeves 2003); competition between artisans (Zimmerman 1998); understanding new technologies (Taylor 1999; Wengrew 2001; Hurcombe 2008); the need to incorporate foreign goods into society (Miller 1997); and the economic need to substitute high status goods (Negbi 1978; Sherratt 1980:196–197; Vickers 1985; Artzy 1985:136; Cadogan 1991:169; Vickers and Gill 1994; Åström 1998:263; D’Agata 2000). With such diverse interpretations, there is no wonder that the significance of skeuomorphs is somewhat misunderstood. It is possible, however, to encompass all of these functional roles so far attributed to skeuomorphs in the previous literature as well as take into account the spectrum of imitative copies in the archaeological record with the answer to one simple question: what value does the object hold to the person doing the imitating? Whether the object is a metal vessel, a basket, a stone blade, a foreign import, there is no
imitation (or skeuomorph) unless someone has a desire to copy that object. This desire necessarily precedes all other action, providing the spark that initiates the imitation process. Emulation is hereby considered to be that spark.

The idea that emulation was the motivation responsible for the creation of skeuomorphs is elaborated further in the sections below. In section 2.II, a new definition of a skeuomorph is offered, one that elaborates on the character of these objects, on their role and function in relation to their prototypes, and on the manner in which they were likely to proliferate and disseminate into the society at large. These ideas are then formulated into a theoretical framework in section 2.III with the expressed goal of creating a model to allow for the identification of skeuomorphs in the archaeological record (section 2.IV). This will allow the groundwork for the chapters to follow, whereby the ceramic imitations of metal vessels from Knossos and Phaistos are examined in light of this model.

2.II DEFINITION OF A SKEUOMORPH

In the previous section, various interpretations in the archaeological literature concerning the significance of skeuomorphs were outlined. The definition of skeuomorphs proposed here addresses this problem by offering a new interpretation based on the guiding principle that emulation was responsible for the creation and propagation of all these objects. Not only does the concept of emulation provide an explanation for the imitation of particular kinds of objects, the peculiarities of the emulative/imitative process also manages to embrace under its aegis the variety of functional roles attributed to skeuomorphs in the previous literature as well as help explain the variety of copy types in the archaeological record. It is a concept that provides a more meaningful role for skeuomorphs. Thus, skeuomorphs as defined here, then, are substitutive proxies made from different materials and/or by different manufacturers that meaningfully emulate
another *valued* object of the same *function* for the purpose of *evoking* the properties of the original through the use of specific *markers* inherent to the prototype. In addition, the degree of similarity between the skeuomorph and its prototype is conceived as the end result of *chronological factors* within a single process, or cycle of emulation and imitation, rather than as the result of different functional goals.

Naturally, the ability of skeuomorphs to evoke another object is entirely owing to the imitative features bestowed on them. Without these imitative *markers*, there is little to differentiate a skeuomorph from other kinds of objects, such as *functional parallels*, for example, which are, by all intents, copies of other objects, but not skeuomorphs (more on these categories of objects below, 2.III). The markers are important as they denote their intent to refer to another object. As objects that refer to other objects, skeuomorphs act as signs that are, very generally, things “that stand in for something else (the referent)” (Knappett 2005:89). The meaning of the sign resides in the type of associative relationship between the sign (the skeuomorph) and its referent (that which it emulates). Skeuomorphs can be said to derive their significance as icons and indexes (Knappett 2002; 2005:85–100). Icons are types of signs that share a mode of connection based on similarity, whereas indexes share a contiguous, causal, or performative relationship with the referent (see Knappett 2005:85–100). Superficially resembling their prototypes, most skeuomorphs can be considered iconic signs. In some cases, however, when there is a causal relationship between a skeuomorph and its prototype, such as, for example, the pressing of clay into a mold to produce an imitation of a basket vessel, some skeuomorphs may also act as indexical signs of their prototypes as well (Knappett 2002:15). As indexical signs, these latter types of skeuomorphs, which perforce evince a strong relationship between them and their models, naturally, allow for a high degree of confidence in their reliability to accurately personify their prototypes. This reliability has been tested in archaeological studies with favorable results. Various scholars have
successfully re-constructed prehistoric basketry techniques and basket vessels through the aid of archaeological samples of ceramic skeuomorphs of baskets and experimental archaeology (e.g., Reynolds 1999; Hurcombe 2008). In the case of skeuomorphs of the icon type, which only display a physical semblance to their prototypes, there is, as yet, no evidence to suggest the strength of the relationship between icon and referent, or, as a consequence, of their reliability in reconstructing “lost” artifacts from archaeological contexts. As will become apparent, iconic skeuomorphs (at least those produced in the first occurrences of emulation) can be just as useful in reconstructing the appearance of extant artifacts.

As signs, skeuomorphs, invested with features characteristic of the prototype (either through design or through forced contact with the original) share the same “look” as the original. This “look” is a necessarily a very subjective term that is predicated on markers, or cues, of the imitation that are, quite often, symbolic or “non-practical” in their skeuomorphic incarnation (think of a clay rivet). Yet, a cognitive link is established between an object and its copy despite these symbolic features, even to the degree that skeuomorphs—in most cases, evidently not made from the same materials as the original—are able to replace or act as functioning substitutes for the original model. How a person makes this cognitive link and readily accepts a patently “non genuine” object for the “real thing” is a concept that has been explored in modern marketing and psychology.

Modern marketers have expended much thought on the psychological forces surrounding brand imitation, and so, even though the principles of marketing are, perforce, related to the buying and selling of products on the “market” in a capitalistic system—a system that can not be proven for the Bronze Age—studies concerning the perceptions and psychology of the “consumer” in relation to a “product” or “brand” vs. the product or brand’s imitation may still be applicable if the word “brand/product” is replaced with the word “object.”
A brand is a person, idea, or object that uses cues to conjure in the mind of the consumer a certain set of signified concepts. An object’s distinctive cues include features such as “name, style of lettering, background, shape, symbols, color, and Gestalt, or the general look” (Zaichkowsky 1995:2). Instead of spending much money and time on establishing a new brand, an imitator seeks to capitalize on the already well-established reputation and good name of the original brand. By manipulating the features of his product to resemble the original brand, the imitator creates a mental association between his product and the original. The product need not be exactly alike. The consumer could be aware that the two products are not the same, “[he] only has to draw similar inferences from each based on the distinctive features that are common to both items” and he will buy the imitation (Zaichkowsky 1995:6).

How the consumer comes to the conclusion that both products are similar can be partly explained by the psychological concept of stimulus generalization (Pavlov 1927). This concept explains how an individual will relate in his mind (or generalize) an incident or stimulus with another familiar incident or stimulus through repetition and conditioning. A consumer will tend to generalize about a product if it has similar features to another well-known product. Studies have confirmed this practice in consumer behavior. When asked to compare generic brands and national brands that looked alike, the respondents in one study used the external cues of the package to make a generalized conclusion about the contents inside the package. Even though the content of the imitator’s product was different from the original, the respondents thought that both products had come from the same manufacturing plant, rating them the same in quality and perceived performance (Loken et al. 1986; Ward et al. 1986). The consumers had generalized from the appearance of the package to the contents inside. In this case, the customer is aware that there are two different products, but knowingly chooses the imitation because of the perception that they are alike.
Sometimes, however, the consumer might confuse an imitation for the original and buy the imitation by mistake. In this case, it is not generalized stimulus that is to blame, but perception and the lack of attention (Zaichkowsky 1995:37). For the consumer to differentiate between two products, the cues (or attributes of the object) must first be perceived. How individuals perceive an object has less to do with the environment than with the individual’s interpretations of sensory perceptions. An object is often perceived through the lenses of “experience, familiarity, or anticipation” (Zaichkowsky 1995:42); therefore, sometimes when a person’s attention is not focused, the individual features of an object are registered, but they are rearranged in the mind to coincide with what the person thinks is the most logical order between them, leading to illusory conjunctions (Treisman and Schmidt 1982). In other words, sometimes, a person “sees what he wants to see.” An object’s shape and color appear to be the most susceptible features to be wrongly interpreted (Zaichkowsky 1995:43).

The ability of skeuomorphs to acquire these attributes is likely rooted in the concept of Gestalt psychology (Ehrenfels 1890; Wertheimer 1912; Koffka 1935; Köhler 1947). The whole premise of this branch of psychology is that individuals do not experience discrete stimuli as separate sensations (as the parts are meaningless in themselves), but tend to organize the sensations into groups, perceiving them as unified wholes. Only as a whole do the stimuli take on meaning (Köhler 1947:120). One example of this principle is that an individual does not perceive an object in isolation, but contextualizes it within its surroundings (or the whole to which the stimulus belongs). Another important Gestalt organizational principle is the tendency of the mind to automatically group discrete bits of information into a unified picture, impression, or pattern (Robertson et al. 1985). This increases the brain’s ability to recall overall facts and make sense of stimuli. One side effect of this principle is that it is easier for an
individual to remember the overall “look” of an object, but not the relevant details
(Zaichkowsky 1995:44). Furthermore, a person is likely to make connections between
features that may not be there. The mind tends to make these links according to four types
of perceptual organizations of Gestalt: similarity, proximity, continuation, or common
fate\(^5\) (Robertson et al. 1985). In terms of an artifact and its skeuomorph, the most
applicable perceptual principle is “similarity,” as the two objects are more likely to be
perceived as alike based on physical features such as size, color, decoration, specific
details, silhouette, etc., than from any spatial or temporal characteristic. As visually
“similar” in the mind of the viewer, the material of the ceramic skeuomorph takes on less
importance than its overall “look.” Therefore, even if the viewer was aware that the
skeuomorph was “not real,” in his mind the connotations of the original (such as cachet,
prestige, status, for example) would have been the same (or close enough). In this way,
then, skeuomorphs were able to act as stand-ins for the metal vessels, even taking on
some of the cachet of these objects (more on “envaluation” below).

What constitutes “similarity” is, again, a subjective endeavor, but, arguably, one
may perhaps qualify this trait by the number and quality of superficial cues invested in
the skeuomorph. In other words, the more formal attributes it shares with the prototype,
the likelier the skeuomorph will manage to evoke the properties of the original. This can
be illustrated by modern day knock-offs and counterfeits of luxury brand objects. A very
close imitation of a Rolex watch may share the same coloring, logo, watch face, and fine
superficial marking of a real Rolex model, but not the same internal watch mechanism or
gold material. This counterfeit skeuomorph may even pass as a real Rolex at a glance. A

\(^5\) The law of similarity states that objects sharing similar visual elements will appear to belong together.
The law of proximity refers to the physical distance between objects. Two objects found closer together
are perceived as more alike than those found far apart. The law of continuation states that objects
spatially following a straight or curved line will appear to belong together. Common fate refers to the
perception that objects moving in the same direction will seem to belong to each other.
“not so accurate” knock-off may have generalized (or inaccurate) markings and coloring, will probably be missing some of the finer details, and will probably not refer to a specific model of Rolex watch. One might just have an “impression” of a Rolex from the imitation, perhaps, if one was aware of what the original looked like. The “look” in this case would be diluted by its general attributes. Naturally, the knock-off watch with finer, more accurate details is more evocative of the original. It also stands to reason that the imitation with the finest details is also the one that, most likely, resembles a very specific prototype. After all, to pass as the real thing, the counterfeit needs to resemble as closely as possible a genuine example of what it is copying. Thus, by extension, the most “accurate” skeuomorphs, then, would be ones modeled on specific prototypes as well.

In addition to sharing a similar “look” with its prototype, one of the characteristic features of skeuomorphs is the fact that these objects also share similar functions and purposes as the original models. Skeuomorphs can be said to occupy the same “function” as their prototypes, if function can be defined as the action a thing is particularly intended for given its affordances and constraints. In other words, function delimits the actions an object is allowed to do. Function is differentiated from “purpose,” which is a notion that encapsulates the meaning of function (intended role + affordances and constraints) within its own meaning, but also takes into account the settings in which an object is used and the intention of the user to perform a certain action. Thus, for example, the function of a screwdriver is to drive screws into other things, but its purpose (at any given time), such as lifting the lid of a paint can or removing flecks of paint from a wall, may change according to its context and the objective of the user.

The function of an object is very much conditional upon its structure, material, and affordances. The meaning of “affordances” has undergone many revisions since the term was first coined by Gibson (1977; 1979) to discuss all the inherent “action
possibilities” of things within an environment, but, the one constant in the literature has been the need to differentiate between “real affordances,” i.e., the physical properties of an object that allow its proper operation, and “perceived affordances,” those characteristics in the appearance of an object that provides clues to its proper operation (Norman 1990; 1999). While skeuomorphs can not be said to always share the same real affordances as the prototype—given that the material in which the skeuomorph is made does affect these attributes and given that some of the features of the skeuomorph are more symbolic than practical—perhaps one can say that these objects do share the same perceived, or cognitive, affordances. Hartson (2003:319) defines a cognitive affordance as a “design feature that helps, aids, supports, facilitates, or enables thinking and/or knowing about something.” While it is true that cognitive affordances are generally used to refer to actual working attributes on a object (such as a volume switch with “on” and “off” labels) that provides the user with an idea of how to use an object, skeuomorphic features literally “enable the knowing about [the proper operation] of something” specifically because they provide visual clues to the physical properties (and, hence, real affordances) of the prototype and, therefore, clues to the proper operation of the original model (and itself) as well. Thus, a skeuomorphic “on/off switch” seen on a computer screen may not have the same real, or physical, affordances as the original analog switch, nevertheless, it does provide clues to the user that clicking on the digital “switch” performs the same action as the original switch. More materially-based examples might be modern buckles on shoes or the vestigial handle on some maple syrup bottles. These features (the buckle, handle) are symbolic attributes on the skeuomorph in that they no longer work in the same way as the comparable features on the original models, but they...

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6 See Hartson 2003:317 and table 1 for a comparison of affordance terminology in the prevalent literature.

7 Hartson (2003) prefers the terms “physical affordances” and “cognitive affordances,” respectively, to refer to Norman’s (1990; 1999) concepts of “real” and “perceived” affordances, terms which seem better suited to the properties of each.
clearly provide clues to the proper functioning of the original model (in these cases, buckles that actually strapped leather together on a shoe and handles on stone ware jugs that were used to pour maple syrup). As objects that share the same cognitive affordances as each other, skeuomorph, then, can be said to have the same “possibilities of action” as their prototypes.

In addition to sharing the same “possibilities of action” as their prototypes, skeuomorphs also occupy similar roles as the original models; that is, they are used in a similar manner for the same intended purposes. Purpose—as defined earlier as conditional on the function of an object, the objective of the user, and the context in which the object is used—allows for the transition from potentiality of action to actual performance. That skeuomorphs share the same purposes as their prototypes can be illustrated by the following examples of pair of objects that “look alike,” but which are not generally considered skeuomorphic and proper skeuomorphs. Many pairs of objects do share visual similarities with each other. Consider the examples of blocks of soap that look like lego blocks and salt and pepper shakers that look like batteries ([1:1] and [1:2]). From a purely superficial perspective (without preconceived notions of purpose), the soap block and the shakers may appear at first to be skeuomorphic: they are made from different materials than their originals and they have some features that evoke the properties of their purported prototypes. What differentiates these pairs of objects and proper skeuomorphs, however, is the manner in which the soap or the soap blocks are used. The pair of objects do not have the same function (i.e., the manufacturer created the copies with different possibilities of use), and the circumstances in which the pairs of objects are likely to be used would be also different than the settings in which the original models would have been used. There is little doubt that the bar of soap (made for washing) or the salt and pepper shakers (meant to hold spices) would not have acted as functional substitutes for the lego block (meant for building) or for actual batteries.
(meant for providing a source of energy), respectively. These objects are visual metaphors and fall under the purview of artistic license. Skeuomorphs, on the other hand, always occupy the same roles as their prototypes. For example, a skeuomorphic knock-off of a Gucci bag occupies the same role as a real Gucci bag, a dummy ceramic juglet in a grave stands in for a real alabaster juglet, the plastic boards of a boat with “wood grain” patterning is used to support the boat in the same way as real wooden boards, and a digital volume switch performs the same role as its analog precedent.

As these examples demonstrate, because skeuomorphs occupy similar roles as their prototypes in the same kind of settings, and also because these objects are not, in fact, the “real things,” skeuomorphs, therefore, by force take on the role of substitutes for the original objects. Not just any substitute, but, specifically, a proxy. Proxies are defined as agents that act on behalf of another person (or thing). They carry enough authority to act in the stead of someone (or something) else, but their role is largely symbolic in nature. Consider the example of the Governor General of Canada who acts as the proxy of the Queen of England, the nominal head of the country. The Governor General acts as the representative of the Queen, symbolically taking her role in Parliament by carrying out the monarch’s constitutional and ceremonial duties. This representative is invested with some of the authority, precedence, and symbols of state of the Queen, but, as a proxy of the “real thing,” the Governor General’s authority is conditional on the society at large willing to accord him this “power.” In other words, his authority stems not from his physical person, but from his symbolic role.

Skeuomorphs are in a position to act as proxies due to their dual natures: as symbolic objects that are nevertheless able to act on behalf of other objects. That skeuomorphs are invested with symbolic qualities is not difficult to discern. One of the
defining characteristics of these types of objects is the presence of features that either do not have a purpose other than evoking the formal structure of its prototype or that may actually be detrimental to the proper functioning of the imitation (e.g., clay ribbon handle). These largely symbolic features exist by virtue of the fact that skeuomorphs are more often than not constructed from different materials than those of the original models. As objects made from different materials, some of the physical attributes of skeuomorphs—which, on their original models are vital to the structure of the object—serve no practical purpose or actually hinder it. At other times, skeuomorphic features may be vestigial, that is, rendered non-operational. It is not the “real thing,” but symbolically fulfills the same role as the original for a different group of persons. Just like the Governor General of Canada standing in as the proxy of the Queen of England, however, the “authority” of the skeuomorph necessarily stems from the agreement of those using it that it has the same (or near same) cachet as the original model. In conceiving of the skeuomorph as a proxy, then, the paradox of the skeuomorph—that is a “non-practical” object that can perform the same function/role as its prototype—can be resolved.

As proxies of other objects, what distinguishes the skeuomorph from the prototype in the manner in which both types of objects are used, therefore, is not the role that they play, but the “audience” who uses them. A perusal of the archaeological literature (and modern observations) indicates that all skeuomorphs occur on the boundaries between two disparate social and technological worlds: a) at the interface between technological transitions (Nakou 1995:13–14; Wengrew 2001; Hurcombe 2008; Frieman 2010b); b) at the point of interaction between socio-economic groups (Rawson 1986; 1989; Watson 1986; Vickers 1986; Vickers and Gill 1994; Verhaeghe 1991); c) at the boundaries between foreign goods/ideas and local peoples (Vercouther 1956; Smith 1965; Crowley 1989; 1998; Warren 1995; Miller 1997; Phillips 2008; Howey 2011); d) at
sites where the living and dead interact, such as cemeteries and graves (Negbi 1978; Rawson 1986; Retger 2003; Hurcombe 2008:107); e) at the point that gods and mortals meet in sacred spaces (Hankey 1981:109–110, 115; 1993:104; Leonard 1981:90–91), and f) in spaces where buyers and sellers meet such as markets or other trading locations (Artzy 1985; Sherratt and Sherratt 1991; Cadogan 1991:169; Åström 1998:263; D’Agata 2000; Bergoffen 2006).

As this list illustrates, skeuomorphs occur at the point of juxtaposition between various dichotomous social groups (foreigner:local, elite:sub-elite, living:dead, mortals:divine, sellers:buyers) or at the transition between two disparate technologies (new:old technologies). What characterizes these sets of groups in terms of accessibility to material goods, perhaps, is the notion that one set of individuals in each group can be described as those who have access to certain objects (foreigners, elite, the living, mortals, sellers, individuals using new technologies)—be they luxury goods, foreign objects, or novel products—and those who do not (locals, sub-elite, dead, divine, buyers, individuals with old technologies). Skeuomorphs exist on the boundaries of the interaction between these social groups precisely because they address the perceived problem of the shortage of goods by one side of the divide by bridging the gap between those who have access (“haves”) or do not have access (“have-nots”) to the original prototypes. In other words, skeuomorphs are seemingly created to fill a need by “have-nots” for goods deemed desirable or valued within a community. It is not always those lacking these desirable goods that manufacture the objects, however, although those that use skeuomorphs seem to be the targeted “audience.” Thus, for example, knock-offs of luxury items are mainly marketed and used by the middle classes (Berg 2002), dummy objects are placed in tombs for the dead (Lansing 1941) rather than kept and used by the living, and high status foreign goods are copied by local peoples (Nakou 1995:13–15). The possible exception to this list, however, are examples of “deceitful” skeuomorphs,
here called “counterfeits,” which may be intentionally “passed off” as originals to members of the same social groups that use the prototypes (see also section 2.III).

It stands to reason that if skeuomorphs are seemingly created to fulfill the needs of different individuals for various objects, there must be an underlying desire for these objects. Furthermore, if a desire to copy something exists, then the object in question must hold some value to the one doing the imitating. Otherwise, why bother spending time and resources reproducing something if there is no merit in the endeavor? The underlying desire to reproduce some thing of worth can be encapsulated in the concept of emulation.

Emulation is defined as a process that figuratively “looks upwards” in an effort “to match or surpass (a person or achievement), typically by imitation” (OED, “emulate”).\(^8\) It is the spark that engenders the imitation of another object. As emulation is a desire to match the efforts of another, to emulate, therefore, implies seeing something of worth, utility, or desirability in the original prototype—what may, perhaps, be termed an object’s value within the society. Without that original desire, there is no skeuomorph. An object’s value need not only represent its intrinsic worth. Value may also stem from the idealized qualities, iconic status, function, or perceived prestige of the original prototype. What is important to note is the an object’s value necessarily stems from an emic perspective, as it is the society doing the emulating that decides what objects or features are deemed appropriate for reproduction. Each society produces its own kinds of skeuomorphs. Suffused as they are with markers signaling the desirable characteristics of their prototypes, skeuomorphs, then, are the embodiments of the objects or qualities a

\(^8\) Even if the imitator is aware that he may not be able to exactly replicate the object in the same way, the definition here only takes into account the desire of the imitator to produce a close likeness due to his appreciation of the original.
particular society admires and idealizes. As such, skeuomorphs can provide some invaluable information about the value system of past societies.

Even though each individual set of skeuomorphs represents culturally specific decisions, a survey of past and present skeuomorphs has shown that the objects inspiring these imitative objects can generally be divided into two groups based on the sets of values that they represent. In general terms, the values espoused by each group can be encapsulated, respectively, as a) the prestige value of a group of objects and b) as the value of objects in embodying some quality of the past (such as, for example, older technologies, artisanal methods, or specific traditions). The skeuomorphs ensuing from the emulation of these groups of prototypes have been hereby labelled as “aspirational” and “preservational” in reflection of the value sets of each group.

Aspirational skeuomorphs are, perhaps, the most common types of skeuomorphs. These are imitations of high status goods and objects that are imbued with a sense of prestige, either through association with high status individuals and/or by their connotations of “coolness,” “good taste,” “chicness,” or “luxury” for example. The value of the prototypes in this case may be the intrinsic cost of the object, its beauty, rarity, novelty or any other trait that may be factored in its status. The emulation of these objects stems from what René Girard has characterized as the imitative character of desire, or a tendency in human nature whereby most desires, when not meeting a simple need or appetite, seem to be aspirational goals, both predicated by the desire to own what others have and also by the wish to be closer/become the persons owning the original things (Girard 1966). Thus, while the target of emulation may vary from community to community (for example, specific brand names associated with celebrities that appeal to a generational subset of the society but not to another generation), the overarching desire to emulate prestigious goods seemingly appears to be a universal goal in schemes of status.
maintenance and acquisition. Therefore, aspirational skeuomorphs are generally found in contexts in which status display is an importance use of the space. As most high status and prestigious goods are difficult to obtain (either through rarity, cost, or conscription laws) and beyond the reach of most individuals, aspirational skeuomorphs tend to be less costly reproductions with a similar “look.” In this case, the object is made from materials that are more readily available, that generally cost less, or that may involve less labor and time in its construction. The exception to this are counterfeits, which are largely aspirational, but sometimes made from comparable materials as the original models. Examples of aspirational skeuomorphs include modern examples of brand-name knockoffs, ceramic imitations of luxury materials (Ben-Dor 1944–1945; Foster 1989), especially metal vessels (Rawson 1986; Watson 1986; Vickers and Gill 1994; Verhaeghe 1991; Reeves 2003), and local imitations of foreign goods (Bell 1983; Prag 1985; Phillips 1991; Emerson and Chen 2000; Berg 2002; Regter 2003).

The qualities and values reflected by preservational skeuomorphs are, perhaps, less obvious than those of aspirational skeuomorphs. Taken as a group, however, the common factor among all of these imitations is the seeming desire to preserve some aspect of the past or to evoke some idealized qualities associated with traditional technologies and methods. The first indication that these types of skeuomorphs do not behave in the same manner as aspirational imitations are the materials in which some of them are made. Whereas aspirational skeuomorphs are mainly made from less intrinsically expensive materials (with the possible exception of some counterfeits), some preservational skeuomorphs are made from more expensive materials than the ones used for the original prototypes. Consider some of the decorative features of the Parthenon in Athens. Although made from the finest marble in the Classical period (ca. fifth century BCE), some of the features of the Parthenon still retain some semblance to the original structures of earlier wooden temples that no longer survive. For example, the rectangular
blocks under the cornice of the temple (the mutules) are studded with round guttae. The
mutule is thought to represent the piece of timber through which the wooden pegs
(guttae) were driven in order to hold the rafter of the roof in place. Although no longer
functional, the guttae and the mutules evoke a time past when wooden beams were used
in the construction of temples. In this example, where the skeuomorphic marble “beams”
are made from more expensive materials, one must ask what iconic or ideological/
idealized value the original prototype held to the ancient Athenians. Arguably, the value
of the skeuomorphic features in this case was not the status of the wooden beams, but
rather, their connection to a time past, traditional technologies and values, and, perhaps,
their ability to evoke a sense of appropriateness that “wooden beams” were still used in
the temple. Used in a sacred space, these skeuomorphic features were able to evoke the
ability of the gods to transcend time and space.

Another example of an object made from lesser materials into more expensive or
difficult to acquire materials can be illustrated by the release of a Monopoly game board
on the occasion of its 60th anniversary, which is now housed at the Smithsonian Museum
of Natural History. This particular board game is made entirely of gold, diamonds, rubies
and sapphires. In origin a simple board game made from cardboard and tin gaming
pieces, cheaply produced and accessible to many, this particular Monopoly game
seemingly overturns the commonly perceived notion that skeuomorphs are necessarily
rendered in cheaper materials. Some “cheap” objects may find themselves emulated in
more expensive materials, but, as this particular board game illustrates, it is unlikely that
goods originally made from less expensive materials will be emulated unless they accrue
some other form of value within the society. In this particular case, the Monopoly board
game took 60 years to achieve beloved iconic status within the Western world before it
was emulated in precious materials. To achieve iconic status, an object must be seen to

9 see http://www.mnh.si.edu/exhibits/mobell/monopoly.htm
represent/symbolize something of the character of the society which spawned it. Monopoly happens to promote many of the values admired by an industrialized Western society, such as “fun,” “acquisition of money and property,” and even “capitalism.” Thus, Monopoly represents more than a just a board game, it is a game—now enshrined in a museum—that represents a whole community’s values and ideals.

Not all preservational skeuomorphs are made in more expensive materials than the ones used for their prototypes. Many digital skeuomorphs that emulate analog objects (e.g., the audible “shutter click” of digital cameras), for example, are preservational. What defines these types of skeuomorphs, such as, for example, the vestigial handle on some maple syrup bottles or the emulated “leather stitching” on some plastic car dashboards, is the fact that they connote some idealized qualities of a time past, such as quality handmade craftsmanship, a “homey” feeling, or, in the case of the syrup bottle, perhaps, even an idealized rural lifestyle of times past. What distinguishes these types of skeuomorphs is their fixity. They do not change (or very little) over time, frequently preserving the formal features of an object at the moment that that object or that technology was first introduced. For example, the floppy disk icon on certain computer programs to indicate “save” reproduces the first method of saving files onto commercial computers even though more advanced technologies for saving files (such as CDs or hard drives) have been introduced since the introduction of the physical floppy disk. And yet, the icon of the floppy persists (as do the icons for “cutting” and “pasting”—earlier technologies that involved the actual physical cutting and pasting of text). Preservational skeuomorphs are then, the equivalent of textual palimpsest, except that they represent the superimposition of old and new technologies in visual form.

By considering the value of emulated objects, then, it has been possible to access some of the reasons underlying the production of skeuomorphs. These reasons differ from
the specialized interpretations of the function and purpose of skeuomorphs offered in the archaeological literature. As outlined above (see section 2.1), these theories generally fall into three camps: scholars either see skeuomorphs as objects used in competitive schemes among various social groups (Harrison 2003; Knappett 2005:147–148; Reeves 2003; Zimmerman 1998), as tools to understand and integrate new technologies and foreign goods within the society (Taylor 1997; Miller 1997; Wengrow 2001; Hurcombe 2008; Freiman 2010b), or as economic substitutes for high status goods (Negbi 1978; Sherratt 1980:196–197; Vickers 1985; Artzy 1985:136; 1999:187; Vickers and Gill 1994; Åström 1998:263; D’Agata 2000). Such disparate interpretations of the function of skeuomorphs would seemingly preclude the notion, as proposed here, that skeuomorphs were either used for aspirational or preservational purposes. If, then, as it is argued here, skeuomorphs act as proxies for other objects, how then to reconcile all the other functions that have been attributed to these objects in the archaeological literature? It is possible to explain many of the behaviors attributed to skeuomorphs if these behaviors can be seen as the by-product of the changing role of proxies over time and as corollaries of the emulation process.

Many of the functions attributed to skeuomorphs have revolved around the notion that these objects were intentionally created and used in competitive schemes between various social groups. Skeuomorphs either reinforced/undermined the existing social hierarchy or were used as the means by which artisans competed with each other (e.g., Harrison 2003; Knappett 2005:147–148; Reeves 2003; Zimmerman 1998). While there is no denying that skeuomorphs are often involved in competitive schemes, it is unlikely that all skeuomorphs were intended for competitive purposes. Rather, the competition between skeuomorphs and their prototypes (and the social groups respectively associated with them) was probably a consequence of the emulative drive. As with any endeavor that pits the efforts of one person against another, with emulation, there will be some
measure of comparison. While it is true that, in some circumstances, this comparison of one’s efforts against another may lead to intense personal rivalries characterized by individuals vying to outdo each other at any cost, this need not always be the case. At other times, the drive to emulate may simply spur an individual’s desire to improve upon his or another’s work for his own satisfaction. There is still a sense of comparing oneself against another person or object, but with this kind of emulation, the end result is not necessarily antagonistic. Whether emulation, or more specifically, the by-products of emulation, skeuomorphs, are used for competitive purposes, then, not only lies in the inherent properties of the objects themselves, but also on the conditions of the “playing field.”

In order for viable competition to exist, the conditions of the playing field should be equitable. If players are unevenly matched in skills or if the rules of play are unevenly advantageous to one side, for example, then there would be little competition per se in this one-sided contest. Only when the conditions are more evenly matched does true competition ensue. Skeuomorphs are not in a position, at least initially, to compete with the objects that they emulate, as the “playing field” in which these objects feature is not evenly matched. Skeuomorphs occupy the same roles and functions as their prototypes, but there is very little overlap in any other aspect: they do not have the same value as the originals and they are mainly used by different social groups than the prototypes. Used by different audiences, then, the skeuomorphs become proxies for the originals, acting on the behalf of the prototypes, but in different contexts. As proxies standing in for the originals at this stage, the “authority” of the skeuomorph is conditional on its subordinate relationship to the prototype. Due to this subordinate role of skeuomorphs at this stage, there is little threat from most skeuomorphs in supplanting the position or status of the original. The exception to this rule are the skeuomorphs that are considered “deceitful” in some manner. These counterfeits, as they are labelled here, are imitations that are made to look as close as possible to the prototype, but do not share the same manufacturing
techniques, as these objects are generally made by persons other than the original manufacturers of the prototypes (see more under 2.III “counterfeits” and Figure 4). These counterfeits, sometimes called fakes, forgeries, or frauds, are usually considered deceitful because they are attempts to usurp the status/profit/authority of the original by persons other than the original owners/manufacturers of the prototypes. These types of skeuomorphs are in direct competition with the originals as they are usually found in the same contexts as their prototypes and/or are often meant to be “passed” off to the same audiences that use the originals.

With the exception of these counterfeit skeuomorphs—which are considered deceitful because they look too much like the originals and yet are not genuine—most other types of skeuomorphs can not be mistaken for their originals. Their “non-practical” features and the materials in which they are made distinguish them from their prototypes. At this stage, then, there is no competition with their prototypes. In fact, as the proxies of the originals, acting as substitutes on behalf of the prototypes with different audiences, these skeuomorphs, at least initially, are more in a position to reinforce the status quo between social groups than to undermine it. Consider the case of modern “knock-offs” (i.e., imitations of luxury goods made from cheaper materials). Knock-offs are produced with the intent of emulating those goods unavailable to the typical consumer. The consumer buys the knock-off—arguably, knowing in most cases that the knock-off is not the “real thing”—in an effort to accrue some of the status attributed to the original product to his or herself. In the case of knock-offs, it is often not so much the product that is worth possessing, but the values that it represents: success, prestige, status, youth, or “coolness,” for example. In buying the object, one is also “buying into” the value system
within which the luxury goods operate, that is, willingly becoming a participant in that system, and thus legitimizing it.\textsuperscript{10}

Projecting the same dynamic onto past societies, one can imagine that aspirational skeuomorphs may also have functioned as tools used by the elite to promulgate ideologies of legitimacy and order within the society as well. In order to maintain its existence, the elite of any society need to assert order, legitimize their role within that order by positioning themselves within a broader cosmological whole as the point of articulation between the gods and the rest of society, and concretize that order through unequal access to labour and key resources (Baines and Yoffee 2000). One of the means of signaling one’s measure of success and status within this social order was through the possession and consumption of luxury goods (Veblen 1899). Not only could luxury goods, or prestige goods, signal elevated social status, the possession of these items were also one of the means in augmenting status as well (Plourde 2008:374; Barkow 1975:554). As social prestige meant an increase in access to mates, resources, and other social benefits, individuals would naturally want to vie for control of these prestigious items as one of the means of ameliorating one’s social status within society. Due to conscription rules, cost, or availability, however, not all individuals were able to access the “real things.” The next best thing for these individuals—presumably lower status individuals—would be the skeuomorphs of the original objects. Although cognitively “not the same” as the original prestige goods, nevertheless, skeuomorphs have the ability

\textsuperscript{10} This desire to “buy into the system” explains why skeuomorphs were not mere “economic substitutes” of luxury goods, one of the proposed functions of these objects (e.g., Negbi 1978; Sherratt 1980:196–197; Vickers 1985; Artzy 1985:136; 1999:187; Vickers and Gill 1994; Åström 1998:263; D’Agata 2000). This rather market-oriented viewpoint implies that it is the “natural order of things” for more expensive products to “trickle down” to the lower classes as cheap products. This viewpoint does not consider agency or the reasons why lower status individuals would actually want copies of these objects. As it was pointed out in the text above as well, not all skeuomorphs were made with cheaper materials, which would negate the reasoning that all skeuomorphs were economic alternatives.
to embody “enough” of the same properties as the originals (just as modern day knock-offs can evoke some of the qualities of modern luxury objects) in order to be used in schemes of status acquisition.

What is important to note here is that, within this scenario, skeuomorphs are the embodiments of desirable objects. Lower status individuals want access to the original prestige goods, but, thwarted, settle for skeuomorphs in their stead. These individuals are willing participants in the system in which the luxury goods operate; in other words, they “buy into” the ideology that is espoused by the elite who regulate the system of order in the society. For their part, the elite need not initially feel threatened by skeuomorphs. As “projections” of elite status and prestige, and, yet, not intrinsically valuable in themselves, skeuomorphs encouraged the participation of the lower status individuals in the same status system—thus, reducing their resistance—but, all the while, allowing the elite to maintain control over the genuine luxury goods. Thus, in this way, skeuomorphs, can be conceived as reinforcing the cosmology of order in which the elite were favored.

If aspirational skeuomorphs had any power to subvert the socio-political power of the elite, this would likely occur some time after the skeuomorphs were manufactured and had a chance to become “envalued” in their own right. Originally devised by Taylor (1999, fn. 6) to specifically denote the process by which new technologies and skeuomorphs were invested with meaning and value within a society, the neologism that is “envalued” also seems like an apt term to describe the process by which skeuomorphs themselves were also imbued with value, in the sense that objects with little preciousity value could be transformed into an “added-value” object (Sherratt 1994:62–63). This is the same process that Taussig intuited when discussing the power of mimesis to draw

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11 If the metal vessels themselves were indexical signs of an elite class, then the skeuomorphs were, in a sense, indexical of the indexical sign. If a film strip is an indexical (and iconic) sign of some thing (Knappett 2002), then, the projection on the wall of that thing within the film is twice removed cognitively from the original thing. The projection is an indexical sign of the film strip.
power away from the original in favor of the copy (Taussig 1993:13). The ability of the copy to draw some of the power/cachet/status/value/authority of the prototype likely stems from the natural tendency of the emulative process to illicit comparisons between the copies and original models. With any comparison comes judgements of worth, and, hence, a constant reassessment of the value of the skeuomorph vis à vis the original model. With this assessment, a skeuomorph’s value may increase due to an appreciation of its own worthy qualities (beauty, cost, utility, novelty) and/or through a decrease in the value of the prototype. As many aspirational skeuomorphs are proxies of luxury objects, which derive much of their value through cost, rarity, and prestige, the decrease in value of the prototype may be occasioned by the democratization of the luxury good to a wider audience, the dilution of its cachet by its association with “cheaper” and readily available reproductions, and/or from a perception of its lack of originality and usefulness.

It would only be at this stage—after some time has elapsed that has allowed the skeuomorph to become “envalued”—would the skeuomorph be able to truly compete with the prototype. At this stage, the skeuomorph would no longer just be a proxy subordinate to the original model. Once a stand-in acting on behalf of another object, the skeuomorph at this stage would now have accrued some of the power of the thing that it was representing. The authority once held symbolically by the proxy would now become real, and the substitute would now become its “own thing” with its own perception of worth—although one that likely differs in some way from the worth and value of the original. Thus, for example, Black- and Red-figure Attic pottery, which may initially have been used as substitutes of metal vessels (Vickers and Gill 1994), was probably, over time, appreciated for its own artistic merit and used, in turn, as a symbol of prestige alongside metal vessels.

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12 This does not apply so much to metal vessels, especially gold and silver vessels, due to the cost and rarity of these objects, but it can apply to objects where there is little control over access to raw materials and/or control over the number of manufacturers producing the same object.
Skeuomorphs, no longer subordinate to the prototype and now acting on their own behalf as their “own thing,” would more readily be in a position to compete with their prototypes at this stage due to a more even “playing field.” There would be more overlap in the spheres in which the skeuomorphs and prototypes operated. As the value of the skeuomorph vis-à-vis the original model became more normalized, these objects could be used by the same audiences (e.g., elite using Attic painted pottery alongside metal vessels or lower class individuals using luxury-type goods) or within the same contexts (e.g., brand name shampoos and their knock-offs sold on the same shelf or luxury goods and copies in the same graves), allowing for direct competition between them. With more occasions for competition, it is at this stage that the skeuomorph could effectively transform itself into a boundary negotiating artifact (Lee 2005), “pushing at the boundaries” (of exclusivity, cost, status, foreignness) that originally kept the groups of “haves” and “have-nots” apart (see also Star and Griesemer 1989; Frieman 2010a).

If aspirational skeuomorphs were in any position to undermine the perceived control of the elite through a “devaluation” of the luxury goods upon which the elite depend for their legitimacy and power, it would be at this stage, after the skeuomorphs have had a chance to become “envalued” (e.g., Knappett 2002:111; Reeves 2003:253). As history has shown, however, the production of skeuomorphs has had little effect on the political hegemony of the elite over time. While it is true that “envalued” skeuomorphs were able to compete with and subvert the prestige of their own particular set of prototypes, once the this set of status goods were devalued, the elite would only need to embrace another material or luxury good to reestablish their socio-economic dominance all over again. The cycle of emulation and imitation would just start over again with another set of goods (D. Miller 1982:90, fig. 1 pl. [3]).

To conclude, then, the argument that skeuomorphs were intentionally created for competitive purposes in schemes either meant to reinforce or undermine the existing
social hierarchy within a community does not take into account the behaviors and inherent properties of these objects. Rather, as it has been argued here, skeuomorphs are able to reinforce the existing social order (but not undermine it) as a consequence of being an emulative proxy, but not because they were conceived as tools for competition. Skeuomorphs of all ilk (either “counterfeits” or other) are able to compete with their prototypes only when the conditions of the “playing field” are either equalized or taken advantage of. These conditions change over time due to the nature of the skeuomorphic proxies to accrue in value and become “envalued” in their own right. Thus, in the initial stages, when skeuomorphs acted as proxies on behalf of their prototypes, the objects were more often than not used to reinforce the legitimacy of the elite classes. Once “envalued,” skeuomorphs were able to compete with their prototypes, but, due to the ability of elites to adopt a new set of status goods after the devaluation of the previous set, there is little evidence that these objects were able to effect any meaningful change on the existing social order.  

The use of skeuomorphs as the means of competition between social groups is not the only interpretation of function attributed to these objects. The other main position regarding the purpose of skeuomorphs is that these objects were created as the means in understanding and integrating new technologies (and foreign goods) into the community (e.g., Miller 1997; Wengrow 2001; Hurcombe 2008; Freiman 2010b). While it may be true that skeuomorphs may have aided in the adoption of certain objects into society, the argument that skeuomorphs were purposefully created as vehicles by which certain

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13 Whereas skeuomorphs seemingly do not affect the social position of elite groups, this does not mean that these objects were not able to effectively compete with their prototypes in other arenas. For example, in the domain of commerce, the skeuomorph may undermine the seller/manufacturer’s power by drawing profit away from the prototypes. If the copies can draw enough profit away from the original model, they may, in effect, replace their prototype on the shelves. In the same way, skeuomorphs made from a novel material (e.g., plastics) may replace the originals made from an older technology (e.g., ceramics or glass) in the long run as well.
objects were “envalued” and given a place in society is disputed. Rather than viewing skeuomorphs as the agents responsible for the adoption of new technologies (and goods), this study maintains its view that skeuomorphs were actually the by-products of other processes, namely, the emulative drive.

The main proponents of the function of skeuomorphs as tools in understanding and integrating new technologies are mainly archaeologists who study material assemblages occurring during periods of transition from one technology to another, such as for example the transition from technologies made from stone to metal or from basketry to ceramics (Taylor 1999; Wengrow 2001; Hurcombe 2008; Frieman 2010b). According to scholars espousing this view of skeuomorphs, these imitative objects served three main purposes: to help discover the inherent properties of the new materials at a time when the new technologies were little understood; to imbue the innovations with a sense of familiarity so that these goods and materials might be readily understood and desired; and, finally, as the means of giving people a way to “contextualize” and normalize the new materials by integrating them within the better-known social, aesthetic, and economic frameworks in which the older technologies functioned. By embedding the skeuomorphs (made from the new materials in familiar shapes) within these known frameworks, the new technologies would be able to gradually accrue their own specific cultural values and material identities within the society. Taylor (1999, fn. 6) has called this process “envaluation.” Here, Taylor specifically employs the term to describe the process whereby the new technologies, rather than the imitations themselves, were ascribed value within the society.

In this interpretation of skeuomorphs, the underlying assumption seems to be that, rather the being the emulative by-products of novel or innovative prototypes, the skeuomorphs themselves were the innovations, that is, the intentional creations that spurred change over time. This assumption is perhaps better illustrated by an example.
During the 18th century CE, many products from the Far East were imported to Britain for the first time (Berg 2002). The introduction of these imports spurred the production of local goods and new technologies. One of these products was varnish, created in response to Japanese lacquer, initially in other parts of Europe and, later, in Britain (2002:18). Varnish was a totally new invention, and, in its first uses, the products on which it was used were skeuomorphic of the foreign imports. This substance was initially used on the same types of objects and in the same manner as lacquer—on wood, furnishings, and coach panels, for example (2002:19). Before long, the Society of Arts in Britain offered incentives for local varnish patents that could be used on objects other than wood. The next generations of varnishes were then used on all manner of items, such as tea trays, buckles, vases, and buttons, for example (2002:19). From that period onward, varnish became “its own thing,” accruing its own value within the society. In this example, scholars who interpret skeuomorphs as tools in the adoption of new technologies would suggest that the varnish itself was the innovation (new creation) and that, initially, the reason that varnished products were created to strongly look like lacquered goods would be to have the varnished products better understood and desired by members of the community. In this scenario, it is the skeuomorph that is seen as holding the initial value with the prototype playing a secondary role—that of having the skeuomorph accepted as another step toward the inexorable advancement of new technologies over time.

There is no doubt that varnish (and the products on which it was used) was innovative and that it gradually became “envalued” over time (in the sense that varnished products were able to find a place within society, but also that these objects acquired added-value as well). What is forgotten in this interpretation of the material, however, is that the skeuomorphs (the varnished products) would not have existed if it were not for the introduction of the novel prototypes, that is, the lacquer products, and the self-professed goal of the local manufacturers “in whatever mechanical or manufactured arts
other nations may excel Great Britain...not only to imitate, but surpass, if possible...” (cited in Berg 2002:16). Thus, the skeuomorphs only existed because of the emulative drive to “equal or best” the innovative products arriving into Britain. In this interpretation of the material, the skeuomorph plays a secondary role to the prototype, that of a fortuitous by-product of the emulation process, which then happens to lead to a new technological invention.

Perhaps it seems like an academic point to stress the intentionality behind skeuomorphs. If skeuomorphs did, in the end, aid in the absorption of certain technologies within the society, then what does it matter if they were created as inventions in their own right or as an emulative response to other objects? The reason it is important to determine the intentionality behind skeuomorphs is because this affects the understanding of their meaning, functions, and purposes. The perception that skeuomorphs were intentionally created to provide a bridge between old and new technologies obscures the true reason they were created.

Two examples of skeuomorphs, occurring during a period of transition from older to newer technologies, but which do not follow the proposed interpretation of skeuomorphs as aids in the adoption of new technologies, are the cases of the Apple clock and the Apple rotary phone ([1:3, 1:4, 1:5]). In both of these cases, the clock and the rotary phone are design features employed by the Apple company in some of their products. The clock [1:3] is designed to resemble the face of an existing analog [1:4] clock and is used in the stead of a digital clock, which usually has its numbers spelled out. The Apple rotary phone design [1:5] can be found on some iPhones in lieu of the more common touchtone phone design. The rotary phone design looks and works in the way as older rotary phones, with the numbers arrayed in a circular plan that “rotate” when touched. Both of these skeuomorphs reference older technologies and are employed for the same purposes as their digital versions. According to the interpretation that skeuomorphs aid in the...
adoption of new technologies, or at the very least, aid in familiarizing new technologies to an audience by alluding to older technologies, this would imply that the audience was not familiar with digital clocks or touchtone phone pads and that these particular skeuomorphs would help the audience to understand how to use the new electronic technologies (iPhones, iPads, etc.). Of course, this is not the case. These designs were specifically chosen to resemble older technologies, but not explicitly for reasons of understanding and familiarizing people with the new technologies. The Apple designers purposefully used these earlier technologies for other reasons—most likely to evoke qualities such as comfortability, “retro coolness,” craftsmanship, and humor in their products. In other words, the value of the prototypes (the analog clock, rotary phone)—in this case being their reference to “the past”—was more important than the technology in which the designs were made (digital computing).

In this study, the Apple clock and Apple rotary phone applications are considered to be preservational type skeuomorphs for their underlying intent in evoking qualities associated with “the past.” One may imagine that, concerned with the preservation of certain features of past technologies, preservational skeuomorphs might only occur during periods of technological transition. This is also not the case. Preservational skeuomorphs may occur at any time, and aspirational skeuomorphs may also occur during times of technological change. This latter point may be illustrated by the presence of skeuomorphs occurring during the transition to ceramic from basket-weaving technologies in the production of elaborate vessels during the Late Neolithic in lowland Mesopotamia. Clay and plaster vessels first appeared in the Fertile Crescent during the Early Neolithic period (ninth millennium BCE; Wengrow 2001:172). These small and plain vessels formed part of a continuum of plastic media that permeated domestic and ritual life at the time (Wengrow 2001:173). Among these vessels, a small percentage bore negative impressions of coiled basketry-bases, indicating the possibility that either
baskets were used as moulds for clay vessels at a time when ceramic technologies were first being explored, or that clay was used for caulking and lining basket vessels in this period (Wengrow 2001:178). These sherds with basketry impressions would be considered skeuomorphs with an indexical connection to its prototype (Knappett 2002; 2005:85–100, see also above, pps. 39–40). It is not clear whether these basketry-impressions were intentional or not. What is clear is that decorated pottery did not become popular in the Near East until some time in the seventh millennia BCE, two millennia after the first appearance of ceramic technology in this region (Wengrow 2001:172). This decorated pottery is thought to have been influenced by other media, among them basketry due to the painted motifs resembling the linear and geometric patterns inherent to woven designs (Mallowan and Rose 1935:170; Adovasio 1977:228; Wengrow 2001:180–181). As this decorated pottery (i.e., namely Samarran ware from the late seventh millennium BCE) was likely imitating woven basket vessels, many of the vessels among this assemblage could be considered ceramic skeuomorphs of basket vessels. These skeuomorphs would have had an iconic connection to their prototypes, that is, that would have been made to intentionally resemble their prototypes (see Knappett 2002; 2005:85–100, see also above, pps. 39–40). According to the scholars espousing the interpretation that skeuomorphs were mainly created as aids in familiarizing newer technologies by referencing older ones, one might imagine that the iconic skeuomorphs would have appeared in the ninth millennium BCE at a time when clay was making its first appearance. They do not. The painted ceramic skeuomorphs that look like basket-work occur during the late seventh millennium and sixth millennium, during the period when vessel ornamentation was increasingly restricted to what might be interpreted as a sets of specialized drinking and serving vessels (Akkermans 1993:238–239; Wengrow

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14 Another possibility exits that was not considered by Wengrow (2001). Considering the fact that only the base of the basketwork was found, it is possible that either the clay vessel was fashioned on top of a basket-woven mat or the basket/mat impression was purposefully left on the ceramic base to serve as a visual link to a personal or communal item in funerary rites (cf. Hurcombe 2008:106–107).
The implication of this fact is that ceramic skeuomorphs did not appear until there was something deemed worthy enough to emulate, i.e., a specialized vessel sets, which one might make a reasonable assumption was used in some form of feasting and/or ritual ceremony (see Sherratt 1987; Dietler 1996; Hayden 1996). Given that there may have been some socio-political maneuvering for status and prestige during these ceremonies, it is more likely that the ceramic skeuomorphs of the decorated, presumably labour-intensive, basket vessels were aspirational in nature rather than purely derived from a desire to “understand and familiarize” oneself with the properties of clay—especially since it appears that clay and basketry were used in conjunction for two millennia before decorated pottery ever appeared.

Given the last three examples of skeuomorphs technically occurring at “times of technological transition,” there is no consistency to the interpretation that the function of skeuomorphs was the intentional absorption of new technologies within the society. While it is possible to claim that skeuomorphs did, in fact, aid in this endeavor, it does not seem that that was their intention. Rather, as it was asserted previously, the best way to gauge the intention behind a skeuomorph is to ask what value the prototype may have had to the person doing the imitating. In divining the value of the prototype, one is then in a position to speculate about the intention behind the copying, and, hence, the raison d’être of the skeuomorph. Either kind of skeuomorph could occur at any given time, and these objects were not limited to specific regions or chronological periods.

In many ways, it has been argued here that the emulative process can be held responsible for some of the idiosyncratic features and behaviors of skeuomorphs. Rather than viewing skeuomorphs as entities with little or no fixed meanings, I have shown that

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15 Granted, the time frame given for the “transition” is open to interpretation. In the Neolithic, change might have occurred over hundreds of years, while in modern society, this change might occur over a few decades.
it is possible to illustrate that skeuomorphs—while each individualistic in their own ways—were likely created for similar purposes, that is, to emulate, evoke, and stand in for other objects. By interpreting skeuomorphs as emulative copies, this study has reframed some of the roles attributed to these objects in the archaeological literature in light of the inherent properties of the emulative process. The guiding principle herein that emulation was responsible for the creation of skeuomorphs has also helped to elucidate some of the actors that use skeuomorphs (those who do not have access to the originals) and some of the types of objects subject to imitation (objects of value to the community doing the emulating). The only thing that remains is to discuss the role of emulation and imitation in the propagation of skeuomorphs and other copies through space and time.

2.III THE EMULATION AND IMITATION CYCLE

If emulation can be considered the act that spurs on the creation of skeuomorphs, it would naturally follow that imitation, as defined as the act of copying, then, would be the means by which these objects were propagated throughout the society at large. As the process responsible for the dissemination of skeuomorphs and other copies in the community, it seems appropriate, therefore, to discuss some of the effects of imitation on an assemblage of material things.

It goes without saying that material objects do not reproduce themselves. Rather, physical things rely on human agency for their propagation. Therefore, given that the locus of imitation resides in the interaction between two or more persons, it is reasonable to assert that the “thing” that is really reproduced is not really the end-product itself (the physical object), but, rather, the “blueprint” of the thing (idea), from which the physical copy is later fashioned. Relying on human agency for the reproduction of the “blueprint” of the object, therefore, there is always room for the introduction of “errors” or “mutations” during the replication process. These “errors” and “mutations” may take
many forms. Simple “errors” may occur at any time during the manufacturing cycle, such as the lack of attention by an artisan on a particular day; the inexperience of an apprentice; the slight differences in production methods (firing, timing, material quality); or even the temperature and climate during certain production phases. “Mutations” on the other hand may, perhaps, be conceived as the conscious alterations to the idea of the model by the artisan during moments of creativity. There may be many conscious reasons an artist may chose to alter or adapt the “blueprint” of the prototype. The simplest reason may just be for the sake of artistic license—the artist just decides to make changes to the appearance of the copy for the sake of variety. Another reason may be political. By choosing to alter the blueprint of the prototype, the artisan may, in a way, make a statement by reducing the power an “alien” object (if a foreign prototype) into one that conforms to local aesthetics and social identity (Miller 1997:248–250).

Over time, one may reasonably expect the number of “errors” to increase among an assemblage of copies, both because of the increased number of occasions for making errors and also because of the magnification and compounding of errors (or the “selection” of errors) during the replication of copies of copies. Depending on the frequency of reduplication, the number of errors within an assemblage has the potential, in fact, to increase exponentially with every round of copying. In theory, therefore, in an assemblage that spans several generations of reproductions, there should be a perceptible loss of accuracy in the latest copies due to the “corruption” of the blueprint of the model. One might say, even, that this “corruption” would represent a change over time in the
appearance of the copies vis à vis the original prototype. In an archaeological assemblage of copies, which, in effect, represents a cumulation over time of the static end-products (artifacts) of the imitative cycle at any given moment of time, this change over time would likely manifest itself as a range of skeuomorphs expressing different degrees of “accurateness” with the original prototype. The most accurate skeuomorphs in theory would represent the earliest stages of imitation within the cycle, whereas the least accurate would likely embody the latest.

That the “blueprint” of a prototype does seem to change over time and can be expressed archaeologically by different groups of skeuomorphs was suggested earlier in various diachronic studies of the imitation of metal vessels in ceramic (see pps. 35–37). In these studies, two out of the three scholars recognized three distinct groups of ceramic copies based on the perceived level of accurateness of these objects to their prototypes. The earliest ceramic copies were indeed considered the most accurate. Based on these studies and also on the premise that the spark initiating the production of skeuomorphs was emulation, I have devised a model that would help to explain the presence of skeuomorphs with varying degrees of accuracy in the archaeological record. In essence, rather than suggesting that each kind of copy (i.e., skeuomorphs with varying degrees of similarities to the original model) once occupied varied and specific roles simultaneously within the society that used them, I advance the notion that each copy group actually

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16 The process of change described here is paralleled by Dawkins (1976) concept of the evolution of the meme. In memetics, the meme (or bits of information), likened to the gene, is considered the replicator (that which is copied by imitation), which, if subjected to the same forces in biological evolution: variation, selection, and heredity (Darwin 1879), is thought to also “evolve” over time into something different. As there is still debate about what constitutes a meme, the mechanisms in which this replicator propagates itself from one host to the next, and even whether the analogy of the gene/meme is adequate to explain changes in cultural systems (e.g., Sterelny and Griffiths 1999:333; Brodie 1996:32; Wilson 1998:148 cf. Dennett 1995; Gabora 1997; McNamara 2011; Benzon 1996; cf. Blackmore 1998; 1999; 2001; Ziman 2000; Basalla 1988; Plotkin 1993), I chose not to focus on the “evolution” of the meme (or idea of the object, or “blueprint”), but on the introduction of “mutations” to the idea and the “selection” of those errors to produce change over time. These terms are only used here in a general sense.
represents a moment in time along a chronological spectrum of change instigated by the emulation of a prototype and propagated by the repeated imitation of this prototype and its copies. For the sake of convenience, the cycle of emulation and imitation as conceived of here is illustrated in Figure 3. All while discussing the various mechanisms responsible for the propagation and transmutation of emulative copies over time, the focus of this section is to provide a framework for identifying and distinguishing the various end-products of the imitative process at different chronological “stages,” and to contrast these end-products with other objects that may “look like each other,” but which were not likely the result of emulative processes. The ultimate goal is to translate these observations about the end-products at each stage into a model by which these objects may be recognized archaeologically (see next section, 2.IV).

Within the corpus of “objects that look like other objects,” there exists a wide spectrum of copies, each with their own characteristics and each resulting from different cultural mechanisms. As skeuomorphs have been defined here as emulative copies, the first task in helping to distinguish these objects from other types of copies would be to separate those cases where the similarity between artifacts were the result of emulation from those that were not. To emulate implies a conscious intention on the part of the emulator to mimic the attributes of another object. That is, the emulative copy, intended to evoke the properties of the original model, would intentionally be invested in markers that would denote its role as referent to another specific object. Without the display of signifiers, it would be difficult to attribute an emulative intention to the copy. Thus, one way to help distinguishing skeuomorphs from other types of “objects that look like other objects” is to look for specific markers that aid in evoking the properties of the original. One group of objects that may superficially resemble other objects, but which may not be emulative, are what has been referred to here as functional parallels.
Functional parallels, as the name implies, share the same function and “look” as each other, but do not evince any evidence for emulation. As an example, it is probable that Minoan ceramic cooking pots and bronze cooking pots were functional parallels [2:1, 2:2]. Both pots were, obviously, made from different materials, presumably by different manufacturers knowledgeable in the techniques of each medium (see also Figure 4 for descriptions of each type of artifact). Although they were probably different groups of artisans, both groups of manufacturers grew up in same culture, if not in the same town or region. They would have seen each other’s products and, perhaps, at times, influenced each other, hence the similarity in shape of both products. While this sounds like a recipe for emulation, it is most likely that both cooking pot shapes grew out of the same cultural traditions and the functional need to cook. Whereas one does not need a gold cup to drink, it is imperative to have a cooking pot to cook—if one couldn’t get a bronze one, a ceramic one would have to do. The impetus fueling the similarity between the two functional objects was not emulation, but practicality. The distinguishing feature of the functional parallel is the lack of signifiers referring to another specific object. If it were the purposeful intention of the artisan to evoke the qualities of the bronze pot, he would presumably have added “metallic” markers to his ceramic cooking pot or vice versa. While it is still possible that one group of objects were emulating the other, without those markers, it would be impossible to tell from these archaeological artifacts whether this was the case.  

Another characteristic feature of the emulation process is the substitutive nature of the products that result from it. Emulative copies are not exact reproductions of their prototypes. They are usually made from different materials and/or by different manufacturers, resulting in products that “look” alike, but which are not exactly alike.

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17 One of the attributes of skeuomorphs examined in this study is shape (see Chapter 5). One might argue that functional parallels share the same shape and, thus, might be considered skeuomorphic as well. In the case of the skeuomorphs listed in Chapter 5, however, all the types of ceramics listed include examples of pottery that have some other distinguishing characteristic beside shape to aid in their identification as skeuomorphs.
They are substitutes of the thing that they are copying. If the product is made from the same materials, with the same techniques, by the same manufacturers, and looks exactly like the original, then there is little differentiating the original and the copy; the copy becomes the thing that it is imitating. The resulting product of this type of copying would be a duplicate. A modern example would be the duplication of a new car model. The model is mass-produced on an assembly line with the result that every car is exactly alike. There is no difference between the original prototype and the duplicate. In a sense, the car manufacturer is really only producing more originals rather than creating a symbolic proxy of the original object. The result is akin to photocopying. A single prototype is duplicated as many times as wanted in one instance of copying. Each individual emulative copy, on the other hand, arises from a single creative instance, the result of an individual copying the work of another in his own way. From that single emulative act, it would be possible to produce duplicates of the resulting imitation, but, here again, all the duplicates of the imitation would be considered the same thing as the imitation and not variations and emulations of it.

Given that duplicates are the exact copies of the originals, from an archaeological perspective, there is no differentiating the duplicate from its original model. For instance, if five ceramic cups were made in the exact same way by the same craftsman of another ceramic cup and three cups were lost to time, there would be no way of determining whether the remaining three were model and copy or just copies. Thus, duplicates are considered the same as the “originals,” but what distinguishes them is the manufacturing process. Of course, duplication of exact copies on a large scale, such as the mass-production of cars on an assembly line, is only possible in an industrialized world, and it
is very unlikely in the Bronze Age. However, the possibility must be addressed that the
duplication of exact copies did exist in this time period, except on a smaller scale.\textsuperscript{18}

Having differentiated two groups of “objects that look alike” but which were
likely not the result of emulation, it is now possible to discuss the products resulting from
the emulation and imitation processes over time. Among the objects that can be
considered products of the emulation process, one can distinguish between \textit{imitations},
\textit{adaptations}, and \textit{derivations}.\textsuperscript{19}

In this scheme, an \textit{imitation} is the reproduction of an original object as accurately
as possible given the limitations of the available material and manufacture techniques
(Miller 1997:136). In most cases, the features that are most commonly imitated are the
superficial details, such as shape, color, or decoration that will evoke the “look” of the
original object. An example of an imitation is the ceramic four-lobed kantharos from the
Isle of Christ, off the coast of Malia, Crete, that imitates a similar metal vessel as the one
found at Gournia in a MM IB context ([Gournia]: Hawes 1908, col. pl. C.1; Davis
1977:87–102, no. 12, figs. 66, 67 [2:3]; [Isle of Christ]: van Effenterre and van Effenterre
1963, pl. XLIV:7822; Davis 1977:89, fig. 67 [2:4]). The ceramic version has the same
lobed rim, high carinated shoulder, narrow pedestal stand, and thin, ribbon handles that
extend from the rim to the shoulder. Given the proximity of both finds, the similar date,
and the near-exact dimensions of the ceramic example compared to the metal vessel, one
wonders if the Gournia example was not \textit{the} prototype for the vessel found near Malia.

\textsuperscript{18} The closest case of duplication in Minoan Crete may be the production of conical cups in large quantities. It is
unlikely, however, that these cups were emulating cups in other materials. This, perhaps, reinforces the notion that
duplication only applies to non-emulative copies?

\textsuperscript{19} The definitions for each group of copies have been adapted from Miller’s work (1997). Whereas the interpretation
of the meaning and the role of each group of copies differs in this study somewhat from Miller’s, who conceived of
the degree of physical similarity to the prototype as a function of the intensity of receptivity Persian goods received
within Athenian society, her distinctions of the physical properties of each group of copies have proved useful in
differentiating the products of the emulation process at different stages.
In the case of an *adaptation* “modifications to foreign forms are introduced to allow for difference of use relating to differences in social practice” (Miller 1997:136). One frequent way that a foreign shape will be adapted for local use is the addition of handles. An example of this is shown by the addition of handles to Athenian ceramic imitations of the metal animal-headed cups popular in Achaemenid Persia. The Persian originals had no handles. The Athenians, with their own practices and rituals, added handles and the occasional foot to the animal-headed cups to have the vessels conform to their notion of what was practical and appropriate for the Greek symposium (Miller 1997:142). A Cretan example of an adaptation is the addition of a handle to a ceramic cup form (e.g., Levi 1976, pl. 125b [2:6]), which is seemingly emulating a metallic bowl shape without handle (e.g., Bisson de la Roque 1950, pl. XV:70605 [2:5]).

Whereas *adaptations* usually entail grafting a local touch to a foreign shape, *derivations* have “a foreign approach to surface treatment or profile [...] applied to a traditional local form” (Miller 1997:136). The derived forms are the result of a gradual evolution of local forms due to the extended exposure to foreign elements in the culture. These foreign elements enter the local repertoire and stay there. At this stage, the incorporation of these foreign elements has now become more of a matter of fashion than any attempt to consciously imitate any precise foreign form. An example of the derivative process occurred in the Early Bronze Age. In EH II, an intrusive Western Anatolian pottery tradition (represented by the Lefkandi I assemblage) was introduced to mainland Greece (Rutter 1979:10). Soon thereafter, some of the elements of the Western Anatolian tradition, such as a gray slip with burnishing and carinated shoulders, were applied to native EH III Greek pottery. The resulting derived forms formed part of the standard mainland Greek pottery tradition in the following period (Rutter 1979:10). What were once foreign elements in Greek material culture had now become commonplace.
Having now defined the most basic terms of the model, it now remains to discuss the stages inherent to the emulation and imitation cycle.

Contact with prototype

Emulation and imitation begins with contact with the prototype. The prototype is any object deemed worthy of copying. As skeuomorphs tend to appear at the interface between social groups with access to the prototype (“haves”) and those with none (“have-nots”), this would imply that many of the prototypes that spur on skeuomorphs were novel innovations and/or foreign goods that were previously not known within the society; otherwise, there would be no need for the production of a new set of skeuomorphs by the “have-nots” if the prototype (or its copies) were already present and accessible to all. Novelty is an important characteristic of objects used for aspirational purposes, and the sudden appearance of new or foreign goods would likely occasion the adoption of these goods by those seeking to foster exclusivity and prestige for the members of their group. The adoption of these status goods by those fortunate enough to acquire them, in turn, would then occasion the production of a new set of skeuomorphs by those not able to access the novel goods. Novelty would also spur on a preservational skeuomorph as a response to a new invention or innovation. The introduction of novel prototypes within the society may have been caused by a number of mechanisms: mercantile exchange, tribute, spoils of war, diplomatic gifts, or innovation, for example.

Once a foreign or novel prototype is introduced to the receiving society (the culture that accepts the prototypes), the members of the society must decide what to do with it. There are basically three choices: rejection, wholesale adoption, or acceptance with modification (Leroi-Gourhan 1993; Rouillard 2007). It is at this stage that the receptivity of the original prototype applies. The degree to which an object is accepted within a society is dependent on a number of factors: “‘inherent communicability’ of
culture elements; the ‘utility’ and ‘compatibility’ of the traits to be communicated; the ‘prestige of the donor group’; and the ‘prestige of the receiving group or individual’ within their own population” (Linton 1936:337–344; Miller 1997:243–244). Three of these factors—the inherent communicability, utility, and compatibility of an innovation or foreign object—are dependent on the cultural matrix of the receiving society. They determine how easily an idea or object “slots itself” into the receiving society, and, thus, how quickly (if at all) the innovation is spread to the new culture. Communicability refers to the ease that an object or idea is transmitted to another culture. Physical objects and technological ideas, given their straightforward natures, are more easily understood and communicable than, for example, a religious or philosophical system. Compatibility refers to the degree that an innovation may parallel or improve upon a previous trait in the society. The higher the compatibility, the less effort is needed to integrate a new innovation into the culture. Finally, utility refers to the perceived usefulness of the new innovation in the society, which may or may not be the same as the perceived utility and intended function of the object or idea within the originating culture.

The two other factors, the prestige of the donor or receiving groups, are perhaps not as tangible as other factors in determining the inherent ease an innovation or novel object may fit into the techno-cultural matrix of the receiving society, but they are perhaps the ones with the most effect on the emulative decisions leading to aspirational skeuomorphs. Aspirational skeuomorphs are the product of the emulation of goods perceived to have some high value; this value is affected by the perceived prestige of the group from which the prototype originated as well as by the prestige of the group that initially adopts that prototype. In pre-monetary societies, the status of the giver was often more important than the intrinsic or exchange value of an object (Mauss 1966; Malinowski 1920). Therefore, the status of the giver may, at times, affect the decision to emulate. An example of the status of foreign nations affecting the decision to emulate
foreign goods can be illustrated by ancient Egypt. Egypt has arguably been what would be considered a “superpower” for most of the Bronze Age. It had the resources, the power, and the means to subjugate other peoples. Certainly, it considered itself throughout much of its history as superior to its neighbors. Although foreign gifts may have been displayed in Egypt as a show of power (these gifts may be called “tribute” as a form of propaganda), there is very little evidence that these objects were emulated in Egypt. On the contrary, in an effort to emulate a powerful state, Egyptian goods were frequently emulated in many foreign countries (Ben-Dor 1944–45; Warren 1969:74–76; Phillips 1991:344, 349, 357–358, 369). The exception to this rule seems to have been the emulation of Minoan objects in Egypt. Some of the objects include Kamares ware in the Middle Kingdom period (Kemp and Merrillees 1980:57, 102–103, 176–225, figs. 63, 70, 71, 75) and Minoan textiles (Barber 1991; Nikolakaki-Kentrou 2003; 2007), for example. As the Minoans at the time were considered master craftsmen (especially of metal goods) and not under the political control of the Egyptians, it may be that the Egyptians considered the Minoan arts as “worthy” of emulation and imitation.

The prestige of the recipient group is another channel by which the innovation is transmitted throughout society. Without the acceptance of the new idea or object by an influential group of persons, the innovation has fewer chances of being diffused to other members of the society. The higher the prestige of the donor group, the higher the chances that the innovation will be accepted by the recipient group. The manner by which the symbols of the elite eventually trickle down to the lower classes can be explained by diffusion: “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers 2003:5). Based on studies measuring the effectiveness of broadcast advertising among the population at large, it was found that the most influential channel was not the broadcast medium, but the channel of influence down from a small number of “early adopters,” to a larger number of
“secondary adopters,” and from then to a group of “tertiary adopters,” and so on, down the line. There was also some lateral influence among each group. Advertisers could influence the propagation of an idea from one adopter level to the next one down, but found that they could not influence the lower levels until the level above them had already adopted the idea. In general, these studies found that people were more likely to adopt, or would consider adopting, if they knew and respected those that had already adopted the innovation. Thus, imitation was considered the strongest channel of influence. Repeatedly, the same pattern occurred. The early adopters embraced the innovation first, the majority of the population followed, and, eventually, the innovation became commonplace in society (Rogers 2003).

The study of diffusion of innovation parallels Miller’s (1982:90, fig. 1) schematic representation of the devolution of a status symbol from the exclusive domain of the elites down to the lower classes (pl. [3]). In the first stage, the chart shows a member of the elite with one type of pottery while the three other figures do not. In the second stage, the second person holds the new type while the remaining two do not. In the third stage, the new type has spread to the third person. In the final stage, just as the new type has reached the member of the lowest class, the elite member adopts another pottery form as a means of socially distinguishing himself from the rest of the crowd. If one equates the elite member as the “early adopters” and the other members to “secondary,” “tertiary,” and “quaternary” adopters,20 this chart shows the same process of diffusion through society. The only thing that is missing from the chart is the manner in which the diffusion of this pottery form spreads—and that would be emulation and imitation.

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20 Perhaps a case could be made that the earliest copies in this diagram could represent “imitations” as conceived here, whereas the latest, that is the objects that find their way to the “quaternary” adopters would have been “derivations”.

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The first step in the process of emulation, then, is to set the conditions whereby a certain group of objects become desirable enough to be imitated. First, the objects must fill a (psychological, social, political) need in the society. Second, the objects must be in large enough numbers to create, for lack of a better word, a “buzz” around these objects. Too few objects or the impossibility of acquiring any more of the same objects means that peers cannot compete with each other (or form a large enough group to exclude others). There must be a large enough mass to create a “tipping point” of excitement where suddenly everyone who does not own a certain type of object feels the need to own one. Third, the luxury objects must not be within reach of most people in the society to preserve their exclusivity. This is done either through cost, scarcity, or proscription. Finally, the objects must be adopted by an influential group of people within the society in order that the innovation diffuses down to lower social levels.

Imitation and close adaptation

Faced with the choice of rejecting or adopting a novel prototype, if the receiving society does, in fact, adopt the object, there will likely be a period of experimentation with and learning about the model. As part of the experimentation phase, artisans of the receiving society may produce a copy of the original model. If so, the first effort at copying the original model will most likely be by what social scientists in the field of observational learning have labelled *emulation*, that is, an attempt at reproducing the “end results” without the aid of direct step by step knowledge of the manufacture of the original object (or *imitation*)\(^21\) (Tomasello et al. 1987; Tomasello 1990). Efforts at reproducing each of the superficial details of the prototype, and, still learning to distinguish between important and non-important steps in the manufacture of a novel product, the artisan will most likely emulate the original model “verbatim,” resulting in a very accurately

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\(^{21}\) *emulation* and *imitation* used in the sense used by scientists in the field of observational learning are herein italicized to differentiate them from the same terms used in this study.
rendered copy. The artisan would also probably have first-hand access to the prototype, also helping to fine-tune his accuracy.

During this period of experimentation and learning about the prototype, the artisan would have the choice of reproducing the model in two ways: either making a copy from the same materials (or similar materials) as the original (counterfeit) or in different materials (replicas). Both counterfeits and replicas are direct imitations, but the differences between them lie in the intention of the maker, the actual persons making the copy, and the material in which the copy was made (see Figure 4). In the case of counterfeits, the imitator does not have the same technical know-how or resources as the producer of the original object—hence the imitation cannot be exactly alike—but the differences between them can be so minuscule that it is easy to “pass off” the counterfeit as an original. A likely example of a counterfeit silver cup was found in a tholos tomb at Vapheio (near Sparta on the Greek mainland) dating to LH I (Tountas 1889:146–147). Within the same tomb, two silver cups were found together that, superficially, look almost exactly alike ([2:8, 2:9]; Tsountas 1889, 146–147; Stais 1915:186). Both have the same shape, sport a spool handle, and are incised with the same series of parallel lines around the rim, base, and mid-body (Davis 1977:44, 258–260, cat. nos. 105, 106, figs. 202–205). On a production level, however, the cups are quite dissimilar. The first cup [2:8] was raised from a thick silver plate; the rim was strengthened; and the handle, cast in one piece, was riveted to the inside of the rim with three large, round silver rivets. The bottom of this handle was fused to the body of the cup, forming an L-shape. The second cup [2:9] was made from thin silver plate. The handle was also affixed with flat rivets, three inside the rim (now missing), as well as one large one on the inside of the wall of the vessel. As the lower strip of the handle was not fused to the body, the handle of this cup appears foreshortened compared to the one on the first cup (Davis 1977:44, 259–260, cat. no. 106, figs. 203 and 205). Thus, even though the two cups may appear similar, they
were apparently not made in the same manner. Davis attributes the first L-shaped handled cup to Minoan manufacturing techniques and the second cup to Mycenaean ones (1977:44, 259–260). If indeed these cups were manufactured by different groups of artisans, this would imply that one of the cups (likely, the second) was a counterfeit of the other. Buried together, it is unlikely that most observers would notice the difference.

Contrary to the counterfeit type of imitations, replicas are not made to deceive as they are usually are made from different materials as well as different manufacturing techniques. Although most often made from cheaper or easier to procure materials, this not always be the case, as the example of the mutules and guttae emulating wooden beams on the Parthenon exemplifies. As replicas are made from different materials (and as many emulated prototypes are novel inventions or foreign imports), in most cases, the makers of these objects were also different than the manufacturers of the prototypes. Even so, replicas share the same “look” as the prototype, even to the point that they might display features that only occupy a symbolic role in the copy but which served a valid functional role in the original model. Many examples of ceramic replicas of metal bowls were found at Knossos, but one in particular illustrates the properties of this type of copy ([2:7]; Warren and Hankey 1989, pl. 6A–B). Found in a context dating to ca. 1900 BCE, this ceramic bowl, clearly made from a less intrinsically valuable material, nevertheless, captured all the superficial details of a type of a metal bowl, an example of which was found at the site of Tôd in Egypt (e.g., Bisson de la Roque 1950, pl. XV:70605 [2:5]). The clay vessel is molded to resemble the vertical fluting on the silver model. The base has the same raised concentric circles, and the walls are merely 1.2 mm thick in diameter. Even the exterior surface is coated with a powdery white paint to evoke the silver material of the original. Although the two objects are made from different materials, there is no denying that the clay example was modeled after a metal bowl.
Very soon after this experimentation phase, once the potentialities of the prototype is better understood, the receiving society may then make the choice to adopt the prototype wholesale or to adapt it in some way to conform to the norms of the society. If the intended function and perceived usefulness of the prototype in both the receiving and giving cultures is very similar, then the receiving culture may chose to adopt the giving culture’s innovation with little or no modification to the original model. At other times, if the perceived utility and intended function of the innovation within the receiving society are different from those espoused by the giving society, then, the object or idea may be modified to adjust to the social, political, religious, or customary behaviors of the receiving culture. As few innovations can pass through the filter of a new cultural environment unaffected, adaptation is a very frequent response to the introduction of a new idea or object.22

Adapted copies vary in their closeness to the original model. Close adaptations, as the name implies, are some of the most accurate vis à vis the prototype. These objects are really just replica-type copies, but with slight alterations. At this stage, the concern is function—how to turn the original shape into a “practical” form by making it conform to the conventions of the receiving society. Even if the close adaptation is intended to perform the same function as the original model (e.g., as a cup for drinking tea or wine for example), the social practices and traditions of the receiving culture dictate that a change be made based on “what feels right,” or “how it has always been done.” There is little or no attempt to change the outward appearance of the prototype save for the appendages (on pottery shapes) or another functional features. As these are early attempts at experimentation with an unfamiliar form, the resulting close adaptations can often appear ungainly and awkward.

22 As it is in the interest of the artisan of the counterfeit to make the copy as similar as possible to the prototype in order to make it pass as the “real thing,” these types of copies are less likely to be adapted, unless, of course, the prototype is adapted first.
Adaptation and hybridization

If the original prototype (or its first copies) becomes popular in the receiving culture, there is likely going to be a demand for more of the same by more and more people. From this moment onwards, the production of copies increases exponentially until the demand is sated. It is at this stage that the idea of the prototype “trickles down” by diffusion throughout the society from the group of “early adopters” down the line (Rogers 2003). As with the transmission of genetic material and the propagation of memes, with every instance of imitation, there is the potentiality for “errors” or “mutations” to creep into the production of skeuomorphs. The end-results of imitation at this stage are what are hereby called adaptations, or hybrid forms that take on the appearance of the original prototype, but not exactly. European porcelain makers, for example, although inspired by imported Asian wares, made a point of producing recognizably European wares—as early as the mid 17th century CE—in order to appeal to the local customer (Emerson and Chen 2000:175). To modify and adapt was to make something one’s own.

To adapt a foreign product or novel idea to local needs was also to find a way to reconcile that object or idea to the philosophical tenets of the local culture. Every culture necessarily has its own philosophies (religious views, ideology, moral values, etc.) that are expressed through art and symbolism. As these beliefs are so peculiar to one culture, very often the meaning behind the iconography and symbolism of the art is lost or altered in translation from one culture to the next. Even in the case of the full transference of a motif into another culture, the motif is imbued with its own meaning in its new context. For example, the Minoan Genius, originally imported from Egypt as Tawaret, the part hippopotamus, part crocodile and lion goddess of fertility and childbirth, over time became acclimatized to the Aegean as a figure with a “Minoan cinched waist,” “taking up a Minoan ewer” in Minoan rituals that were probably very different from those practiced.
in Egypt (Crowley 1998:174). This is a case where the local motif superficially resembles its foreign motif (and probably retains some form of original meaning, such as the protective role of both goddesses), but which was adapted for local needs.

At other times, motifs on objects or novel ideas are not readily understood by the receiving culture because there is nothing comparable to them in the local repertoire. The motifs are misidentified, leading to a distortion of the original motif into something more relatable to the local culture. One example of this principle at work is the case of European porcelain painters not understanding the Japanese bamboo fence motif on imported Asian porcelain during the 18th century CE. Since there was no bamboo in Europe, the European painter did not grasp what was being represented, and so rendered the bamboo as a simple X design (Emerson and Chen 2000:165). In this case, as the foreign or novel motif does not resonate with the members of the society, the motif was just a picture or feature like any other. As such, the artisan was free to alter and combine the motifs in any way that would suit the aesthetics of the copy, regardless of the meaning of the motifs in the giving culture.

As these examples demonstrate, there were many ways in which “errors” could creep into the manufacture of copies over time. Over time, the repeated imitation of copies of copies is prone to distort the original “blueprint” of the prototype, resulting in types of skeuomorphs that still retain part of the “message” but not all of it. The resulting hybrid form of copy—which displays some features of the original model, but with variations—has long been recognized in the archaeological literature. Frequently, these types of skeuomorphs have been given their own labels: “Egyptianizing,” “Minoanizing,” “Hellenized,” “Perserie,” “Orientalizing,” and “Chinoiserie” objects, to name a few examples from different time periods and locations.
While it is evident that any act of creativity involving the process of imitation will invariably produce variation and, hence, change over time, what is less certain is the rate by which this change occurs. There are many factors that may affect the pace that “errors” accumulatively begin to affect the appearance of skeuomorphs. One factor that affects the rate of change is the frequency of imitation. By all accounts, vessel types more prone to breaking do tend to display more rapid morphological changes over time due to higher production volumes, and, hence, more chances for the introduction of variation (Wood 1990:86). Thus, objects used for daily use, such as cups and cooking pots, for example, tend to display a faster rate of morphological change then, say, larger vessels such as pithoi, which do not tend to break as often. Other factors that may affect production volumes include: demand for the product; cost and ease of use of the materials; as well as curation rates. Objects that are curated, such as heirlooms, vessels with high intrinsic values, or vessels used in cultic contexts (Wood 1990:93) do not exhibit as many morphological changes over the same period of time as other vessels, not only because they are less often reduplicated, which lessens the chances for the introduction of “errors,” but also because there is a concerted effort by the members of the society, for tradition’s sake, to resist modification to these objects. The same efforts also explains the reason that preservational skeuomorphs are less likely than aspirational skeuomorphs to change over time. These types of copies tend to remain truer to the original blueprint of the prototype over time as there is more interest in preserving the features that evoke earlier, more traditional forms. Thus, while it can be said that adaptations represent a certain stage in the emulation and imitation cycle, it is useful to remember that the rate of change for each individual set of skeuomorphs is different.

**Derivation**

With the increased imitation of copies of copies, the process of adapting motifs, mixing styles, and altering shapes and surface treatments only increased in frequency as well. As
a result, *derivations* tend to have the least similarity in appearance with the prototype. The line separating adaptations from derivations is defined by Miller as the point where “a foreign approach to surface treatment or profile is applied to a traditional local form” (Miller 1997:136). In practice, due to the fact that the change over time naturally occurs along a spectrum (see Figure 3), it is often very difficult to draw that line between an adaptation and a derivation. While Miller’s definition serves as a useful point of departure in describing the differences between the two types of copies, one can argue that it is not sufficient. What would further help define derivations is the concept of “dilution.” By dilution, it is meant that, by this stage, the pool of novel or foreign features (individual motifs, shapes, decorative treatments) introduced by the original prototypes into the culture has been so watered down in appearance by alteration, mix and matching, and wide distribution that it is often difficult in attributing a source of origin to any of these features. It is difficult to attribute source because, by now, some of these features have either become generalized (for example, a specific Chinese motif like the prunus plant becoming a generic flower in 18th century CE European porcelain pottery), standardized (like the grey slip surface treatment on much of Middle Helladic pottery), or stylized (like the grooves and flutes on Near Eastern bowls evolving to conventional groove types on some Athenian ceramic wares in the fifth century BCE).

By the derivative stage in the emulation and imitation cycle, some of the novel or foreign attributes of the original prototype (in the form of motifs, decor, features, details), now grafted onto traditional local shapes, often result in something quite new. In the realm of evolution of technology, this “new thing” is called a technological innovation (Basalla 1988), whereas in material culture studies, it is often called a new *style* of object. The novel motifs and features once reserved for a select group of objects (such as a limited drinking set) have now expanded to local traditional forms (such as shapes not considered part of the drinking set). The derivations themselves usually also have a wider
contextual distribution than the original prototypes (and their skeuomorphic copies). In the example of the British varnish mentioned earlier (Berg 2002:19), once varnish “jumped” to local shapes and objects outside of the purview of traditionally lacquered objects (from wooden furnishing and coach panels to buttons, tea trays, and vases, for example), they became “their own thing” with their own meaning and purposes within the society. As skeuomorphs were defined in section 2.II as objects with the same functions and purposes as their prototypes, derivations, therefore, are not hereby considered skeuomorphic per se.23 The exclusion of derivations from the panoply of skeuomorphic objects complies well to the new roles that they find in the society. Now with their own roles to play, these objects, in turn, may then become the prototypes instigating their own cycle of emulation and imitation.

2.IV SKEUOMORPHS IN THE ARCHAEOLOGICAL RECORD

Having now offered a new interpretation of skeuomorphs based on the perspective that the processes of emulation and imitation are able to address many of the characteristic attributes and roles of these objects (see sections 2.II, 2.III), it only remains to extend this interpretive model to the archaeological record. In this section, then, I discuss how various types of skeuomorphs may find expression in the archaeological record; how one might use this knowledge to “re-construct” hypothetical prototypes; and, also, what one might expect from the Middle Minoan ceramic assemblages of Knossos and Phaistos viewed from the perspective of this interpretative framework.

According to the definition of skeuomorphs proposed here, I suggest that these objects are basically objects that refer to, as well as act on behalf of, other objects for

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23 Even though these objects are not considered skeuomorphic, it is worthwhile to discuss them in this study as they complete the emulation and imitation cycle. Also, it is often difficult to differentiate an adaptation from a derivation in the archaeological record; thus, it is worthwhile to know what they look like and how they behave.
groups of individuals without access to the original prototypes. As signs that naturally embody some of the physical characteristics of the original models, skeuomorphs derive their meaning from the type of associative relationship between themselves and the particular objects they emulate, either due to a contiguous, causal, or performative relationship with the originals or due to a shared similarity in appearance (see Knappett 2002; 2005:85–100 and also pp. 39–40 above). Skeuomorphs that share an indexical association with their referents naturally have a strong resemblance to their prototypes, given the direct, causal relationship between the model and its copy. Icon type skeuomorphs, on the other hand, only share a similar “look.” Naturally, this “look” is predicated on the quality and quantity of markers conferred on the copy. The more a copy is endowed with qualitatively accurate markers (such as size, color, decoration, materials, shape), the likelier the mind is to make a cognitive leap to the original model based on the Gestalt principle of similarity, which tends to automatically perceive two objects that share similar attributes as being alike (Köhler 1947:120), as well as the concept of stimulus generalization (Pavlov 1927), which fuels the expectations of the copy to perform in the same manner as the original due to the tendency of the mind to make generalized conclusions about the copy based on its similarity in appearance with the prototype (see also pps. 41–43 above). Of all the variations of skeuomorphs (Figure 4), counterfeits are, arguably, the ones with the strongest physical relationship with their prototypes due to the number and quality of superficial details that liken them to their specific prototypes. As objects meant to be “passed off” as the “real things,” after all, counterfeits necessarily need to closely resemble that which they are emulating. In regards to the use of counterfeits in “re-constructing” the appearance of their presumed prototypes, these types of skeuomorphs would, in theory, be the ideal. In practice, it is often very difficult to differentiate a (good) counterfeit from its original model except through extensive inquiries into the nature of an object’s materials (e.g., neutron activation studies of ceramic forms) or through comparison of manufacturing techniques
(e.g., comparison of two metal vessels), for example. If one were not in possession of the original prototypes, therefore, it would be difficult to tell from the recovered artifact alone whether it represented the original or the copy.

In regards to other types of skeuomorphs with iconic relationships with their prototypes, the problem with determining the “accuracy” of an archaeological copy is that skeuomorphs come in a wide range of forms, exhibiting various degrees of fidelity to their presumed prototypes. Therefore, without a guiding principle to decide which skeuomorphs represent the most accurate copies, it would be difficult to “re-construct” the appearance of a hypothetical prototype. In this study, I suggest that much of the physical variability of skeuomorphs found in archaeological contexts is the result of a change over time caused by the repeated imitation of copies and the subsequent introduction and magnification of “errors” in each step of the reduplication process (see section 2.III). Thus, in theory, of all the skeuomorphs found in an archaeological assemblage, the earliest dated skeuomorphs should represent the most accurate vis-à-vis their prototypes.

In this study, the earliest, and, hence, theoretically the most accurate, skeuomorphs in an archaeological assemblage would be the group of copies hereby labeled “imitations” (see section 2.III). Archaeologically, these types of skeuomorphs would likely have some distinctive features. Given the case that emulation is often sparked by innovation (new materials or products) or novelty (foreign goods), some imitations may be recognized by their “new” or “foreign” shapes/features/manufacturing techniques, as well as by the abruptness in which these “new forms” appear in the local culture. Furthermore—and this is especially relevant in cases involving the emulation of sets of high-status objects—these “new forms” may be “substitutions for elements within, not merely additions to, an existing assemblage” (Rutter 1979:8). Thus, for example, a novel type of drinking cup, in some cases, would not be found alongside the earlier type
of cup, but would actually replace it. In addition to their sudden appearance in the archaeological record, imitations, as some of the earliest copies of the original models would also theoretically have the most “accurate” details of any kind of skeuomorph. This accurateness in appearance may be assessed by the “sharpness” of the piece (in manufacturing techniques, profile, details, etc.), decorative surface treatments in feasible locations on the piece that make sense from a manufacturing point of view of the original piece (e.g., band on a ceramic cup painted at the location that a metal band would occupy on a metal cup), and a surplus of extraneous details that may be copied “verbatim” from the original prototype in the first instance of copying, but which would not help in the functioning of the skeuomorph (e.g., a clay torus ring around neck of jug).

In terms of the production sequence of skeuomorphs, close adaptations also have the potential for being very early. From an archaeological perspective, these objects would resemble their prototypes (and share the same characteristics as imitations), but would have different appendages, like added handles or bases on vessels, or other features that might change the original method of employment of the prototype in order to suit the aesthetics of the culture making the changes.

In theory, therefore, imitations and close adaptations would be the best skeuomorphs to use in order to “re-construct” the appearance of hypothetical prototypes. In practice, these objects may be more scarce than adaptations and derivations and, thus, more difficult to find. Therefore, it pays to recognize these other types of skeuomorphs in the archaeological record as well. Adaptations represent a stage in the emulation and imitation cycle when the prototypes are being accepted and disseminated in larger quantities into the community. The number of adaptations in archaeological contexts is assumed to be higher than the original number of prototypes or imitations due to the increasing demand by a wider audience for copies of the prototypes. From an archaeological standpoint, the frequency of skeuomorphs at this stage only reflects the
value and desirability of the original model and not the quantities of prototypes in circulation (Reeves 2003:254; Davis 1977:95). In some cases, there may even be an inverse relationship between the quantities of skeuomorphs at sites and the number of prototypes available to a wider audience (Lloyd and Mellart 1965:87). That is to say that skeuomorphs may appear at sites or in contexts precisely because there are no prototypes to be had in these locations (e.g., Lloyd and Mellart 1965:87; D’Agata 2000). The characteristic feature of the adaptation is hybridity due to artistic license and the tendency to “mix and match” motifs from various original sources. This is the phase where objects are described as being “influenced” or “inspired” by a foreign culture, giving rise to labels such as “Egyptianizing,” or “Minoanizing,” terms that reflect the foreign features that have entered the local culture and are being incorporated in various new ways on the copies.

Derivations would represent the latest stages of reproduction. Archaeologically, derivations may be recognized as copies that vaguely resemble or recall the earlier prototypes. By this point in time, the novel features (shapes, decor, motifs) introduced via the prototypes would have now entered the local artistic repertoire and appear to be in some way standardized, generalized, or stylized. In general, at this stage, the novel attributes would have grafted themselves onto objects made in the local tradition, resulting in a hybrid style that is new and different from the previous tradition. The new derived objects should be readily apparent in the archaeological record as a style change (or change in fashion) within the local tradition. This change would be widespread. A process of democratization would be happening as well. Whereas (aspirational) imitations and adaptations may find themselves in more “elite” contexts, by the time derivations appear, it is possible that derivations are to be found outside of these contexts. Even the original imports may have lost their cachet and value by this time, instigating a new round of emulation with new prototypes.
Decidedly, derivations can only provide only a minimum of information about the appearance of the original prototypes. Adaptations, on the other hand, may prove useful, depending on the number and significance of the novel or foreign attributes preserved on these kinds of copies. To help draw some information about the prototypes from adaptations, one technique that may prove useful is the seriation of all skeuomorphs found in an archaeological context. Again, copies with “sharp” profiles, decorative surface treatments that mimic true to life metallic decorative techniques, and, perhaps, also non-functional or vestigial features that evoke manufacturing details of the original would be assumed to be “earlier,” whereas features that appear “diluted” in some way would be the “latest” in the series. Thus, “accurate” features that reoccur on the “earliest” examples may perhaps indicate a source of inspiration from an actual prototype.

In the Middle Minoan ceramic assemblages at Knossos and Phaistos, one would expect to see all three types of skeuomorphs. According to the model proposed here, the earliest skeuomorphs within any emulation cycle should evince the most factual “metallic” attributes within their own group. This does not necessarily mean that all the “earliest” skeuomorphs should be dated to the earliest phases of the Middle Minoan period, only that the skeuomorphs with the most accurate “metallic” features should be among some of the earliest within their own ceramic type. As the emulation of metallic prototypes could have happened at any time over the course of the Middle Minoan period, one would also expect new ceramic shapes representing the first instances of copying to also occur in any Middle Minoan phase as well. From these skeuomorphic examples, the best information about past prototypes would be drawn.

Of course, knowing which skeuomorphs to use to “recover” presumed prototypes is only the first step in drawing information from these objects in order to discuss some of the roles prototypes may have played within the emulating society. Earlier, it was noted that skeuomorphs, acting as substitutes of their prototypes, shared the same functions and
purposes as the emulated objects. Any knowledge gained about the function of skeuomorphs, therefore, could also be applied to their prototypes as well. Archaeologically, the function of an artifact may be determined either through the analysis of its formal attributes (constraints and affordances) or through its contextual relationship with other objects. A comprehensive contextual analysis of the skeuomorphs at Knossos and Phaistos is beyond the scope of this study, but it is certainly possible to draw from the physical attributes of the skeuomorphs some information about the intended function of the prototypes (e.g., as cups meant for drinking or jugs meant for pouring). From this data, one may then surmise some possible uses for the overall metal assemblage.

In Middle Minoan Crete, vessels made from precious metals would likely have been considered prestigious luxury goods that were used by the elite for status and display (cf. Moran 1992 for status of gold, silver, and bronze vessels in Bronze Age Egypt). According to the theoretical model outlined here, skeuomorphs may be sorted into two different camps depending on the sets of the values they embody as well as on the goals of the imitator. These have been labeled aspirational and preservational skeuomorphs (see pp. 51–54). Given the presumed high status of metal vessels in Minoan society and the fact that the ceramic imitations are made from cheaper materials, one would expect that the majority of the “metallic” skeuomorphs found at Knossos and Phaistos would be of the aspirational variety. Since aspirational skeuomorphs tend to be found in spaces where status display is important, and since they would occupy the same roles as the metal vessels in these spaces, one would expect many of these aspirational skeuomorphs to be found in the same kind of settings that metal vessels would have inhabited, that is to say, in “elite” palace contexts. If preservational skeuomorphs were to found in the ceramic assemblages at Knossos and Phaistos, these objects would predictably be found in contexts in which tradition plays an important part of the
activities that occur there, such as in sacred spaces, or in spaces where ceremonies reoccur to mark special times of the year. These skeuomorphs would likely betray “archaic” (traits that seem old-fashioned at the time of their appearance) or “fixed” traits that may seem to persist longer on a particular skeuomorph than any other.

All of the expectations of skeuomorphs in the Middle Minoan assemblages of Knossos and Phaistos naturally depends on being able to identify these objects in the archaeological record. As this study is particularly concerned with the emulation of metal vessels in ceramic, the following section describes some of the techniques by which the metallic qualities of metal vessels may be identified in the ceramic assemblages from Knossos and Phaistos.

2.V RECOGNIZING “METALLIC” QUALITIES IN CERAMICS

“Metalness” in ceramic vessels can be signaled in three ways: by mimicking qualities inherent of the original medium (metal); by exhibiting structural details that are intrinsic to the manufacture of metal vessels, but which may serve no functional purpose in another medium or may prove detrimental to the structural integrity of a vessel in another medium; and by displaying specific features of metal vessels, such as shape or decorative techniques, which are endemic to the region in which the vessels were produced. One need only capture the “spirit” of the original in order to evoke its metal properties.

Metal, as a medium, has been, without a doubt, prized throughout antiquity for its unique properties: strength, rich color, reflective surface, and shiny luster. No other

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24 “Metalness” is a term used by Reeves (2003:18ff) to denote the quality of metal on pottery (and by extension on other materials as well). Wijngaarden uses the term “Mycenaeaness” (1999:33) in the same vein to denote the quality that distinguishes Mycenaean pottery from other pottery among consumers.
material can boast of the same grouping of innate qualities. Ceramic, by contrast, is naturally dull and opaque. As a result, shine and color may have been the most difficult element to emulate in ceramic. To mimic the lustrous property of metal, the Minoan potter had at his disposal two means of doing so: coating the vessel with a reflective slip and/or burnishing the object to a fine gloss. Emulating the colors of metal was a more difficult proposition. In the Middle Minoan period, the choice of colors for pottery was limited by firing technology and the pigments available. More often than not, it was not color of metal that was emulated per se on ceramic vessels, but the effect of light and shadow on the three-dimensional surface treatments of metal vessels.

Besides emulating the innate qualities of metal (in this case, shine and color), potters may attempt to evoke the properties of metal vessels by referencing the structural details that are inherently necessary in the construction of a metal vessel (such as rivets to attach handles or torus rings to cover joins) or by referring to features that are idiosyncratic to metal vessels due to the property of metal to retain its shape (such as extravagant spouts or distinctive handles). Such features can be identified by their symbolic nature on pottery or stone vessels—as they often no longer serve in the same capacity in the new medium—or by the fact that they may hinder the imitation’s structural integrity. An example of a symbolic feature is the clay rivet. The clay rivet, added to the rim of a ceramic vessel at the join with the handle, is clearly imitating the metal rivets used to attach a handle on a metal vessel. The clay rivet, clearly, cannot fasten a handle to a rim; it is meant to evoke a metal rivet. As rivets are only seen on metal vessels, and as they are made of metal themselves, they are the perfect signifier on a clay vessel to evoke a metal vase.

As the example of the clay rivet shows, a feature of an object that is functional in one medium is not necessarily so in another. In fact, some of the imitative features on ceramic vessels may even reduce the vessels’ functionality by weakening their structural
composition (e.g., Corbett 1949:333). An example of a feature that may undermine the strength of an object for the sake of an aesthetic look is thin ribbon handles on a ceramic vessel. Whereas the metal ribbon handle on a metal vessel is strong enough to withstand the weight of that vessel, on a ceramic vessel, thin handles are more easily broken. Some reason must be overriding functionality in this case, and this is appearance, or the intended “look.”

Even when ceramic skeuomorphs do not reference the structural details of metal vessels, the shape of a copy may still evoke metal prototypes. Potters may draw inspiration from many sources. They may either borrow from other ceramic traditions, be inspired by nature, invent new shapes themselves, or copy objects made from other materials (Betancourt 2008:33). When some of those objects are metal vessels, one is left with an assemblage of pottery shapes that may be imitations of metal vessel shapes. While shape alone can provide evidence of emulation of metal vessels, in most cases, the ceramic vessels in the shape of metal vessels will also likely have other features that refer to their prototypes as well.

Thus, according to the model proposed here, some of the “metallic” qualities of ceramic vessels may be recognized by analyzing these vessels’ shape, decorative surface treatments, and structural details. Within the next three chapters, this model is tested by analyzing the Middle Minoan pottery assemblages from Knossos and Phaistos for these traits. Each chapter tackles an individual vessel trait, both for ease as well as for maximizing the data that may be gained from each trait. Thus, Chapter 3 is concerned with identifying the “metallic” structural details of ceramic vessels; Chapter 4 delves into “metallic” surface treatments; and Chapter 5 discusses the “metallic” shapes found at these Middle Minoan palatial sites. All of the data garnered from these three chapters are summarized in Chapter 6. The final chapter returns to the model proposed here in Chapter 2 and evaluates it against the archaeological data mined from Middle Minoan Crete.
This chapter, along with next two, delves into the Middle Minoan ceramic material from the sites of Knossos and Phaistos. The goal is to identify features on ceramic shapes that may betray a metallic inspiration in their creation. If a skeuomorph is an object that is meant to evoke the idea (and the connotations) of the original model through specific markers, then to recognize skeuomorphs in the archaeological record, one needs to identify how the particular signifiers of the original artifact are being expressed in another medium. As discussed in Chapter 2, one of the three ways to identify “metalness” on pottery is to recognize those structural details that may be inherent to the manufacture of metal vessels, but not to pottery production. These structural details may entail added features that are largely symbolic in their new medium; features that may actually diminish the structural integrity of a ceramic vessel; or features that are particular to metal vessels due to the property of metal to retain its shape.

Naturally, in order to ascertain whether the structural features on the ceramic vessels were specifically inspired by metal examples, it is useful to have extant examples of metal vessels, as well as an idea of the metallurgical traditions practiced in the region under study. To get a better idea of what the Minoan’s technological choices have been, the following section describes the metallurgical techniques and styles prevalent in the Aegean during the Bronze Age.

3.1 METALWORK IN THE AEGEAN

In her seminal work on manufacturing techniques of gold and silver vessels in the Bronze Age, Ellen Davis (1977) distinguished two schools of metalworking traditions in the
Aegean at this time. She attributed these traditions to manufacturers working in Crete (Minoans) and mainland Greece (Mycenaeans). From her analysis of over two hundred extant gold and silver vessels dated to the Bronze Age, Davis was able to elicit a number of significant conclusions. The Minoans, in general, produced more complex artifacts, making use of the compass and turning wheel, mastering such techniques as cold hammered inlay, fusion, and casting, and liked to strengthen their creations with copper cores or rings as well as secondary linings on the interior, especially where the exterior walls were thin due to repoussé work (Davis 1977:45, 122, 146, and 329–330). Cretan smiths preferred to work with silver for their fine tablewares and apparently had a fondness for color contrast, which was achieved through the practice of gilding, silver-plating, patination, inlaying, and perhaps the use of a “niello”-like substance (Davis 1977:330–332). Mycenaean pieces were, however, more grandiose in size, and, at least in the Shaft Grave period, unsparing in their use of gold (Davis 1977:146).

1 The use of true niello in the Bronze Age is still debated (see Laffineur 1974; La Niece 1983; 1993; Thomas 2005; Xenaki-Sakellariou and Chatziliou 1989; Boss and Laffineur 1997). It seems, though, that some vessels from the mainland were inlaid with a dark niello-like substance (see, e.g., Davis 1977:208–220. no. 83, figs. 172-173; 284-286, no. 120, fig. 231; 302-303, no. 132, fig. 245), although the composition of this substance is not known at present. Davis has claimed that the Minoans adopted the use of “niello” from the Greek mainland (1976:4; 1977:346). Her argument is that no “niello”-inlaid dagger has been found on Crete and that some of the earliest inlaid pieces on the island were cold-hammered (Davis 1977:122). This argument is undermined, however, by the fact that all of the examples of inlaying and “niello” work cited by Davis are said to be of Minoan manufacture (1977:346). Furthermore, with regards to the other metalworking techniques cited by her, the Mycenaens seemed to have produced less sophisticated products than their Cretan brethren, preferring monochromatic gold vessels to multi-colored or silver ones. It seems unlikely, then, that the Mycenaens should have been the first to develop “niello,” a relatively sophisticated technique associated with the production of polychrome decoration in, mostly, silver artifacts. The lack of “niello”-inlaid daggers on Crete may simply be a result of the vagaries of the archaeological record. Davis’ attribution of the “niello” technique to the mainland seems to stem from the fact that many of the inlaid pieces are hybrids, using Minoan techniques but Mycenaen-preferred shapes and motifs. This does not necessarily imply that Minoans had to have developed the technique on the mainland, as these hybrid pieces may have been commissioned for the Mycenaean market.
In addition to the aforementioned, a number of other manufacture-related details helps to differentiate between the metalworking traditions of both regions. Perhaps the most important of these is the fact that Mycenaean artisans rolled up the edges of handles over a strengthening wire, a technique not attested on Crete (Davis 1977:328). Furthermore, mainland artisans usually fastened the handles with two flat-headed rivets, as opposed to the three slightly rounded ones normally used by Minoan smiths (Davis 1977:329–330). On straight-sided cups, Cretan artisans attached the lower terminus of Vapheio spool handles higher up on the cup’s body, giving the whole handle a tighter appearance, closer to an L-shape than the handles of similar mainland cups (Davis 1977:44). The Minoans were also fond of adding separate decorative elements to their pieces, attaching secondary rims to cups and basins as well as masking joints on ewers with torus moldings—the latter often gilded for color contrast (Davis 1977:341–343). The only structural detail that seems to appear first on the mainland is the raised base, composed of a concentric circle and a boss in the center. Even though this type of base occasionally occurred in Crete, it appears to have been a later development (Davis 1977:328–329).

The preferred materials for smaller metal vessels in the Aegean during the Bronze Age appear to have been silver and gold (Davis 1977). Bronze and copper were used mainly as filler for body parts on smaller tablewares (which were then sometimes gilded or silver-plated, one suspects in order to economize on the scarcer gold and silver), or as strengthening agents, such as wire reinforcements or rivets, which were also sometimes gilded (Davis 1977:337–338; Matthäus 1980:328). At times, these bronze and copper elements were not plated, providing more color contrast to the piece. In general, however, bronze was used for bigger vessels, such as jars, jugs, basins, cauldrons, lamps, or

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2 The third, center rivet, being mainly decorative (Davis 1977:330).

3 For examples, see Davis 1977:150, 157, 260, 272, and 297.
cooking pots (Matthäus 1980). The latter vessels were so large they often required the use of several sheets of raised metal, which joined together along the edges with small rows of copper rivets (Matthäus 1980:327, pls. 1–2, 8, 22–31, and 35). With few exceptions, larger bronze vessels were usually left plain, which was the opposite treatment for the smaller gold and silver metal vessels. While there do exist some silver and gold metal vessels with no adornment, most metal vessels in these materials are decorated in some way, the most common decorative techniques being repoussé and inlay work. The motifs produced by repoussé ranged from simple linear devices to elaborate figural scenes (see Davis 1977:106–107, no. 15, figs. 79–80 for an example of the former and, for examples of the latter, Davis 1977:1–58, figs. 1–13; 222–227, no. 86, figs. 176–180). Some repoussé designs that have appeared on metal vessels in the Shaft Graves include bulls, rosettes and palm trees, spirals, arcades, foliate bands, lions, and fluting (e.g., Davis 1977:109–110, no. 19, figs. 87–88; 173–174, no. 57, fig, 142; 204–208, no. 82, figs. 169–171; 235–236, no. 89, fig. 185; Reeves 2003:29). Examples of inlay motifs that appear on metal vessels from mainland sites include rosettes, double axes, bulls’ horns or heads, male heads, and nautili (e.g., Davis 1977:118–123, no. 24, figs. 95–97; 208–220, no. 83, figs. 172–173; 263–266, no. 109, figs. 210–213; 300–302, no. 131, fig. 244).

Relying on the knowledge of Aegean metallurgical traditions and practices as discussed above, the following sections list some of the “metallic” structural details that have been identified in the pottery assemblages of Knossos and Phaistos.
3.II STRUCTURAL DETAILS

3.II.1 “RIVETS”

Perhaps one of the most easily identified “metallic” features on a ceramic vessel is the clay “rivet” or protuberance. Rivets play a pivotal role in affixing the handle or spout to the body of a metallic vessel or in joining two metal plates together. Their clay counterparts, however, are largely symbolic. On Cretan Middle Minoan pottery, clay protuberances in the form of rivets are attested on certain types of jugs, bucket and cylindrical jars, rhyta, bowls, cups, and kantharoi.4

Jugs and Jars

A small number of Middle Minoan jugs or jars display clay protuberances at the location where one would expect a metal rivet, on top of the handle, at the point where the handle joins the rim. On closed-necked jugs, the clay rivet is relatively rare. It is only known from Knossos or Phaistos on one type of closed-neck jug with trefoil rim (JUG 3) from the Southwest room of the “Royal Pottery Stores” at Knossos (MacGillivray 1998, pl. 23:668 and 110:668 [4:1]; MM IB to MM IIA). This jug is decorated in vertical white and red stripes on a black ground, and has an unusual trefoil rim for jugs of the period. It may be a unique type of jug. The clay rivet appears more commonly on jars, such as on bridge-spouted jars (BSJ), bucket-jars (BKT), and cylindrical spouted jars (JAR 1). Three bridge-spouted jars were found with clay rivets. The first is a bridge-spouted jar from Malia (Poursat and Knappett 2005, fig. 17.7 [4:2]). This jar had a rounded profile, no horizontal handles, and one vertical handle opposite of the spout. The lone vertical handle

4 Here, an ewer is specifically defined as a small jug with a narrow neck, a high handle and, usually, a high spout. The term “jug” is used for a type of (small to medium sized) container with a beaked spout or folded rim for pouring. The jug usually has between one to three handles attached to the rim. A “jar” is defined as a (usually larger) container meant for holding liquids or solids. They may have flat rim, wide neck, and body handles to aid in decanting the material inside.
is a feature seen on some of the angular-shouldered jars from this site (see BSJ 1). If the date of the angular-shouldered jars from Malia are as early as those found at Knossos, which date to within MM IB to MM IIA (see BSJ 1), perhaps this particular jar with clay rivet was one of the first types of bridge-spouted jars at the site made with a rounded shoulder (following a new model of jar). This may explain the “sudden” appearance of the clay rivet on a jar type that has some continuity from an earlier age. Two other ceramic bridge-spouted jars with clay rivets were found at Phaistos. One jar is an unusual type of bridge-spouted jar with a carinated body and shoulder (Levi 1976, pl. 28g [4:3]). With its low, “boxy” shape, it is similar in profile to some cylindrical spouted jars (JAR 1), some of which also display clay rivets (see below). It is dated to MM IIA (Fase Ib iniziale). The other is a low, squat bridge-spouted jar with two horizontal handles (Pernier 1935, fig. 176). The rivets are found at the base of the handles, again, just like on the cylindrical spouted JAR 1 (see below). This vessel was found in an MM II context. The final jar type with rivet is the bucket jar (BKT), which, in some sense, is also another form of cylindrical spouted jar. One example was found with a clay rivet (Levi 1976, pl. XLIIIc [4:4]). In all these examples, the rivet occurs on the vertical handle opposite the spout, but does not occur on the side handles. If this were representative of the actual metal prototypes, perhaps the vertical and the side horizontal handles were attached by different methods.

Cylindrical Spouted Jars

Two unusual spouted jars (JAR 1) have very distinct rounded clay rivets at the base of the spout and handles where these features meet the rim. One of the jars has an upper covering (Levi 1976, pl. XLIIa [4:5]), whereas the other one is completely open (Levi

5 The illustration of this jar in Levi and Carinci 1988, pl. 60g gives the impression that the vertical handle (and rivet) opposite the spout was reconstructed. In the photo of the same jar (Levi 1976, pl. 28g), the handle appears to have been glued together from original pieces. One wonders why the conservator would have added a clay rivet here if it was not an original feature of the piece.
Both examples of this type of vessel were found at Phaistos and are dated to MM IIA (*Fase I* *iniziale?*) and MM II, respectively. The latter jar, decorated with a petal rim, has three handles, two horizontal handles that rise above the rim and one vertical handle opposite of the spout. Each handle end is adorned with a flat, red-painted rim where the handle meets the rim. The other spouted jar also had horizontal handles that rise above the rim, but due to the preservation of the vessel, it is not known if it also had a vertical handle (Levi 1976, pl. XLIa). In this case, the rivets are painted black to match the color of the handles and spout. Unlike the other jar, this cylindrical spouted jar also had two rivets at the join between the spout and the body. This is the only ceramic jar known with rivets at the spout. The rivets are conspicuous, and one wonders whether they were meant to be so because this is how they would have appeared on the metal prototype. If they are representative of the actual manufacturing technique of the vessel, they are unusual in that they join the appendages to the top of the rim, as opposed to from the side, under the rim, as seen on other metal vessels with horizontal handles (e.g., Matthäus 1980, pls. 1–18, 22–23, 44, and 52). The conspicuousness of the clay rivets and the method of attachment do not seem to follow established Minoan metalworking practices. One wonders then if the original metal vessel was not imported from another region with a different riveting tradition. On the other hand, perhaps the clay rivets are, again, just signaling the metal quality of the vessel and nothing more should be read into their placement.

**Bowls**

While many bowl shapes appear to be modeled on metal prototypes (see 5.III Bowls), few display clay rivets. The exception is a deep bowl shape (BWL 3) with two handles that may be related to certain kantharoi shapes (Levi 1976, pl. 120a). It has two large flat circular “rivets” at the top of the handle, at the join with the rim. The handles appear “laid-on.” The reason that most bowls and cups with handles may not display clay rivets
may have to do with the manner in which the handle is attached on these metal vessels. In most cases, the handle is folded over and fastened somewhat lower on the body with rivets pushed in from the inside of the vessel (see for example, Davis 1977, figs. 137 and 139 for a close-up of rivets on the inside of a cup with handle, which one imagines would be the same riveting technique on bowls), which, for some reason, is not emulated, perhaps because the rivet heads would not be seen when the vessel was filled. On certain kantharoi and goblets with a flat or flaring rim, the handle is attached to the top of the rim rather than the underside (see for example, Davis 1977, fig. 126, a silver two-handled cup from Mycenae). In this case, the rivet is more visible at the join between the handle and the rim. The fact that clay rivets are seen on BWL 3 shapes may indicate that the original handle attachment on metal bowls of this sort was on the top and not the underside of the rim.

Rhyta

According to Koehl’s typology of Aegean rhyta (Koehl 2006), the only rhyta dated to the Middle Minoan period that feature clay rivets occur on Type II RS/SH Piriform shapes (see Koehl 2006:85, fig. 5:78 and 5:82). This trait does occur on other Type II examples, as well as other Type III Conical and Type IV Cup rhyta, but these are later in date. The Type II Piriform rhyta are vessel-shaped (as opposed to figural) and are related in form and construction to certain ewers (JUG 1), except for the base (see under 3.II.2 Torus Ring and Separate Necks for manufacturing details). Just as in the case of the ewers and jugs, the clay rivet at the juncture of the handle and the rim—as well as the torus ring set

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6 These include Type II RH Piriform (Koehl 2006, fig. 14:380), Type II NH Ovoid (Koehl 2006, fig. 11:282), Type III CV Conical (Koehl 2006, fig. 18:451, fig. 20:510, 512, and 513, fig. 21:551, fig. 22:567, and fig. 23:572 and 584; Type III S Conical (Koehl 2006, fig. 27:631 and 634, and fig. 30:660 and 663), and Type IV Cup shapes (Koehl 2006, fig. 43:1179, 1182, and 1228, fig. 44:1232, 1238, and 1247–1248, and fig. 45:1282 and 1285). Only the Type IV cups are uniquely Late Minoan; the other types begin in the Middle Minoan period.
around the necks—on Type II rhyta points to their metallic pedigree. One of these Type II Piriform rhyta also has a cut-out petal rim. This rhyton (Levi 1976, pl. XLVb [4:8]; see also RHY 3). The other rhyton dated to the Middle Minoan period with a clay rivet is a piriform vessel covered in barbotine “barnacle work,” from the upper shoulder to the lower body (Dawkins 1902–1903:259, fig. 37; also Koehl 2006:85–86, fig. 5:82). It was found at Zakros, in House K, and given a MM III date (Dawkins 1902–1903:259). If one considers, however, that barbotine decoration was far more common during the MM IA–IB period, it seems likely that the vessel had remained in circulation as an heirloom before entering the archaeological record during the MM III period. It is unlikely that barbotine as a surface treatment has any relationship to metal vessels, but it seems clear that the clay rivet is meant to evoke the “metallic” character of the vessel.

Kantharoi

One of the fortuitous discoveries in Crete was the find of a silver lobed kantharos at Gournia (Boyd Hawes et al. 1908, pl. C.1; also Davis 1977:87–102, no. 12, figs. 65, 66 [4:9]). With such direct evidence that metal vessels of this type were once present in Crete in the Middle Minoan period, one really does not need to make evident the “metallic” nature of the ceramic copies. Nevertheless, the discovery of the silver kantharos as well as the almost-identical ceramic copy from the Isle of Christ, near Malia (van Effenterre and van Effenterre 1963:109, pl. XLIV:7822; also Davis 1977:89, fig. 67 [4:10]), presents a unique opportunity to compare the metal and ceramic handle attachments. The handles on the silver kantharos were attached just outside of the rim by two rivets and to the body by one rivet on the outside. On the identical ceramic copy, however, one large pellet is visible at the top of each handle, near the rim (Davis 1977:89, fig. 67 [4:10]). This confirms the notion that the single clay rivet on ceramic imitations are not “true to life” in most cases, but are just symbolic. The clay rivet also occurs on a lobed kantharos from Gournia (Boyd Hawes et al. 1908:60, pl. C.2; Evans 1921, fig. 139c [4:11]) and at
Anesmospilia as well (Sakellarakis and Sapouna-Sakellaraki 1997:424, fig. 393 [4:12]). As the kantharos is most likely an import from Anatolia (see 6.II.1 Origins. Anatolia and the Near East), the ceramic rivet on these types of vessels is likely emulating the metallic quality of these foreign imports.

**Cups**

The tall carinated and lobed cups are probably related in shape and origin to imported metal kantharoi (see CT CUP 2). As some kantharoi have clay rivets, perhaps it is should not be surprising that some tall carinated cups do as well. One example is a spouted and lobed carinated cup from Pseira (Evans 1921:192, fig. 139d [4:13]; also Seager 1910:19–20, fig. 5; also Betancourt 1999:113–114, ill. 37, fig. 12, pl. 17A). This cup has three handles—two horizontal side handles and one vertical handle opposite the spout. Just like on the cylindrical spouted jars, bride-spouted jars and bucket jars (see above), the clay rivet occurs on the vertical handle, at the join between the handle and rim.

The only other cup types that have been found with a clay rivet are the demitasse (DT CUP 3) and a unique type of fluted cup (Pernier 1935, pl. XXVII bottom [7:1]). The demitasse cup type may also have been an imported shape (see under DT CUPS). The example of the demitasse with rivet is a globular type with off-set rim and small incised lines around the shoulder (Levi and Carinci 1988, pl. 81g [4:14]). The fluted cup is painted white with an orange band, which is likely imitating an ornamental band (see 4.IV.1 Band with Dots).

**3.II.2 TORUS RINGS AND SEPARATE NECKS**

With the exception of certain bowls and cups that sometimes had a separate inner lining, most silver and gold metal vessels in the Aegean were formed by raising a single sheet of metal plate into the desired shape (Davis 1977). For the artisan working on large closed
shapes with constricted necks, such as certain jars, jugs, rhyta, and ewers, hammering up the vessel from the inside or adding decorative touches to the body after the vessel was finished was made more difficult with a closed neck. Many times, the solution for this predicament was to fashion a separate neck and later attach it to the body, either at the base of the neck or at the shoulder. Then, in order to mask this join, a separate torus ring\(^7\) (i.e., a molded band that went around the join) or an added band of metal decorated in repoussé work was sometimes attached to the vessel at this point with small rivets\(^8\) (see Davis 1977:149–155, no. 43, figs. 120–122; Matthäus 1980:252–253, 179–180, 188–190, 201, pl. 31:252–253, pl. 32:259 and 261, pl. 33:281–283, pl. 34:285–287, and pl. 36:303 for examples in metal). In addition to covering the join, the torus ring or added band on metal vessels provided additional support at the weakest point of the vessel. On ceramic (or stone) vessels, even though the torus ring or added band was sometimes faithfully copied, these features served no functional purpose in these media; they were only served as signifiers of “metalness.” On ceramic vessels, the torus ring is usually represented as an applied band of clay or as a raised ridge around the neck of a vessel.

There is evidence that the torus ring and, at times, the whole neck of a metal vessel was covered in (or made from) a different material than the rest of the vessel’s body. Traces of gold foil were found around the mouth and shoulder torus of the bronze jar with spirals from Shaft Grave V at Mycenae (Karo 1930, pl. CXXXIV; also Davis

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\(^7\) This ring becomes so iconic for some shapes, like the “sacred ewer” (JUG 1), that even when the vessel is made from one single piece of metal, the ring at the base of the neck is still included, even though it serves no practical function. In this case, one wonders if the vessels that display the ring, but were made from one piece of metal, are not later “counterfeits,” i.e., Mycenaean copies of Minoan vessels (contra Davis 1977:135 and 191), as all of these vessels were found at Mycenae (Mylonas 1972–1973, pl. 16a and 16c; Karo 1930, fig. 40; only rim found, but probably same type, Karo 1930, pl. CXXIII) in MH III–LH I contexts.

\(^8\) Not all large bronze jars have a torus ring at the neck. See Matthäus 1980:163–173, pls. 25–31 for “plain” bronze jars. Only those jars with repoussé work on the shoulder display this feature. The added decorated band at the shoulder join may have served the same purpose as the torus ring (Matthäus 1980:179–189, pls. 32–34). All jars, however, were made in several pieces, with the majority having a separate neck.
1977:149–155, no. 43, fig. 120), on the torus ring and parts of the neck of the silver ewer from Grave Alpha at Mycenae (Mylonas 1972–1973, pls. 16a and 16c; also Davis 1977:134–136, no. 29, figs. 106–107), and on the handle and the interior and exterior of the silver ewer neck from Grave IV at Mycenae (Karo 1930, pl. CXXIII; also Davis 1977:191–193, no. 66, figs. 154–155). The gold foil did not extend to the rest of the body, indicating that “the gilding was probably applied to the upper part of the ewer only, leaving the silver of the globular body exposed to contrast with it” (Davis 1977:135). The contrasting metals were not limited to gold foil. A copper ewer neck found in Shaft Grave V at Mycenae was coated in a thin layer of silver plate (Karo 1930:152, figs. 67–68; also Davis 1977:162–163, no. 49, fig. 129). The practice of gilding and silver-plating precious objects was a characteristic feature of Minoan metalwork (Davis 1977:331), not only for economic reasons, but also apparently due to a Minoan preference for color contrasts. The latter is further suggested, for example, by the Minoan practice of gilding stone vases (Warren 1969:163) and other precious objects (Evans 1921:235, 252, 451, 458, 472–473, 469–470, and 675–676, pl. V, fig. 189a–b; 1930:432, fig. 132; Branigan 1974:95; Davis 1977:96–99 and 341–344). That the neck and/or rim and torus ring were gilded or silver-plated would seem to fall within this practice.

The torus ring enters the ceramic repertoire in the Middle Minoan period and continues into the Late Minoan period on some ceramic ewers, jugs, pithoid jars, stirrup jars and many types of rhyta (Furumark (1972:8; Koehl 2006, Type II rhyta, figs. 5–11, pls. 9–20). In the Middle Minoan period, the torus ring on ceramic vessels only appears on a particular type of ewer with a cut-away spout (JUG 1), a jug with flat rim (JUG 5), a stand (STD 1), and on some types of rhyta (e.g., RHY 3).
Ewers of type 1 (see JUG 1) occur in metal,\(^9\) stone,\(^10\) and ceramic [5:1-2]. All display the torus ring at the base of the neck, even those found in later (LM) contexts. One of the earliest ceramic ewers with torus ring seems to be one from Phaistos (Levi 1976, pl. XXVIIb [5:3]), which was found in the same room as the stand with flower appliqués (STD 1) and the low stand with petal rim (STD 2) (STD 1: Levi 1976, pl. XXVIIa [5:7]; STD 2: Levi 1976, pl. XXVIIc). The added torus ring on the ewer is painted white, perhaps reflecting the use of a different metal for the torus ring (the white color may suggest a silver or gilded torus ring). The color contrast between the neck and body is more evident on the four similar ewers from Knossos (Evans 1935, pl. XXIXd and XXIXf; also MacGillivray 1998:147, nos. 542–545, pls. 90–91 [5:4-5]). Only one is complete, whereas on the others, only the neck and a bit of the shoulder were preserved. One was restored based on the appearance of the complete ewer. On all examples, the front of the spouts were painted a creamy white (leading Evans 1935:120–121 to class them with his “creamy-bordered ware”) except for the lugs on the side of the spout, which were painted orange with a red dot on top. The body of the complete example was painted black with large white open running spirals with orange dots at the center. Enough of the neck fragments were preserved to indicate that the body of these vessels was also black. The torus ring was seemingly painted black on three examples and orange with added red dots on another (MacGillivray 1998:147, no. 544). A large red, vertical, foliate band was preserved on the spout of three examples. It is possible the other example also had the red foliate band, but much of the paint from this vessel has worn away. An almost exact foliate band executed in repoussé is seen on a gold straight-sided cup from Shaft Grave IV at Mycenae (Karo 1930, pl. CX; also Davis 1977:173–174, no.

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\(^9\) Later examples of metal JUG 1 were found at Mycenae, in Grave Alpha (Mylonas 1972–1973, pl. 16a and 16c; Davis 1977:134–136, no. 29, figs. 106–107), Grave IV (Karo 1930, fig. 40, pl. CXXIII; Davis 1977:190–192, nos. 65–66, figs. 153–155, and fragments in figs. 164–166). These appear to be “counterfeits,” however (see fn. 8 above).

57, fig. 142; see under 4.IV.4 Bands with Foliate Designs), indicating that this motif was part of the metalwork repertoire of the time. Given the “metallic” structural details of these ewers (rivets, torus ring, metal antecedents), the choice of colors on these vessels becomes suggestive. The contrast between the black of the body and the white of the neck is perhaps reflective of the practice of attaching a separate neck to the body of metal vessels. The torus ring would be a reminder of this practice. The white creamy paint may be an attempt to remind the viewer that the neck was often made from a different metal material or was covered in gold or silver foil/plate. On an actual metal vessel, the foliate band may have been executed in repoussé from the back of the neck. The red color of this motif might suggest a copper or bronze neck below the gilt that surrounded the foliate band.

On one of the ewers from Knossos, the torus ring was painted orange with red dots. On Minoan metal vessels, strengthening wires (and rivets as well) were usually made from copper (Davis 1977:337). It is possible that the orange torus ring was meant to portray a copper addition (which, incidentally would “match” with the foliate band), while the red dots were meant to evoke the rivets used to attach the ring to the vessel. Even though in reality the rivets and the copper ring may have been made from the same material, the “rivets” on the ceramic ewer may have been highlighted in order to emphasize the vessel’s metallic quality (although sometimes rivets were gilded in different materials as well). That this was not an unprecedented decorative leitmotif is demonstrated by the same decoration on a jug (JUG 5) from Phaistos (Levi 1976, pl. XLIVa [5:6]). The small jug, painted all black, except for yellowish “coffee bean” shapes around the body and yellowish bands around the neck, rim, and down the length of the handle, has an orange band around the base of the neck, which is punctuated by raised red
appliqués. The shape of these appliqués match the “leaf-like” shape\(^{11}\) of the rivets found inside the rim of the electrum goblet from Shaft Grave IV at Mycenae (see Davis 1977, fig. 173 for a close-up), a vessel said to be of Minoan manufacture (Davis 1977:212). The color and shape of the appliqués, as well as the location of the orange band around the raised neck ridge, are all evocative of a copper ring with rivets. Given the very specific color scheme and decoration of all the ewers from Knossos, one wonders if these were not imitations of one metal prototype. The fact that one ewer was copied four times in presumably the exact same way lends support to the suggestion that they were copying the same metal model. Perhaps they were duplicates of one model.

Just like the ewers and jugs mentioned above, a large majority of the rhyta with closed necks—Koehl’s Type II Narrow Opening/Footless class (2006:21–31, figs. 5–11)—were equipped with a torus ring (or vestigial ridge) at the base of the neck, including those from later periods (LM) as well. This suggests that the original prototypes of these rhyta—Type II Piriform, Globular, and Alabastron-shaped (Koehl 2006, figs. 5–11)—were most likely metallic and were likely made from two separate pieces, the neck and body.\(^{12}\) Separate necks are also supported by the fact that a number of ceramic (and stone) rhyta from this class were actually made in two parts, and the fact that, in a large number of cases, the neck and rim of the vessel, just above the torus ring or ridge, is painted a different color than the rest of the body—a possible means of evoking the use of another material for the neck or of gilding/plating the neck for contrast with the body.

\(^{11}\) This “leaf-like” shape seems to have had a special significance to the Minoans. It occurs on gold and semi-precious pendants and on some stone vessels, some of which were inscribed in Linear A. Some stone vessels were even fashioned into this shape (see Davis 1977:211–212, fn. 496 for references, and Warren 1999:49, Type 23B, P287–P291, and D171-D172 for the stone vessels).

\(^{12}\) Which does not mean that in later periods, these rhyta could not take on features from other media. The shape remains metallic, but the decoration can be either imitative of metal vessels, stone materials or standard Dark-on-Light motifs.
(e.g., the rhyton with cut-out rim from Phaistos: Levi 1976, pl. XLVb [4:8]; also Koehl 2006, pl. 9:78 and pl. 9:80 [5:8]).

Most of the vessels with torus rings only have one of these features, at the join between the neck and body. The one known exception is the stand with flower appliqués from Phaistos (STD 1), which has two torus rings (Levi 1976, pl. XXVIIa [5:7]). The rings are found at the base of the bowl and on the edge between the pedestal and the foot of the stand. These too are painted red with orange dots. If these features are representative of a true metal model, this would imply that this metal vessel was constructed from three metal plate pieces—one for the bowl, one for the foot, and one for the pedestal base.

3.II.3 RIMS

Rims on clay and metal vessels may take many forms, and, apart from the list of certain rim types listed below, it may be difficult to definitely attribute any one type of ceramic rim as “metallic” in origin. Nevertheless, metal vessel rims do have certain tendencies,
which were often imitated in clay. Just like the addition of the torus ring on some closed vessels, other techniques were applied to metal vessels in order to increase the structural integrity of a piece. On Minoan vessels, the rims and handles were thickened by hammering or casting, some bases and rims were reinforced with copper wire, and occasionally the vessel was lined with an extra sheet of metal on the interior (Davis 1977:328–333, and 341 for table of metal vessels with thickened edges and rims). A thickened rim was useful in postponing the general wear and tear of the vessel, especially at the join between the rim and the handle(s) attached to it. The blunted edge also prevented someone from potentially cutting his or her lips on the edges of the vessel while drinking. On ceramic or stone vessels, these features may appear as rounded (or thickened) rims or as flat rims with straight or tapered edges. While this may be true for smaller shapes imitating metal vessels, a squared off, beveled, or flat rim on larger shapes, such as pithoi or lipped jars, may not necessarily indicate a “metallic” trait. A thickened rim on larger ceramic jars may also increase manageability of the vessel and prevent warping during the drying process as well (Betancourt 1985:100). This trait, therefore, may happen to be a necessity for these large vessels. The flat rim on certain bridge-spouted jars may also be excluded. Rather than representing a metallic trait, it is possible that the flat rim on some bridge-spouted jars may be imitating the rims of certain Egyptian stone vessels of Early Dynastic and Old Kingdom date imported to Crete sometime at the end of the MM period (e.g., Warren 1969, P589, P590, P592, and P593).

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14 Walberg argues that a flat rim on certain (small) jars and jugs is probably a “metallic” trait. She cites practical reasons for this assumption, i.e., that it is easier to make a flat rim in metal, but that a “beak [rim] is easier to pour from—a trait which is more important in a clay vessel intended for everyday use than in a luxury vase” (1987a:36). Although the argument that metal vessels were used less on a daily basis and, hence, have flat rims seems fallacious in its logic, I agree with the assumption that the flat rim on some small ceramic jugs and jars probably represents a “metallic” trait. The fact that many of the jars and jugs with flat rims have other metallic traits like torus rings or high looped handles support the metal origin of these jars and jugs.
On some metal vessels (open forms such as bowls, cups, kantharoi, goblets), the rim may not be reinforced, but may flare outwards, especially above a constricted neck. This tendency among Aegean extant metal vessels seems to have been a purely aesthetic choice on the part of metalworkers of the region (for examples, see Davis 1977, figs. 50, 52–53, 60–61, 64, 82, 93, 126, 128, 132, 143, 156, 170–171, 176–177, 187, 198, 214, 217, 222–224, 232–233, 239–240, 248, 253, 260, 262–264, and 266). Due to this practice, many metal vessels, and, hence, their skeuomorphs, have a generalized S-shaped profile. A flaring rim and constricted neck do not, on their own, indicate a “metallic” prototype; the whole overall shape and other “metallic” characteristics should also be considered when identifying an imitation of a metal vessel.

In contrast to the general forms of certain metallic rims, there are some rim types that are clearly imitative of certain metal prototypes. These include “multiple-lobed,” “added rims,” and “cut-out petal rims.”

Multiple-lobed and “Crinkled” Rims

Ceramic vessels with multiple lobes (four or more)\(^{15}\) are often thought to have metallic antecedents. Lobes are defined as any rounded projection extending from the rim. When there are many, small, short convex projections at the rim, this is deemed a “crinkled” rim (like a pie crust; Evans 1935:134–135 calls them “crinkly borders”). An example of a multiple-lobed vessel is the silver kantharos from Gournia (Boyd Hawes et al. 1908, pl. C.1; also Davis 1977, fig. 66 [6:1]). This two-handed vessel was constructed from two fairly thick metal plates. The lower plate forms the conical base and the sharply carinated body. The upper plate, hammered into four convex lobes, was then attached to the body at the neck. The lobes comprise the rim of the vessel. On the almost-identical ceramic copy

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\(^{15}\) The lobes and the undulations discussed here are decorative features. One lobe (or maybe even three?) on such vessels as jugs or cups are generally understood as being more a function of pouring rather than necessarily representing a metallic trait.
of the Gournia kantharos, found at the Isle of Christ, near Malia, the lobes are formed by pinching the clay into lobes (van Effenterre and van Effenterre 1963, pl. XLIV:7822; also Davis 1977:89, fig. 67 [6:2]). On the ceramic kantharos, the lobed rim seems to defy the constructional parameters of the vessel. Whereas the strength and rigidity of metal is able to support the lobes on metal vessels, the presence of lobes on a clay copy can actually weaken the structural integrity of the piece. If it were not already patently clear that the clay kantharos was imitating the silver example, the fact that the ceramic vessel was exhibiting traits that seemingly compromised its own stability would in itself be suggestive that this object was emulating an object in a different medium. That this was so is supported by the number of vessels with lobed rims that feature clay rivets at the join between the handle and the rim. Clay rivets occur on the kantharos from the Isle of Christ (van Effenterre and van Effenterre 1963, pl. XLIV:7822; also Davis 1977, fig. 67 [6:2]), on a painted kantharos-shaped cup from Gournia (Boyd Hawes et al. 1908, pl. C.2; also Evans 1921, fig. 139b; Davis 1977:89–90, fig. 71 [6:3])—found in the same tomb that contained the silver example—on a kantharos from Anesmopilia (Sakellarakis and Sapouna-Sakellaraki 1997, fig. 393 [6:4]), and on a lobed carinated cup (CT CUP 2) from Pseira (Seager 1910:19–20, fig. 5; also Evans 1921:192, fig. 139d; Betancourt 1999:113–114 fig.12, pl. 17A; Davis 1977, fig. 72 [6:5]), which, according to Davis is a form that “merges the lobed kantharos with the typical Minoan bridge-spouted vessel” (1977:93–94). (See under 5.X Kantharoi for further information about this shape.)

Once the lobed rim and the undulating rim were absorbed into the general repertoire of decorative traits on ceramic vessels, it becomes more difficult to identify hybrids (adaptations) or derivations and those that are genuinely copying metal prototypes. How then to differentiate between the two?

Returning to the only extant metal example of a lobed vessel from Crete, the silver kantharos from Gournia features four lobes that are arranged symmetrically around
the rim. As a general rule, there is a certain exactitude in the execution of a metal vessel. All elements are planned and not left to chance. Decorative features are all rendered in the same manner, in the same size, and in equidistance. Consider, for example, Minoan work from the Mycenae Shaft Graves: the flutes on straight-sided cups, the placement of spirals, rosettes, and arches on cups and goblets, the relief decoration on the Siege Rhyton, and similar-sized whorl shells on added rims of cups (Karo 1930; Davis 1977). Working with precious materials leaves little room for error. Given this attention to detail, it is unlikely that a close copy of a metal vessel will exhibit asymmetrical or haphazard elements. The lobes would look “sharp,” such as on the bowl (BWL 4) from Phaistos with a flat base and four lobes (Levi 1976, pl. XXIa–b [6:6]), a medium-sized carinated cup (CM CUP 2) from Knossos (MacGillivray 1998, pls. 151:1030 and 153:1030 [6:7]), or a carinated cup with a “trefoil leaf” motif from Phaistos (Levi 1957–1958, fig. 9, middle [6:8]). Furthermore, all the examples of multi-lobed metal vessels from the Middle Minoan period (silver one from Gournia) and later periods (e.g., the gold cup from Midea; Persson 1942, figs. 88:5 and 119:5, pls. IV:1–2; also Davis 1977:267–269, no. 110, figs. 214–216) have large petal-like lobes (symmetrically arranged in two, four, six, or eight lobes). This would suggest that the carinated cup (CT CUP 2) from Pseira with eight lobes (Seager 1910:19–20, fig. 5; also Evans 1921:192, fig. 139d; Davis 1977, fig. 72 [6:5]) and a shallow bowl (BWL 5) from Knossos (MacGillivray 1998, pls. 1:50, 32:50, and 37:50 [6:9]) with four lobes and two high up-swung handles are also probably drawn from metallic prototypes. Other vessel types with symmetrical lobes include two shallow bowls (BWL 5) with horizontal handles from Phaistos (Levi 1976, pls. XIIa [6:10] and XIIIa [6:11]), a footed, shallow carinated bowl (BWL 5) from Knossos (Evans 1903, pl. II.2a–b [6:12]; also MacGillivray

16 It seems that the Mycenaeans had not quite mastered many metalworking traditions in the early period of the Shaft Graves. As they became more proficient, so did their execution of metal vessels (Davis 1977).

17 I have yet to see any vessel with more than eight lobes.
1998, pl. 135:926), several small cups with lobes from Phaistos (e.g., Levi 1976, pl. XVIIc [6:13]; Pernier 1935, pl. XXXIII) and Knossos (MacGillivray 1998, pls. 2:70 and 38:70), as well as a small kantharos (KTH) from Myrtos-Pyrgos (Cadogan 1977–1978:75, fig. 12 [6:14]).

No extant metal vessels have been found with a “crinkled” undulating rim.18 The closest appearance of a “crinkled” rim in metal would be on a vessel with flutes that extend to the rim. One example of type of this may be seen on a ceramic fluted cup (SS CUP 3) from Phaistos (Pernier 1935, pl. XXVII bottom [7:1]). The rim undulates, but only because of the fluted body. This vessel also displays other “metallic” traits. There is a clay rivet at the handle, the body of the vessel is painted white (perhaps signifying gold or silver), while the center is surrounded by an orange band punctuated by red dots, a feature that may be alluding to added decorative bands (see section 4.IV.1 Bands with Dots). This fluting is different from the “crinkled” rim. On ceramic vessels with “crinkled” rims, the top of the rim is pinched to form small undulations; there are no signs of fluting on the rest of the body (see for example cups from Knossos; MacGillivray 1998, pls. 151:1032 and 153:1032 [7:2]). Pinching the rim of a ceramic vessel is a lot easier to do in clay rather than in metal, and, for the time being, should probably be seen as a derived trait stemming from the dilution and proliferation of the multi-lobes attribute, which is almost certainly a “metallic” trait. A number of vessels fall within the “pinched” or “crinkle” rim category. These include four carinated cups (CM CUP 2, CT CUP 2) (Levi 1976, pls. 30e [7:3] and 123d–f [7:4–7:6] from Phaistos, one cup from Knossos (MacGillivray 1998, pls. 151:1032 and 153:1032 [7:2]), as well as two unique “teapots” (TP 1) with the same type of spout and pinched rim, one from

18 Two gold carinated vessels (perhaps kantharoi) from the tomb at Kalamata were found with “crinkled” rims (NAM 7382, 7383). The vessels were made from extremely thin plate, and were found in a crushed state. It is not clear if the “crinkles” seen on the vessels were intentional or due to the crushing. The objects are thought to date to approximately LH I.
Phaistos (Pernier 1935, pl. XXXIV [7:7]) and one from Knossos (Hogarth and Welch 1901, fig. 24 [7:8]). On these vessels, the undulations are haphazard and irregular. There are signs that these vessels are trying to evoke metals with their shape (carinated body) or decoration (painted flutes and band with dots on it; Levi 1976, pl. 123f [7:6]), but the irregular crinkles suggest that these vessels are perhaps *adaptations* or *derivations* from the lobed forms.

All the examples of vessels with lobed and undulating rims fall within the MM IB to MM IIA range or to MM II (Fase Ib), including the silver kantharos from Gournia. It appears that there is a slight predilection for multiple-lobed vessels, which emulate proper metal prototypes, to be slightly earlier in date (MM IB), although it is true that the pinched crinkle rim does occur in both periods. Two jars have “notched” rims. One is dated to MM IIIA Phaistos (Levi 1976, pl. LXXXIIe) and the other occurs in a MM IB context at Haghia Photini (Levi 1957–1958, fig. 76 top right). It is uncertain whether the notched rim is a derived motif emulating the crinkle rim, the cut-out petal rim, or some form of fluting (cf., a stand from Phaistos with a cut-out rim: Levi 1976, pl. LXXIV).

**Added Rims**

A certain class of Minoan-made metal shallow basins with flat horizontal rims were embellished with a secondary decorative rim (see BAS 1). These are related in style and manufacturing techniques to a rounded cup with added rims (RD CUP 1) from the Greek mainland. The silver cup with gold rim from Shaft Grave V (Karo 1930, pl. CXXXVI; also Davis 1977:157–159, no. 46, fig. 124 [8:1]) provides an example of how these types of vessels were made. The body of the vessel was raised from a thin plate of silver. A second horizontal rim was formed of a separate plate of silver. On the most ornate of

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19 One lobed cup from Vasiliki, dated by Evans to MM IA (Evans 1921:186, fig. 134d), may indicate that the carinated cup with lobes may have arrived even earlier than MM IB.
these vessels, the additional rim was cast into three-dimensional relief designs. The additional rim and the relief designs were then covered in a thick layer of gold plate. The gold was apparently attached mechanically, by retooling the designs around the cast reliefs and around the edges of the original rim, so that it would adhere. Both rims were then attached by means of small, gilded rivets. The handle, made to complement the relief decoration of the secondary rim, was either made from solid gold or gilded in the same way as the decorative plate (Davis 1977:157–159, no. 46, fig. 124 [8:1]). The material of the body and the underlying plate of the secondary rim may be different (sometimes bronze or copper), but the decorative plate is always gold. The larger bronze basins from Crete with a secondary rim (Matthäus 1980:211–212, pls. 39–40, nos. 322–329 [8:2–9]) were fashioned in the same manner as the cups from the mainland, the only difference being the size of the diameter and the wider repertoire of relief designs on the rim and handle. It is likely that the rims and handles of the Cretan basins were also gilded or silver-plated (see BAS 1 for further details about the description of these metal basins).

One of the characteristics of the metal vessels with added rims is the wide, flat, sharply everted horizontal rim. Ceramic vessels are not likely to have a secondary added rim, but certain vessel types do display the flat horizontal rim. It is the contention here that these vessels were imitating the metal basins with ornate secondary rims.

*Ceramic basins with creamy border and molded decoration*

Many of the ceramic basins with flat rims are painted in a creamy-white paint around the rim—what Evans calls “creamy-bordered” (1935:120–121, pl. XXIX [9:1]), followed by MacGillivray (1998:147–148). More often than not, the edges of the rim have been cut away to form points or petal shapes. The diameter of the rim averages 30 cm, a width that falls within the diameter range of metal basins, and which makes these vessels too large to be bowls. The ceramic rims are alternatively decorated with stamped spirals (Evans
1935:120–121, fig. 89, pl. XXIXe [9:1], impressed concentric circles (MacGillivray 1998:148, pl. 91:548 [9:2]), whorl-shells (Evans 1935:128, fig. 97, pl. XXXd; also MacGillivray 1998:148, no. 550), petals (MacGillivray 1998:148, nos. 549 [9:3] and no. 551, pl. 63 bottom left; Evans 1935:124, fig. 95, pl. XXIXb [9:1 left middle]), or a combination of leaves and bivalve shells (Evans 1935:119, fig. 86, pl. XXIXa [9:1 left top]). Preserved examples of basins have a small, raised circular base (e.g., Levi 1976, pl. 184e). Handles are present on some extent examples (Evans 1935, pl. XXIXa–b [9:1 top left and middle]), which suggests that at least some of these vessels probably had one handle attached to the rim as well. The rims on the ceramic examples are coated white, the bodies are semi-lustrous dark-brown, and the interior sometimes has a red band and/or white spots, a foliate band, or a featherwave pattern. There are traces of white bands or large white circles on the exterior on some examples (MacGillivray 1998:148, nos. 548–550). One example has added red at the center of the molded flowers (MacGillivray 1998:148, no. 551).

The molded relief designs on the rims of the clay basins may have been inspired by the repoussé decoration seen on the added rims of the metal basins. Similar motifs (various flora, marine life) are also seen on the metal examples. The raised repoussé work on the added rims of the metal basins includes double axes, a “sacred-lily” pattern, a wazlily design, whorl-shells, foliate bands, and notched and torsional fluting (see [8:2–9] and BAS 1). The metal basins with the whorl-shells and foliate designs are particularly relevant. Two extant metal basins, one from Mochlos (Matthäus 1980:211–211, pl. 40:328 [8:7]), one from Malia (Matthäus 1980:211, pl. 40:327 [8:6]), and a possible third from Thebes (Matthäus 1980:212, pl. 40:331 [8:9]), feature raised whorl-shell motifs. The edge of the basin from Malia is finely scalloped into a “cut-out” pattern. Whorl-shells feature prominently on the metal cups with added rims from the mainland (RD CUP 1), although, in some cases, they appear more flattened, resembling spirals or concentric
circles. The stamped concentric circles and molded shells on the creamy-white borders of the ceramic basins are reminiscent of these flatter metal motifs. The same flat “whorl-shell” motif is seen on the rhyton with a cut-out rim (RHY 3; Levi 1976, pl. XLVb [9:4]).

The cut-out rims of the ceramic basins may be an attempt to reproduce the scalloped edge of the metal basins. Alternatively, as the molded petal (and other flower) motifs on the ceramic basins indicate, there may have once have existed metal basins with added rims cast to resemble petals. The cut-out petal rim is seen on other ceramic vessels, including many stands (STD 1, 2, 3) and a cylindrical spouted jar (JAR 1) from Phaistos ([9:7–10] see also 3.II.3 Cut-out Petal Rims for further information about these vessels). The petals may have been an attempt at copying gold flowers or gold added rims and bases.

*Basin with molded torsional flutes on body*

A unique basin with molded torsional flutes was found in the Kouloura area of the palace²⁰ (Hogarth and Welch 1901:80 and 88, fig. 16). This vessel is wide and shallow with a flat extended rim, and the diameter is approximately 33 cm wide (Hogarth and Welch 1901:88, fig. 16; also Evans 1921:242–243, suppl. pl. IIIb; 1935:121, fig. 88 [9:5]). Evans called this vessel a “tall fruit dish,” and believed that the vessel was set on a pedestal (Evans 1921:243).²¹ Hogarth and Welch, however, disagree, as “the broken boss in the center of the under side seems too small for a large foot” (1901:88). That the basin may have had a foot is quite possible, given that basins and stands could have been related in function. One may imagine, especially if the basin was used as a receptacle for water (see 6.III.1 under Ceramic Vessel Sets), that basins could have been placed on a

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²⁰ Area described as the “area on the same slope as the first houses (A, B)” (Hogarth and Welch 1901:80).

²¹ Evans said that part of the pedestal was found with the basin (1921:243), but there is no mention of a foot in Hogarth and Welch 1901.
stand for convenience rather than be carried around, especially if full of water. At times, rather than having two separate pieces, the ceramic bowl/basin and the stand may have been built as one (e.g., Evans 1921, fig. 133e). The handle on the metal basins may also have disappeared, as there was no longer any need.

The decoration of this basin/stand was particularly “metallic.” The underside of the rim has white painted spirals, and the exterior of the bowl is molded to resemble deep torsional flutes. These flutes are covered in a creamy white wash. Flutes of this kind have been found on silver bowls from Tôd, in Egypt (e.g., Bisson de la Roque 1950, pl. V: 70509 [9:6], pl. XVII:70620, and pl. XVIII:70633). Especially relevant is a silver bowl from Tôd with torsional flutes and a small ring base (Bisson de la Roque 1950, pl. XXVIII:70633). Seen side by side from the bottom up, the ceramic basin looks to be an almost perfect copy of the Tôd bowl, except for the addition of the flat rim (Warren and Hankey 1989:132, pl. 8A–B). Even with the apparent similarities between the clay and metal bowls, some scholars are hesitant to establish synchronisms between the MM period and Egypt’s more fixed chronology based on these vessels, citing the fact that one is a bowl while the other is a stand, hence, not comparable (e.g., Davis 1977:76). It is the opinion here that this basin (or perhaps a stand) represents a combination of two metalworking traditions. It features the fluting of the imported metal bowl tradition (as seen at Tôd) and the local tradition of the flat rim of large basins (see BAS 1). As such, this piece is a good example of the second phase of imitation, the adaptation phase. The bowl of the vessel is a direct copy of the type of bowl found at Tôd, but the potters also added the flat rim feature of the basins in order to adapt the vessel to their needs. A further adaptation may have been combining the basin with a stand, in order to create a “basin on a stand.”
Cut-out Petal Rims

A certain number of vessels feature notched rims, or rims that may be said to resemble cut-out petals (or painted zig-zags). These include three stands (Levi 1976, pl. XXVIIa [9:7], pl. LXXIV [9:8]; pl. XXVIIc [9:9]), a cylindrical spouted jar (Levi 1976, pl. XL Ib [9:10]), two rhyta (Levi 1976, pl. XLVb [9:4]; Koehl 2006:85, pl. 9:80), and some large basin fragments (Evans 1928, pl. XXIXa, XXIXb; also MacGillivray 1998, pl. 91:548–549 [9:2–3]; and Levi 1976, pl. 184e). The base of the stands, as well as one more stand without a bowl (Levi 1976, pl. 61e [9:11]) have matching notched cut-out petals around their bases. The stand with the appliqué flowers (STD 1) [9:7] has some unique additional “metallic” elements. In addition to the plastic flower adornments, the square beveled rim has a series of tiny hooks, from which hang the remnants of metal (?) rings. Perhaps a chain was appended to the stand (or its metal counterpart). Two vestigial horizontal handles adorn the sides of the bowl, and two added torus rings, painted orange with red dots, line the joins between the bowl of the vessel and the foot of the pedestal base.

That the flower appendages may also have been based on metallic elements is supported by the discovery of a free-standing gold flower in the house tomb at Chrysolakkos, near Malia. Earlier gold flowers exist at other sites, but the Malia flower is closer in date (MM I–II) and style to the stand with appliqués from Phaistos (Demargne 1930:410, fig. 4; also Evans 1921:75, fig. 47 [9:12]). The gold flower is composed of six separate petals, which are affixed together by a rivet in the center cavity. Each petal is engraved with lines to represent its veins. The same incised lines are seen on the flower appliqués on the Phaistos stand [9:7]. The gold flower from Malia is thought to be a pin,

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22 The photo in Koehl 2006, pl. 9:80 is of the complete rim and part of the neck of a rhyton with petal cut-outs. The reference for the objects (Evans 1928:119, pl. 29b–c) does not match the photo. The cited objects appear to be part of a basin with cut-out rim and a free-standing flower. Therefore, even though the photo in Koehl seems to suggest that a rhyton with petal rim was found at Knossos, not much information is known about it.
but it shows that metal decoration in the shape of flowers was known at this time. Although no metal flowers were found at Gournia, Boyd Hawes reports that metal animal figurines in the shape of a hare, lizard, goat, and cat’s head vases were found at this site, the cat matching similar ones at Palaikastro and Zakros (in Silverman 1974:12–13). Two of these, the small wild goat heads, are said to have once been attached to vases (Silverman 1974:12–13). Thus, with such precedents, it is possible that (gold) flowers could have been attached to metal vessels as well.

An example of a free-standing ceramic flower from Knossos indicates that perhaps the gold flowers were sometimes copied in clay (Evans 1935:124, fig. 95 [9:13], and pl. XXIXc). It is not clear if this ceramic flower was once appended to a vessel, perhaps like on the teapot from Phaistos (Pernier 1935, pl. XXIX [9:14]) or on the globular pyxis with petal-shaped “sconces” (Levi 1976, pl. XLII [9:15]), for example. The ceramic flower was painted like the flower appliqués on the Phaistos stand: the petals were coated in a creamy-white wash, while the raised ring around its deep cavity was painted red (MacGillivray 1998:148, no. 541, no image).

The petals on the free-standing ceramic flower from Knossos are similar in style to the notched rims on the basin rims from Knossos and the stands, stand, spouted jar, and rhyton from Phaistos. It is clear that the cut-out rim is meant to resemble a frieze of petals. Each ceramic petal even has the two (or three) incised vein lines, as seen on the gold flower petals. Only two basin rim fragments (MacGillivray 1998:148, nos. 548–549 [9:2–3], and 551, pls. 63 and 91) and the rhyton with petal rim (RHY 3; Levi 1976, pl. XLVb [9:4]) do not have the incised lines. Instead, they are adorned with molded relief whorl-shell motifs (MacGillivray 1998:148, no. 550, he calls them “argonauts”). As was

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23 These free-standing metal figurines, including ones of flowers, may perhaps have been attached to basins or kraters, as seen portrayed on the walls of the tombs of Rekhmire in Egypt as gifts of the Keftiu, for example (e.g., Davies 1943, pl. XVIII upper left).
discussed earlier (see under 3.II.3 Added Rims), the whorl-shell was a popular motif on the gilded rims of certain basins and cups from the mainland. It was also suggested that the cut-out rim on ceramic basins was perhaps a means of imitating the scalloped edge of certain basins, such as the cut-out rim of the basin from Malia also with raised whorl-shells (Marinatos 1929:368–369, pl. XXIII, figs. 2–3; also Matthäus 1980:211–212, pl. 40:327 [8:7]). The substitution of the petal motif on ceramic basin rims, which otherwise imitate the scalloped edge of added rims with whorl-shells, indicate a conflation of ideas between the triangular cut-out rim and the petal cut-out rim. Or, perhaps, the petal rim may have once been a metallic feature on otherwise lost metal vessels.

The cut-out petal rims also share other features with the added rims on certain basins and gilded cups (BAS 1, RD CUP 1). The inner border of the petals features a ribbed design. The same cross-ribbed molding is a frequent attribute of Minoan-made metal vessels, appearing on the inner lining of the added rim on metal basins from Kato Zakros (Matthäus 1980:211, pl. 39:323 [8:2]), Knossos (Matthäus 1980:211, pl. 39:325 [8:4]), Malia (Matthäus 1980:211, pl. 40:327 [8:6]), Mochlos (Matthäus 1980:212, pl. 40:328 [8:7]), cups from Mycenae (Davis 1977:157–159, no. 46. fig. 124 [8:1]), Vapheio (Davis 1977:260–263, no. 107, fig. 207), and Midea (Davis 1977:271–273, no. 112, figs. 221), among others. The molding appears to be a wire to strengthen the edge of the rim. The fact that the ribbing is seen on the inner lining of the petals on the bases of the stands may suggest that the petals were an added band as well. The white color of the cut-out petal rims and bases are also similar to the creamy-white paint on the added rims of ceramic BAS 1. Just as the white of the added rims may allude to the gilding on the metal examples, the white color of the cut-out petals may perhaps refer to the gilding of these added petal features. If the ceramic Phaistos stand with appliqués (STD 1) [9:7] was in fact modeled on an actual metal prototype, then the metal stand, one imagines, would have been made from copper or bronze (just like the basins), but highlighted with
supplementary rims, bases, and flowers made from gold (or gilded copper elements), as the Minoans were wont to do for color contrast (Davis 1977:331). The rim on this particular stand is painted in a frieze of white triangles, but this motif clearly alludes to the cut-out petal rims of the other Phaistos stands (STD 2–3) (Levi 1976, pl. LXXIV [9:8]; Levi 1976, pl. XXVIIc [9:9]) and the cylindrical spouted jar with cut-out petals (JAR 1; Levi 1976, pl. XLIb [9:10]). The notched petal rims and bases of these other vessels are also painted white, suggesting a unity in manufacturing technique (in metal and ceramic). Given that the cut-out petal feature was found on stands, a rhyton, an ornate cylindrical spouted jar, and some basins, perhaps this decorative motif was reserved for “special” vessels used as a set (see also 6.III.1 Ceramic Vessel Sets).

3.II.4 BASES

The bases on clay and metal vessels share many forms, and, apart from the limited number of base types listed below, it is often very difficult to definitely attribute any one type of ceramic base as “metallic” in origin. This is easier to achieve, however, when one considers the function of bases on metal vessels. As most metal vessels were raised from the bottom to the top from a single—sometimes thin—plate of metal, the base had to be sturdy enough to anchor the shape of the vase as well as to provide protection to the thin plate on the bottom. In some cases, problems of stability were overcome by reinforcing a metal shape with the addition of a copper wire in the foot (Davis 1977:337). As the ring was inside the base, however, this feature was not always seen from the outside, and, so, generally not copied in ceramic. In other cases, certain features were added to a metal vessel in order to protect the bottom of a vase from denting. Some of these features include a raised ring, a pedestal or trumpet base, raised concentric circles, or a raised central boss in the bottom (sometimes called an omphalos).24 In clay, these are the types

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24 Some metal vessels do not have these added features, and the bases are left rounded. However, it seems that the tendency for these vessels is for the use of thick metal plate to prevent damage.
of bases that are the most recognizable as “metallic”—although, it has to be acknowledged, the presence alone of these types of bases cannot guarantee a metallic origin to a vessel shape. When combined with other “metallic” features, such as a torus ring at the join between the foot and the body or the addition of ridges at the foot to denote a “stand,” however, one can be more certain of the metallic origin (Walberg 1983:25; 1987a:37). A concerted effort to produce a squared-off or sharp-ridged base may also indicate an effort to emulate the sharp edges of a metal vessel base.

Separate “Stand” Bases

While most pedestals on precious metal vessels were built around a core or ring and raised up along with the bowl section of a vessel (Davis 1977), a few metal pedestaled vessels were made in separate pieces (e.g., Davis 1977:183–186, no. 63, figs. 148–150; 291–292, no. 123, fig. 236). At least one set of goblets from Mycenae was made in two parts, with a separate foot (Thomas 1938–1939, figs. 26a, 27b; also Davis 1977:291–292, no. 123, fig. 236). The pedestaled foot was attached to the lower body of the vessel by means of small rivets (Davis 1977:291–292, no. 123, fig. 236). Even though the rivets are flush with the wall on the inside, the join between the foot and cup is clearly visible from the outside, however. There is no torus ring to cover the join. Not only are the rivets

25 The exception to this statement is the omphalos base, whose presence on a clay vessel would undoubtedly reveal its metallic inspiration. While the metal bowl with the omphalos base was popular in Anatolia from the EBA period and beyond (e.g., in EBA at Horoztepe: Özgüc and Akok 1958:44, no. 9, pl. VI, 6, fig. 18; Özgüc 1964:4–5, fig. 3; in MBA at Kültepe: Özgüc 1959:109; Reeves 2003 cat. no. 256; in the Iron Age: e.g., Özgen and Özgen 1988, figs. 36–39; Toker 1992:23 and 194–202 nos. 49–76), bowls with an omphalos base were apparently not emulated on Crete. The one exception to this might be a bowl from Phaistos (Pernier 1935, fig. 227), whose profile looks to be more rounded (like the metal bowls) than the clay fireboxes, whose shape it resembles (see Levi and Carinci 1988, pl. 113). Without seeing the base of the bowl in person, it is difficult to say anything with certainty. The fact that most other Anatolian metal vessel types were copied on Crete (see 6.II.1 Origins. Anatolia and the Near East), and the fact that the metal bowl with omphalos was such a popular form in Anatolia, it is surprising that no ceramic imitation of this type has been found on Crete to date.
evident, the upper half of the foot overlaps the bottom of the cup, producing a small “ridge” between the body and the pedestal.

On certain ceramic vessels, it appears as if the “separate” nature of the foot was also emphasized. On some vessels with pedestal bases, a small incised ridge (or bevel) was delineated into the clay at the location where the body would have met a separate foot. Below the ridge, the foot bulges slightly and/or changes direction from the profile of the body, adding to the illusion that the foot is “overlapping” the bottom of the vessel. If one can imagine the metallic counterparts of these vessels, then the foot would probably look like a small, hollow ring (or “stand”) in which the pointed end of the body was attached to the foot in order to support the vessel. That this feature was probably a metallic one is suggested by its lack of function in clay. There is no practical reason for emphasizing this “stand” around the foot; many other vessel types with pedestal bases are not emphasized in this manner. The ridge at the joint between the foot and the body, in fact, may actually weaken the vessel at an already vulnerable location. Therefore, those vessels with these kind of bases may have been emulating metal models. That the original prototype was metal is supported by the torus rings around the base at the same location and on the same type of vessels as those with “stand bases” (see below). The fact that there are vessels with torus rings and some that do not, perhaps, suggests two manufacturing traditions—one tradition that covered up the join with this feature and the other that did not. Most of the vessels with these “stand bases” are dated to MM IIIA\(^2\) and beyond, but the presence of this base type on the medium-sized carinated cup (CM CUP 1) from Phaistos (Levi and Carinci 1988, pl. 83h [10:1]), which is dated to MM IIB (\textit{Fase} II), and, perhaps, on a jug from Phaistos (Levi and Carinci 1988, pl. 31k [10:2]),

\footnote{For example, see the separate bases some pitharakia (Levi and Carinci 1988, pls. 72l, 73b, c, e, h), other piriform jars (Levi and Carinci 1988, pl. 74i), and some bridge-spouted jars on pedestal bases (Levi and Carinci 1988, pl. 58d, 58f).}
dated to MM II (*Fase* Ib), may indicate that metallic separate bases were occasionally used earlier as well.

**Bases with Torus Rings**

As with torus rings that cover the join between the neck and the rest of the body, sometimes, torus rings were used to cover the join between a pedestal foot and the body. The torus ring around the base in ceramic occurs on the same type of vessels that display the “separate” base ridge (see above; pitharakia, bridge-spouted jars, ewers, goblets). These vessels are also mainly dated to MM IIIA into the LM period.\(^{27}\) One exception is the torus ring seen around the base of the foot of the stand with flower appliqués (STD 1) from Phaistos (Levi 1976, pl. XXVIIa [10:3]). The ring is painted orange with dark dots, a probable reference to strengthening copper wire attached by rivets (Davis 1977:337). If this stand was directly modeled on a metal original, the torus rings would imply that the vessel was made from three pieces: the bowl, the stem, and the foot.

**3.II.5 HANDLES**

Whereas the rim and base of a ceramic vessel may hint at the metallic origins of a vase, ceramic handles are usually less ambiguous about their origins, especially if coupled with a ceramic rivet. “Metallic” handles in clay may be round or flat in section, but the most commonly recognized “metallic” handle is the ribbon handle.

**Ribbon Handles**

The ribbon handle, flat and wide in section, reflects the use of a flattened metal strip for the manufacture of metal handles. In metal, the ribbon handle is strong enough to support

\(^{27}\) See, for example, some pitharakia (e.g., Levi 1976, pl. LXXXIIIa–b), ewers (Pernier 1935, fig. 222 left); bridge-spouted jars with high pedestal base (Pernier 1935, fig. 222 top right; Levi and Carinci 1988, pl. 58a–d).
the weight of the vessel, whereas a thin ceramic handle is more apt to break. In this case, aesthetics override function. In order to provide stability to the handle and to blunt the edges, most metal ribbon handles in the Aegean were rolled up at the edges, although, it seems that only the Mycenaeans used a strengthening copper wire in this process (e.g., Davis 1977:126–127). In some cases, a central rib was added to the handle, which usually matched the decoration on the rim or another feature of the vessel (see for example, Davis 1977, figs. 89–92, 103–104, 124–125, 137, 185, 198, 206–207, 214–219, 221, 225–227, 232–233, 241–242, 252, and 264).

The clay ribbon handle is mostly found on vessels, which, for other reasons, are also identified as “metallic” (Furumark 1972:90). This feature usually occurs on the earliest vessels of the type, but this handle may, however, also appear in later stages on some ceramic types that were once only made with rounded handles (e.g., with bridge-spouted jars). The adoption of the ribbon handle at a later stage of the type’s development may suggest that the clay form was now being manufactured in metal. More securely tied to their metal counterparts are flat ribbon handles with grooves/ridges or raised edges. The handle with a raised edge seems to represent a metal handle with its edges rolled up, and the handle with three ridges/two grooves is an elaboration on the handle with two rolled edges, except with the addition of a central rib. The ribs on the handle may be represented in paint. A good example of clay handles with ribs and rivets were found at Malia, in Quartier Gamma, but this is rare (Demargne and Gallet de Santerre 1953, pl. L1d; also Matthäus 1980, pl. 76:10 [10:4]). Most clay handles do not show the mid-ridge.
Up-swung Handles

The ribbon handle is almost invariably vertically attached to the body of the vessel, i.e., the attachment of the top end of the handle is above the lower attachment. This type of handle is used on smaller ceramic vessel types (cups, bowls), probably because a heavy weight would put too much stress on the thin handle. Therefore, even though metal strips were used for handles on larger metal shapes, such as jars, jugs, or ewers, in ceramic, these shapes may have retained the rounded vertical handle. Undifferentiated from the typical rounded ceramic handle, sometimes pottery shapes with rounded handles are more difficult to identify as metal imitations. One way, however, is to notice up-swung handles or inverted S-shape handles. These are characteristically metallic-shaped handles as the strength of metal may support these more extravagant shapes. Any ceramic vase with these types of handles may be emulating metallic prototypes. Up-swung handles occur in the MM period on certain kantharoi (e.g., van Effenterre and van Effenterre 1963:109, pl. XLIV:7882 [10:5], rhyta (Levi 1976, pl. XLVb [10:6]), amphorae (e.g., Levi 1976, pl. 76i [10:7]), and jugs with flat rims (JUG 5), all forms that display other metallic traits as well. One of these jugs, the jug with “coffee bean” motifs from Phaistos (Levi 1976, pl. XLIVa [10:8]), has an up-swung handle painted with horizontal striations in yellow/white. The handle on the jug is similar in shape to the handle on the rock crystal rhyton from Zakros (Platon 1963:180, pl. 148b; also Warren 1969:87; Platon 1971:135–136 and 139; Koehl 2006:86, pl. 9:87), while the striations on the ceramic handle are reminiscent of the gold interstices on the rhyton’s torus ring. The metal prototype of the jug with “coffee bean” motifs from Phaistos may have also been accented with gold bands. As the rock crystal rhyton indicates, up-swung and S-shaped handles are easier made in stone due to stone’s propensity to retain the sinuous handle shape. Any stone vessel with these types of handles may also be emulating metal prototypes.

28 There are certain arched handles that rise above the rim of a vessel, but these are considered “horizontal” handles as the attachments are placed side by side, on the same horizontal plane.
Vapheio Handle (Spool Handle)

The spool handle, or the Vapheio handle, named after the site it was first discovered, is a highly characteristic feature of Aegean metalwork. Examples of extant metal straight-sided cups with spool handles (called “Vapheio cups”) have been found on Crete and on the mainland (e.g. [9]). The handle consists of a cylindrical spool between two horizontal strips, which are then fastened with rivets to the walls of the body. According to Davis, the manner in which the handle was manufactured can be divided into two metallurgical traditions (1977:43–50). On the cups made in Crete (and those exported to the mainland), the lower strip of the handle is L-shaped, has distinct horizontal and vertical components, and is attached low on the body of the cup. Those Vapheio handles manufactured on the mainland, the lower strip of the handle is shorter, forms a rounded curve, and is attached higher on the wall of the cup (Davis 1977:43). Davis attributes the first tradition to the Minoans and the latter to the Mycenaeans (1977:352–353).

The earliest spool handle found on a sherd from the Aegean comes from a ceramic jug or cup rim from the “Royal Pottery Stores” at Knossos (Evans 1921:245, fig. 183b.1; 1928, fig. 121; also Davis 1977:46, fig. 35 [10]), a MM IIA context. The lustrous dark brown glaze and unusual shape of the handle and body suggest this sherd is an import. The closest ceramic parallels point to Anatolia (see 6.II.2 Origins. Anatolia and the Near East). The sherd features two round flat rivets at the rim, indicating that the original prototype of the spool handle was probably metallic. A metal vase with a spool handle, in fact, was found in the Tôd Treasure, in Egypt, dating to the Middle Kingdom period (Bisson de la Roque et al. 1953, pl. XXXI [11]; also Higgins 1997, fig. 31). The shape of the vessel is not Egyptian, nor is it common in Crete (Bisson de la Roque et al. 1953:24). The closest parallels also come from Anatolia. Perhaps the Vapheio handle was introduced on such types of vessels such as a rounded cup (RD CUP 5) from the “Loomweight Basement at Knossos” (MacGillivray 1998, pl. 25:818 [12]), which is
dated to MM IIB–IIIA. The cup too is a form that is thought to be Anatolia in origin (see RD CUP 5). The handle on this bowl was broken at the time of its discovery. It is possible that the Vapheio handle was too heavy in ceramic, thus it was abandoned in clay. The only examples of straight-sided cups with Vapheio handles were made in metal or stone (e.g., Warren 1969:40–41, D147, P236).29 If the jug or cup sherd from the “Royal Pottery Stores” can be dated to MM IIA (see above), then, it seems likely that the spool handle was introduced to Crete through the import of Anatolian (metal) objects, perhaps by MM IIA, but certainly by the end of MM IIB (date of “Loomweight Deposit” cup). As the straight-sided cup was an established shape since MM IA (see Momigliano 1991, fig. 8:21; 2007, fig. 3.14:6–7), it seems, therefore, that the spool handle was grafted to the straight-sided cup sometime after its introduction to Crete, creating a new adapted form—the Vapheio cup.

Loop Handles

“Loop handles” is the name given here to types of handles from which a vessel may carried or lifted by suspension. On metal vessels, the loop handle is often a single thick metal wire that is hooked into holes set into a projection on the lip or upper body of the vessel. This allows for movement of the handle and allows the vessel to be tipped for pouring. Examples of “teapot” shapes with looped handles were found at Horoztepe and Kayapınar in Anatolia dating to the Early Bronze Age (Toker 1992, figs. 33, 34, the wire handle is assumed on the latter example [11:1-2]), as well as on a “situla” shape from Shaft Grave V at Mycenae (Karo 1930, pl. CXXXV; Davis 1977: 159–161, no. 47, fig. 128 [11:3], dating to MH III–LH I). These type of wire loop handles are often set perpendicular to the spout or widest part of the body. Less common in metal is the fixed

29 Although a ceramic example of a Vapheio cup was found in Nienhagen, Germany (Bouzek 1985:50, fig. 19:11). This cup may have been a ceramic copy of a metal Vapheio cup that had been imported from the mainland.
loop handle, which is a single wire of metal that is often riveted to two ends of the vessel so that the object can be lifted. The handle does not move. In this case, the handle is often positioned front to back, parallel with the spout. An example of this type of fixed loop handle was found on a bronze “bridge-spouted” type jar from Euboia, dating to the LH III period (Matthaüs 1980, pl. 57:477 [11:4]). In metal, these types of handles are strong, able to carry the weight of the vessel when carried. Loop handles in ceramic are much weaker and prone to breaking. Ceramic vessels with loop handles, therefore, are highly suspect of having metallic antecedents. Ceramic loop handles occur on certain askoi (e.g., Levi 1976, pls. 32f [11:5], pl. XLVI [11:6]; ASK), and jars that resemble situlae (e.g., Levi 1976, pl. 116d [11:7], 116f [11:8]; JAR 3). The single handle on the askoi and situla-type jars are thick, rounded examples raising far above the rim. On the askoi and on one example of a situla-type jar (Levi 1976, pl. 116f [11:8]), the handle is attached at the front and back of the vessel, running parallel with the spout. This suggests that the metal antecedents of these vessels may have had a fixed loop handle. On other jar types (JAR 4), evidence suggests that the jars actually had metallic wire handles themselves. This is suggested by the presence of one or two closely-spaced holes perpendicular to the spout or on either side of the body facing each other (e.g., Levi 1976, pl. XXXIXa [11:9]; also Levi and Carinci 1988, pls. 70b, 70c). The holes were positioned in such a way that a metal wire could have feasibly passed through them to form a swinging loop handle. Evidence of ceramic “swinging” loop handles is found on one ceramic situla-type jar (Levi 1976, pl. 116d [11:7]). At the location where the ceramic loop handles meets the rim, an extra band of clay is laid perpendicularly across the bottom of the handle. The projection has the effect of evoking a “socket” by which the metal wire could have been attached, somewhat reminiscent the attachment mechanism on the situla-like metal jar from Shaft Grave V (Karo 1930, pl. CXXXV; Davis 1977: 159–161, no. 47, fig. 128 [11:3]).
“Laid-on” Handles
On metal vessels, the handles are usually attached to the body by rivets. In order to effectively attach the lower end of the handle, at times on vertical handles, this end is bent so that more of the surface of the handle is available. This creates a flat, sometimes upturned, end to the handle (see for example on a jar from Akrotiri; Matthäus 1980:188, pl. 33:281 [11:10]). In ceramic, although the handle is also laid on to the surface of the vessel, the lower end of the handle is usually smoothed off. If the lower end of the handle is up-turned, thickened (and beveled) or exaggerated in some manner, this may indicate the imitation of metallic handles. This is sometimes referred to as a “laid-on” handle (Walberg 1987a:37). This effect is demonstrated on certain open-mouthed jugs (JUG 4) (e.g., Levi 1976, pl. 81e [11:11]; Levi 1976, pl. 82c, 82e [11:12]; also Levi 1957–1958, fig. 150c) and Walberg’s (1987a) types 117, 135, and 140–142. One some vessels, the lower end of the handle may even have an exaggerated detail resembling a cylindrical lug (?) with two round, flat ends (see detail on Levi 1976, pl. 81e [11:11]). This is likely a “metallic” detail representing a lug, rivet, or decorative detail (?). The same kind of “lug” may also have been present on a teapot (TP 2) from Malia said to have had a handle with a “tête d’os” (head of a bone) at the end of it (van Effenterre and van Effenterre 1963:93, pl. XXXV no. 8513 [55:8]).

3.II.6 SPOUTS
The spout is an intrinsic feature of any pouring vessel and does not necessarily imply a metallic origin. Certain spouts, however, do seem to connote metallic prototypes, and some of the ways of discerning these “metallic” spouts are to find parallels in metal, to note the presence of clay rivets on the spout or at the join between the spout and the rim (see under 3.II.1 Rivets), or to notice any ceramic spout that seems “extravagantly exaggerated.” Again, clay is structurally weaker than metal, and any feature that seems to
defy the normal parameters of this material will likely have had a prototype in another medium. The spouts on two teapots (TP 3) from Phaistos (Banti 1939–1940, fig. 8 [12:1]; Levi 1976, pl. 32c [12:2]) are good examples of this; they are not features that would have been rendered in ceramic just for the simple purpose of pouring. Any “normal” pouring spout could have done the same job. There must have been a reason for overriding practicality, and this was likely the emulation of a vessel (or, at least, the spout) in another medium.

Although less exaggerated than certain spouts in the EM period, certain vessels in the Middle Minoan period have spouts that do seem more “complicated” than they need be for simply pouring. In addition to seeming “exaggerated,” some MM spouts can be compared in shape to metal examples of spouts that have been found in Anatolia, likely dating to the third millennium BCE (Betancourt 1979, fig. 6 [12:3]; also Bittel 1959: figs. 14–16). These spouts are narrow and bent at an angle at the tip. The same type of spout is seen on two teapots from Phaistos (Levi 1976, pls. XVI [12:4] and XXXIIIa [12:5]) and two ovoid jars (Levi 1976, pl. LXXVb [12:6] and LXXVc [12:7]), for example. It is the general impression here that the “metallic” spout feature may have been grafted to these ceramic shapes to produce novel hybrid ceramic shapes.

Another type of spout that has metallic precedents is the long narrow spout that tapers to the tip. This spout is seen on the two silver teapots from Byblos, dating to the MBA (Montet 1928:189–191, pls. CXI–CXII:746–747; also Evans 1928:825, fig. 541a; Davis 1977:80–81, figs. 60–61 [12:8]). A ceramic teapot (TP 1) from Phaistos with a very similar shape to the Byblos teapots has the same body shape and spout (Levi 1976, pl. XLIVc [12:9]). The spout shape was used on the two teapots with crinkly rims as well (Pernier 1935, pl. XXXIV [7:7]; Hogarth and Welch 1901, fig. 24). Again, it is not clear if there ever existed metal teapots with crinkly rims, but the shape of the spout seems to
have borrowed from metal prototypes. Perhaps these latter examples are also adapted hybrids.

Extravagant spouts are mainly found on two ceramic groups. This feature mainly occurs on certain teapots (Banti 1939–1940, fig. 8; Levi 1976, pl. 32a–c; Levi 1957–1958, fig. 151a) and askoi from Phaistos (Levi 1976, pl. XLVIb; Levi 1976 pl. 32f; also Levi and Carinci 1988, pl. 108a, c, d, e). The spouts are similar in that they are pyramidal in shape, wide at the rim, and fold over at the tip. The spouts on the askoi are also crinkly. One teapot (Levi 1976, pl. 32c) has a flat ridged rim around the spout, a feature that is paralleled by a raised ridged border around the rim of the vessel itself. These particular features are evocative of metal. As other teapots and (non-figural) askoi have “normal” spouts, it does not seem like such extravagant spouts were necessary. It is possible that these spouts were modeled on metal prototypes.

Two cylindrical spouted jars (JAR 1) from Phaistos have flat round rivets at the join between the spout and the rim and at the handles (Levi 1976, pls. XLIIa and pl. 113a). This would imply that the potters wanted to evoke a metallic spout and handles. A later (LH IIIC) “bridge-spouted” jar from Euboia (Matthäus 1980:308, pl. 57:477) indicates that, on metal examples (at least on this one), the same type of spout was riveted directly onto the body. There is no rivet at the join between the rim and the body on the metal jar, as on the ceramic cylindrical spouted jars. Thus, it is probable that the clay rivets on the cylindrical spouted jars was just symbolic and not indicative of true riveting practices. In either case, the rivets on the two ceramic jars and the riveted spout on the metal jar indicate that the triangular, open spout was a metallic feature. This

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30 Although these vessels may be confused for bridge-spouted jars, as they have the same shape and handles, Levi and Carinci 1988 call them “teapots” (1988, pl. 42).
type of spout is the standard spout shape on most “bucket-jars” and most bridge-spouted jars [13:4–6].

3.II.7 REPOUSSÉ MID–RIB

The repoussé mid-rib is a feature of certain straight-sided cups (SS CUP 7), one type of bucket-jar (BKT), and a unique “basin” (Levi 1976, pl. 117h). It is recognized as a “metallic” trait in ceramic from comparison with extant examples of metal straight-sided cups with the same feature found in the Shaft Graves at Mycenae. In metal, the mid-rib is executed by repoussé (Davis 1977: 137–142 nos. 31–35, figs. 108–112; 172, no. 55, fig. 137; 235–236, no. 89, fig. 185; 251–253, nos. 99–100, fig. 197) or through the addition of a torus molding around the mid section of the body (Davis 1977:130–133, no. 27, figs. 102–103). The mid-rib may have provided stability to thin-walled metallic cups. In clay, the feature is purely decorative, perhaps even detrimental. Ceramic cups ups with mid-ribs occur at Knossos (MacGillivray 1998, pl. 17:403 and 79:403 [13:7]) and also at Phaistos (Levi 1957–1958, fig. 153b; Levi 1976, pl. 129o). These cups with repoussé mid-ribs are mainly MM IIIA in date, but some do occur in MM II (Fase Ib) contexts (e.g., Levi 1976, pl. 129o [13:8]). A unique “basin”-like vessel with two handles from Phaistos (Levi 1976, pl. 117h [13:9]) is also MM II (Fase Ib) in date, suggesting some experimentation with the repoussé mid-rib before the end of the MM period. The repoussé mid-rib was probably a technique that grew out of an earlier tradition of added strengthening bands around the body of certain vessel types to prevent the buckling of the metal. These bands are likely alluded to on one type of bucket jar dating to MM IB (Fase Ia) with ridged rings around its mid-section (Levi 1976, pl. 27b [13:6]), and on a straight-sided cup from Phaistos (Levi 1957–1958, fig. 153b [13:10]) from a MM IIA context (Fase Ia/Ib iniziale). At times these bands were decorated with inlaid cut-outs, fluting, or other decorative finishes (see more under 4.IV Ornamental Bands).
3.III OVERALL SHAPE

Just like pottery styles, metallic shapes differ in style according to the tradition prevalent in a region. Metal and ceramic vessels may have rounded or carinated profiles, but what may, perhaps, help to identify clay imitations of metal vessels, among other things, is the “crispness” of the features of the imitation. How to recognize a “crisp” line or feature is, granted, a very subjective endeavor. In general, however, “crisp” is defined here as a quality of a feature with straight or well-defined edges, an angular and sharp profile, and a self-contained elegance of line. The strength of metal allows it to retain sharp angles well. Furthermore, Minoan metal smiths were very precise in their execution, using a compass, spacing out the decorative features evenly, and, generally, balancing each element for a pleasing effect (Davis 1977). Any ceramic vessel with precise, sharp, and “crisp” lines should, therefore, be considered a candidate for emulation. Thus, even though no extant metal example of a bowl with four lobes was ever found, the preciseness, sharp outlines, and thin walls of a ceramic bowl with four lobes (BWL 4) from Phaistos (Levi 1976, pl. XXI [13:11]) seems like a likely candidate for an imitation of a metal bowl.

3.IV METHOD OF PRODUCTION

The overall “crispness” (and general metallic “look”) of a ceramic vessel can very much depend on the thinness of the vessel walls. The thinness of the walls, in turn, can frequently depend on the method of production. Metal vessel walls are thin for two main reasons; because metal is strong, it can be transformed into almost any shape and maintain its form, and, because gold and silver were so costly, precious metal plate was usually beaten relatively thin before being made into vessels. The more successful ceramic imitations emulate this quality. In order to recreate the effect of metal, at times, new ceramic manufacturing methods were needed. The fast-turning wheel was introduced
to Crete in the MM IB period (Betancourt 1985:64), at a time when many “metallic” shapes were introduced for the first time. The potter took advantage of the wheel to produce thin-walled pottery, but along with this new technology, some changes had to be made: thinner walls meant finer clays with fewer inclusions (allowing for more plasticity), higher firing temperatures (to compensate for the finer clays), and, perhaps, new lustrous slips to emulate the shine of metal. The effects of these technological advances produced thinner, harder pottery, which, when dropped on a hard surface, can sometimes be heard to “clink” like metal, and which can be differentiated by other types of pottery by the quality of the firing and fabric.

Some of the finest examples of Minoan Kamares pottery took the form of vessels made from so-called “Egg-shell Ware” (e.g., Levi 1976, pl. 124c [13:12]; Levi 1976, pl. XLVIIc [13:13]). Vessels made in this ware have long been thought to be imitations of metal vessels due to the extreme thinness of the walls, the lustrous sheen of the surface treatment, and the overall “metallic” shape of the body (Furumark 1972:46; Walberg 1987a:34–36; Betancourt 1985:80; Sakellarakis and Sapouna-Sakellaraki 1997, fig. 351; MacGillivray 1998:56; Poursat and Knappett 2005:114). The production of egg-shell thin vessels was based on very detailed technical knowledge (Betancourt 1985:66, 69, and 96). The thin walls, less than 0.1 cm thick in some cases, represent a masterful technical feat that seems “almost impossible to throw [on the wheel]” (MacGillivray 1998:56). MacGillivray believes that “Egg-shell Ware” cups may have been produced in a mold (1998:56). Certainly, if the cups were made in a mold, this could explain the near exact similarity of the cups in size and shape, fabric, and decoration (Poursat and Knappett 2005:112). While it is a possible theory, unfortunately, no traces of mold lines were left on the vases that would allow its confirmation. For the moment, all that can be surmised is that these cups were produced on a fast-turning wheel by very adept craftsmen.
“Metallic” structural details are a good indication of “metalness” on ceramic vessels. The clay rivets, lobes, ribbon handles, torus rings, etc. are univocal markers that betray the potter’s intent to emulate metal prototypes. Relatively speaking, however, “metallic” structural features are relatively rare in the ceramic assemblage examined here. For a summary of the distribution of structural details per vessel type and chronological period see section 6.I.1 and Tables 2 and 3.
CHAPTER 4

DECORATIVE SURFACE TREATMENTS

Various decorative techniques were employed on metal vessels in order to enhance the natural play of light on the surface of the vessel as well as to emphasize the shiny luster and color of the metal itself. In general, these decorative techniques involved shaping the metal for effect (gadrooning, fluting, repoussé, hammering, incising, chasing) or contrasting the natural color of the metal with other substances (patination, adding niello, inlaying, enameling, and gilding or silver plating). These techniques seem to have been universally used through time, but the manner in which the techniques were used on particular assemblages is, of course, specific to one time and place. In ceramic, these techniques were rendered in different ways: either through modeling in three-dimensions, by incising or stamping the clay surface, or by approximating the effect of the metal surface with paint and slips. One or more of the three ceramic decorative treatments might have been used to emulate the same metal surface treatment.

In Minoan pottery, the surface color of the vessels could be achieved through the manipulation of firing techniques as well as the choice of slips and paints. When fired, due to the iron in the clay, a vessel could turn black or red to reddish yellow to pink, depending on the amount of oxygen let into the kiln. If the vessels were fired without oxygen, the reducing atmosphere within the kiln would turn the clay black. With oxygen, the vessels would change to a reddish yellow, red, or pink hue (Betancourt 2008:22).

1 Another decorative effect was tinning, apparently practiced by the Mycenaeans in later periods (LH) (Immerwahr 1966; Gillis 1991, 1992; Gillis and Bohm 1994). This technique involved covering ceramic shapes (usually “metallic” in origin) with a thin layer of tin. Tin was a precious commodity in the Aegean during the Bronze Age, and so, covering a vessel with this metal added value to the object. At the same time, presumably, covering a ceramic vessel with tin (or another metal) was less costly than fashioning a whole vessel from gold or silver.
Slips add another level of complexity. Again, by manipulating the flow of oxygen within the kiln at various times during the firing process, the iron-rich slips could either turn to black or red to reddish brown (Betancourt 2008:48, 53, 65). Paints were also added to the vessel for decoration—white at first, and, then, beginning in MM IA, a red color, which is complemented by orange, crimson, and yellow by MM IB (Betancourt 1985:68).

To imitate the surface of a metal vessel, Minoan potters needed to work within the constraints of the colors available to them. The metals of choice in the Middle Bronze Age were copper, bronze, silver, and gold. If a potter wished to emulate the color of these metals, he could have availed himself of red for copper/bronze and white or yellow for silver and gold. However, due to the constraints of the firing techniques and slips, the background color of the vessel was limited. It was not the background color of the metal vessel that was necessarily emulated, but more likely the added details (e.g., thick white paint on a petaled rim to represent gilding).

The use of paint to represent the actual color of metals seems to have been relatively sparse in Middle Minoan pottery. The more common approach to emulating metal vessels was capture the “look” of a metal decorative technique through the contrast between dark and light paints and slips. It was not the color per se that was important, but the effect of light and shadows created by the decorative technique on the metal vessel.

A good example of how the Minoan potter could capture the “look” of a three-dimensional feature on a metal vessel (torsional fluting) in ceramic is provided by a ceramic basin from Knossos (Evans 1921, suppl. pl. IIIb; also 1935, fig. 88 [14:1]) and a

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2 There has been some discussion about whether silver can be represented by black (see Vickers 1983; 1985; Gill 1986; Gill and Vickers 1990; and Vickers and Gill 1994). This idea has been generally criticized (Boardman 1987; Cook 1987).

3 This is one of the problems with Vickers and Gills’ (1994) proposition that black equaled silver. The “default” color of the pottery of the Classical period was black, due to the firing techniques and slips used.
painted pyxis (PYX 1) from Phaistos (Levi 1976, pl. 117k [14:2]). The underside of the ceramic basin is molded into torsional flutes. This section of the basin is an almost replica of a silver bowl with torsional flutes from the site of Tôd in Egypt (Bisson de la Roque 1950, pl. V:70509 [14:3]). The torsional direction of the raised flutes on the ceramic basin emulates the repoussé flutes of the silver bowl. Incidentally, the basin is covered in a thick white paint, perhaps an attempt at emulating the silver color of the metal bowl (Evans 1921:243). Molded decoration on MM pottery forms, however, is rare. The most common decorative technique is the painted motif. On the ceramic pyxis, the torsional movement around the base of the vessel is rendered by a series of running white “crescents” on a black background. The shape of the “crescents” and the contrast of the white motifs with the black background appear to emulate the effect of light and shadow on the molded flutes of the basin and the repoussé flutes on the silver bowl. On this vessel, it is not the color itself that evokes its “metallic” features, but the visual effect created by the contrast between the black background and the white motifs. If one can apply the same principle and visualize the effects of light upon raised, fluted, incised, inlaid, enameled, gilded, chased, and otherwise shaped or colored metal vessels and the contrasting recesses of the dark background, then it becomes possible to identify possible metal prototypes for some ceramic vessels through the analysis of painted decoration.

The following sections discusses some of the “metallic” decorative surface treatments that appear in the Middle Minoan ceramics from Knossos and Phaistos.

4.1 FLUTING

Fluting is a decorative technique in metal that consists of a repeated design of raised ridges and depressed grooves (the “flutes”). The edges of the flutes on the exterior are sharply defined. The technique is produced by hammering the metal plate around a punch, usually from the inside of the vessel. The width of the flutes may vary, and may
run in a vertical, horizontal, or torsional direction around the body of the vessel. The ends of the flutes may be rounded into arches, especially near the rim.

Fluting on metal vessels was a popular decorative technique that extends back to the Early Bronze Age. For example, gold and silver vessels with vertical fluting have been found at the site of Ur in Iraq, dating from the mid third millennium BCE (Zettler and Horne 1998, figs. 98 and 105–106), and at Alaca Höyük in Central Anatolia, from the second half of the third millennium (Koşay 1944, Al/a MC69; Toker 1992, fig. 24), for example. In the Middle Bronze Age, the technique retains its popularity. Fluting was found on the lower part of the body of two teapots from Byblos in the tombs of two rulers (Montet 1928:189–191, pls. CXI–CXII:746–747) and on a number of silver bowls from the site of Tôd in Egypt (see below). In shape and decoration, many scholars have noted the similarities between certain Minoan ceramics and the Tôd vessels, although there has yet to be any agreement on the source of the vessels. If, however, as is the contention here, one assumes that the Tôd vessels represent a group of silver vessels from the same source of origin as the group of metal vessels that were imported to Crete, then it is possible to look to the Tôd finds for parallels among the MM pottery of Crete (see 6.II.2 Origins, Tôd for further discussion about this group of vessels). Fluting continues into the Late Bronze Age as well, although it is seemingly less popular in this period. The only vessels with fluting from the Shaft Graves at Mycenae were a number of straight-sided cups with vertical fluting (e.g., Davis 1977:125–129, nos. 25–26, figs. 98–99, 100–101; 133–134, no. 28, fig. 104), and, if they can be considered allusions to vertical fluting, some metal straight-sided cups with “arcades” (e.g., Davis 1977:137–139, no. 31, fig. 108; 140–141, nos. 33–34, figs. 110–111). No ceramic straight-sided cups, with the

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4 There is some question as to the origin of the teapots. They are thought to be Minoan by Strong (1966:31), Matz (1973:162), and Higgins (1997:40, fig. 42). Cf. Montet (1928:191) and Branigan (1968:221). Davis considers one teapot an import and the other a local imitation. She wonders if the original import was not from Anatolia (1977:79–83). See more under TP 1.
exception of one with a “double arcade” (Evans 1921, fig. 183a.4; see below) is known for the MM period; therefore, it seems as if vertical fluting was more common on Crete at the beginning of the MM period.

4.1.1 TORSIONAL FLUTING

Vessels with torsional fluting were relatively common at Tòd. This decorative technique was found on a metal tumbler (Bisson de la Roque 1950, pl. XVI:70618 [14:8]), a bowl with two handles (Bisson de la Roque 1950, pl. XIV:70592 [14:4]), a conical bowl (Bisson de la Roque 1950, pl. XVI:70606 [14:5]), and a number of semi-globular bowls (Bisson de la Roque 1950, pl. V:70509 [14:3], pl. XVI:70612–70613 [14:6–7] and 70619–70620 [14:9–10], and pl. XVII:70624 [14:11] and 70633 [14:12]). The bowl with torsional fluting was the most common. In ceramic, torsional fluting occurs on semi-globular cups (SG CUP 3), conical cups, small carinated cups (CS CUP 3), straight-sided cups (SS CUP 2), jugs (JUG 4), tumblers (TMB 1), and pyxides (PYX 1). The flutes are rendered either in three-dimensional molding or paint.

The most recognized ceramic vessel with torsional flutes is a basin with molded flutes from Knossos (Evans 1921:242–243, suppl. pl. IIIb; 1935:120–121, fig. 88, sometimes called a “fruitstand"5 [14:1]). Many scholars have noted the similarity between this basin and the silver bowls from Tòd with torsional flutes (e.g., Bisson de la Roque et al. 1953:33–34; Warren and Hankey 1989:132–133, pls. 8A–B and 9A–B). The main similarity resides in the shape and size of the molded flutes on the ceramic example: they share the same dimensions as the silver flutes, and they run around the vessel at the same angle. Both vessels also have similar double-ring bases. It is difficult to deny the connection between the two. The ceramic basin was also painted in a creamy white paint,

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5 Evans probably calls this vessel a “fruitstand” because of these raised ridges on the underside of this vessel. Hogarth and Welch, however, believe that the raised base seems too small to be a large foot (1901:88).
probably as a means of evoking the silver color of the metal bowls. While the silver bowls and the basin are very alike, there are some differences. The diameter of the basin is approximately 33 cm, thus, larger in size than the bowls from Tôd. Also, the addition of the flat rim to the basin is not a feature of the metal bowls. It is the contention here that the basin is an example of the second phase of emulation: adaptation. The basin is likely the product of two metallurgical traditions. Whereas the torsional flutes are probably modeled on similar imported bowls as the ones found at Tôd, the additional rim is a tradition that stems from the Minoan practice of adding secondary rims to large bronze basins (see under BAS 1).

Two other vessels also display three-dimensional torsional fluting. One is a semiglobular cup/bowl (SG CUP 3) from the Kouloura area of Knossos (Hogarth and Welch 1901, fig. 22 [14.13]) and the other appears to be a jug (the neck is missing) from Patrikiès (JUG 4), near Phaistos (Levi 1976, pl. 16c [14.14]). Both vessels have the potential to be early in date, the bowl dating from MM I–II and the jug to the transition from “Pre-palatial to Protopalatial.” The basin was also found in the Kouloura area (Hogarth and Welch 1901:80; Evans 1921:243 fn. 1), thus, also potentially early (Evans implies MM IB in 1921:242–243), although it has been also dated to MM IB, MM IIA or MM IIB, depending on the scholar’s interpretation of the date of the Tôd treasure (e.g., Kantor 1965:11, 20–21; Warren 1980:496; Warren and Hankey 1989:131–135; Davis 1977:77). Given the propensity for other three-dimensional vessels with torsional (and vertical) fluting to be early in date (MM IB), one would attribute this vessel to this period, except for the fact that most other basins are MM IIB–IIIA in date. Perhaps it was a vessel that was purposefully made to look “archaic” in this later period (see 6.III.2 Function of Metal Vessels for more on “archaic” traits of certain skeuomorphs).

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6 Area described as the “area on the same slope as the first houses (A, B)” (Hogarth and Welch 1901:80).
Torsional fluting was also suggested through painted decoration. One pyxis (PYX 1) from room IL at Phaistos is particularly evocative of this technique (Levi 1976, pl. 117k [14:2 and 14:15]). The underside of this pyxis is evocative of the types of bowls seen at Tôd (Bisson de la Roque 1950, pl. XIV:70592 [14:4], pl.XIV:70593, and pl. XVIII: 70631). On the ceramic pyxis, white crescents are painted in a twisting pattern on a black background. Viewed from the bottom, the effect of the white and black areas running around the inside of the body resembles the effect of light and shadow on the molded flutes of the basin from Knossos [14:1] and on the silver bowls. Continuing up the side of the pyxis’ body are more painted more “crescents/triangles” (Levi 1976, pl. 117l [14:15]), which Walberg (1987a:62, fig. 45, motif 19:7) calls an elongated dentate motif. The overall effect of the painted decoration suggests a metal pyxis that was once completely fluted. The same torsional dentate pattern occurs on a small carinated cup (CS CUP 3; Pernier 1935, fig. 146 [14:16]), several conical cups (Levi 1961–1962a, fig. 26c; Levi 1976, pl. 145q’–w’ [14:17]), and two straight-sided cups (SS CUP 2; Pernier 1935, fig. 136 [14:18]; Levi 1957–1958, fig. 153b).

Also present at Tôd was a silver conical tumbler with torsional flutes (Bisson de la Roque 1950, pl. XVI:70618 [14:8]). A ceramic tumbler (TMB 1) from Phaistos perfectly mimics the torsional grooves of the metal example (Levi 1976, pl. XIIIf [14:19]). Alternating bands of orange and red twist around the body of the tumbler. The bands, outlined in white, are rounded at the top to form an arcade pattern. The grooves on the silver example are also blunted at the top with rounded arches. On the ceramic tumbler, the orange and red bands of color are outlined by a thin line of raised ceramic appliqué. The raised appliqué lends two-dimensionality to the tumbler. Instead of impressing the flutes into the clay, the potter chose to raise the “ridges” of the concave flutes off the surface of the vessel. It is possible that this ceramic tumbler was a imitation of a metal original.
With the exception of the painted tumbler, which dates to MM IB, the other painted examples of torsional fluting seem to fall within MM IIA (Fase Ia/Ib iniziale or Fase Ib iniziale) or MM II. The three-dimensional fluted examples tend to fall within MM IB. If the molded fluted basin can be dated to MM IB (see above), this would imply that imitations (including the painted tumbler and molded examples) were first introduced and then followed (a very short time later) by painted copies in MM IIA.

For bands of torsional fluting that occur on some ceramic straight-sided cups and bridge-spouted jars, see below under 4.IV.2 Bands with Fluting.

### 4.1.2 VERTICAL FLUTING

While certain silver bowls at Tôd displayed torsional flutes, another large percentage were decorated in vertical flutes. Examples include conical shaped bowls (Bisson de la Roque 1950, pl. XIV:70593 [15:1] and pl. XV:70598 [15:3], pl. XV:70600–70601 [15:2], and 70603 [15:4]) and rounded bowls (Bisson de la Roque 1950, pl. XV:70604–70605 [15:5-6], pl. XVII:70627 [15:7] and 70629, [15:8] and pl. XVIII:70630 [15:9]). In ceramic, allusions to vertical fluting occur on rounded cups (RD CUP), semi-globular cups (SG CUP), straight-sided cups (SS CUP), carinated cups (CR CUP), other cups, goblets (GBT), as well as some jars and jugs (JAR, JUG).

The closest imitation to the Tôd examples is a ceramic bowl found in the Knossos Stratigraphic Museum excavations (Warren and Hankey 1989:133, pls. 6A–B and 7A–B [15:10]) in a MM II context (with some MM I sherds). The bowl is a near exact copy of the Tôd bowls. It has very thin walls (1.2 cm wide), molded arcades underneath a plain rim, and raised concentric circles on the base. The bowl is even covered in a powdery white paint to potentially resemble the silver color of the original. The interior has incised

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7 Given the early date of other “three-dimensional” vessels that emulate vessels similar to the ones at Tôd, perhaps this bowl should be seen as belonging to MM IB.
vertical marks to imitate the inner face of the moldings (Warren and Hankey 1989:133). This bowl was probably an imitation of a metal import. The fact that it does not have handles, like other semi-globular cups that resemble the Tôd bowls, suggests that the Minoan potter had taken the bowl shape and adapted it to a cup shape with the addition of a handle.

Analogous to the pyxis (PYX 1) from Phaistos with the torsional white crescents on the underside (Levi 1976, pl. 117k [14:2])—which itself seems to be imitating silver fluted bowls—are two shallow ceramic bowls (BLW 2) with vertically painted crescents (see Warren and Hankey 1989, pl. 9C–D [15:11–12]). The crescent pattern is reminiscent in width and size to the vertical flutes seen on some metal bowls from Tôd (e.g., Bisson de la Roque 1950, pl. XV:70604–70605 [15:5–6]). On one bowl (Levi 1976, pl. 122c [15:12]), the artist is already taking liberties in the arrangement of the white crescents/flutes. To demonstrate that it is not so much the painting technique that is important in evoking fluting, one deep semi-globular cup from Vasiliki (Zois 2007, pl. 95 [15:13]), with dark lines on a white ground, and another cup from Knossos (MacGillivray 1998, pl. 14:375 [15:14]), with white crescents on a dark ground, produce the same effect of light and shadow, even though the technique is different. The same alternating bands of thick vertical lines in white and dark are seen on other forms as well. The motif occurs on carinated cups (Levi 1952–1954, fig. 110d [16:1]; Levi 1957–1958, fig. 160e [16:2]; 1976, pls. 133f [16:3], 134a–b [16:4–5], and 134d [16:6]), bridge-spouted jars (Levi 1976, pl. 107g [16:7]; 1957–1958, fig. 153e [16:8]; 1976, fig. 104a [16:9]), and jugs (Levi 1957–1958, fig. 154a right [16:10]; MacGillivray 1998, pl. 116:740–741 [16:11–12]). It is possible that vertical fluting, introduced as a technique via imported bowls, was transferred to these vessel types sometime by local craftsmen. The ceramic vessels with painted vertical fluting are dated to MM II or MM IIA (Fase Ib iniziale). The lone example of a vessel with three-dimensional fluting that is not a semi-globular bowl or
straight-sided cup is a bridge-spouted jar from Phaistos (Levi 1976, pl. 107g [16:7]; also Levi and Carinci 1988, pl. 57f), which can not be dated more accurately than MM II (Fase Ib).

In addition to the wide flutes as seen on the metal example from Tôd, certain ceramic vessels seem to be imitating metal vessels that had thin, tight fluting. The closest metal example with tight flutes is a silver bowl from Tôd (Bisson de la Roque 1950, pl. XVI:70619 [16:13]). The fluting on this example is arranged in a torsional pattern around the body of the vessel, but it is probable that vertical tight flutes may have existed as well. Tight vertical lines on ceramic vessels occur, for example, on a semi-globular cup (SG CUP 2) in “Egg-shell” Ware (Levi 1976, pl. XLVIIa [16:14]) and on a tapered semi-globular cup (SG CUP 2), also in “Egg-shell” Ware (Evans 1921, pl. IIb; also, MacGillivray 1998, pl. 103:619 [16:15]). These are dated to MM II (Fase Ib) and MM IB–MM IIA, respectively. The latter semi-globular cup [16:15] has thick white bands with added red S-patterns around the rim, middle and base. The color of the bands are evocative of silver or gold; if indeed they reflect metal antecedents, the added bands would parallel the use of added bands on straight-sided cups to strengthen the vessel (see 4.IV.3 Bands with S-shapes). The other semi-globular cup [16:14] has tight vertical lines terminating in white arched lines, right under the rim. The slightly flaring rim is painted in white elliptical/dentate patterns, which evokes the effect of fluting or crinkling.

**Arcades**

On certain bowls with flutes from Tôd, the ends of the flutes are rounded off into “arches” before reaching the rim (e.g., Bisson de la Roque 1950, pl. XV:70605 [15:6], pl. XV:70603 [15:4], pl. XV:70604 [15:5], pl. XIV:70593 [15:1], and pl. XVI:70613 [14:7]). The visual effect of these rounded ends is one of an “arcade” running around the body of the vessel. On most of the Tôd bowls, the rim is left plain, but, on one occasion, above
the arcade of the flutes, the rim is surrounded by a band of impressed dots (Bisson de la Roque 1950, pl. XVIII:70630 [15:9 and 17:1]). The same arcade (and dot) pattern is seen on certain ceramic cups from Knossos and Phaistos (e.g., Warren and Hankey 1989, pls. 6A and 7A–B). All of these are semi-globular cups (SG CUPs). The flutes are rendered in white paint as looping, arched lines (MacGillivray 1998, pl. 9:285 [17:2]; Levi 1976, pl. 125g [17:3], 125i [17:4], and 125k [17:5]; Pernier 1935, fig. 187 [17:6]), as black “crescents” on a white ground (Levi 1961–1962a, fig. 26b [17:7]), or as a single wavy line with unconnected straight vertical lines underneath (Levi 1976, pl. 125h [17:8]). The impressed dots are portrayed as solid white circles. On two examples, white pendant semi-circles surround the rim (MacGillivray 1998, pl. 9:285 [17:2]; Levi 1976, pl. 125g [17:3]). It is not clear if this is meant to evoke a “crinkling” of the rim. All of the cups, with the exception of the one from Knossos, were found in contexts dating to MM II (Fase Ib). The Knossos cup was found in a context with mixed pottery dating to MM IIB–MM IIIA (“West Polychrome Deposits;” MacGillivray 1998:33–34), but due to the mixing of material in this layer, with sherds dating from EM III–MM IA and MM IIB–MM IIIA (MacGillivray 1998:33), perhaps this cup can be dated earlier. A straight-sided cup from Phaistos has almost the same type of decorative treatment as the cups with arcades (Levi 1976, pl. 123f [17:9]). It has the same thin painted arcade lines and a row of painted dots. The rim is crinkled. It is not clear whether this cup was made to resemble the cups with arcades (a hybrid with decoration meant for a semi-globular cup applied to a straight-sided cup) or whether there was once a metal straight-sided cup with flutes and impressed dots. Certainly, straight-sided cups with dots and fluting do exist (e.g., MacGillivray 1998, pl. 11:326 and 72:326; Levi 1976, pl. 127a), but these are quite different in appearance (see SS CUP 1, SS CUP 5, SS CUP 6).

Even though technically not fluting, the rounded ends of the gadroons on certain metal bowls (e.g., Bisson de la Roque 1950, pl. XVII:70623 [17:10]), when translated into
ceramic, can have a similar effect to the arcades produced by fluting. This is apparent on a semi-globular cup/bowl from Knossos (Mackenzie 1903, pl. VI:3 [17:11]; also Evans 1921:241, fig. 181; MacGillivray 1998, pl. 103:616; Warren and Hankey 1989, fig. 10A–B). This vessel, made from the finest “Egg-shell” Ware, has large painted “gadroons” around the base composed of white elliptical shapes on a dark ground. These features may have been confused for flutes, if not for the comparison of this ceramic vessel with a particular bowl from Tôd with gadrooning (Bisson de la Roque 1950, pl. XVII:70623 [17:10]). Not only are the size and shape of the “gadroons” between the two the same, these vessels are the only ones that have their flutes/gadroons converge at the base. The only difference between the two is the design on the upper half of the ceramic cup/bowl. This vessel is stamped with a row of dots interspersed with “shield” designs. Perhaps the “shield” design was inspired by another metallic cup—a copper/bronze band fragment was found at Argolis with alternating repoussé figure-of-eight shields and dots outlined in a wavy line (Matthäus 1980:313, pl. 58:509), albeit in a later period—or perhaps, the design was drawn from the potter’s imagination. It is possible that the ceramic cup, with its extra design, was an adaptation or hybrid of two metal cup/bowl types.

Double Arcades

Very few vessels had double arcades. Three ceramic vessels are known. Two of these are relatively early (MM IB to MM IIA) and are decorated with three-dimensional moldings. One vessel, a semi-globular cup or bowl, was found at Knossos (Evans 1921, fig. 183a.1 [17:13]). The vessel is made from the finest “Egg-shell” Ware “quite as fine as its metallic prototype” (Evans 1921:243). The cup/bowl is painted a matt white with red accents on a dark ground. In between the flutes are fleur-de-lis patterns. The same arched pattern with fleur-de-lis is seen on another painted sherd (Evans 1921, fig. 183a.3), perhaps a derived copy of this ceramic vessel. Although Evans (1921:243) suggests that the cup/bowl “points to a repoussé original in metal-work with inlaid ornamentation,” it seems unlikely
that inlay would be stable within an extremely curved surface; the fleur-de-lis appears to have been a painted addition to the molded ceramic shape. Even if the fleur-de-lis may not have been on the original metallic antecedent, there is no denying the “metallic” effect of the three-dimensional flutes. Very similar to this cup in style is another cup (DT CUP 1) with a molded double arcade from Phaistos (Levi and Carinci 1988, pl. 82d [17:14]). The lower half of the vessel appears to have been broken off; therefore, it is not clear if the flutes of the lower arcade extended to the bottom of the vessel, as on the semi-globular cup/bowl. As it is now, it appears as if the demitasse cup had two (maybe more?) rows of arched flutes. Perhaps a similar metallic prototype influenced both vessel types. If indeed the ceramic vessel with molded double arcades from Knossos [17:13] was a bowl, then the addition of a handle to the shape to transform it into a cup suggests an adaptation by local potters. Both the three-dimensional cups with double arcades were early in date. The double arcade cup/bowl from Knossos was found in the “Royal Pottery Stores” (MM IB–MM IIA) and the demitasse from Phaistos was found in a MM IIA (Fase Ib iniziale) context.

Whereas the previous vessels were globular vessel types with molded flutes, the third vessel shape with allusion to double arcades/fluting is a straight-sided cup from Knossos with white painted arches (Evans 1921, fig. 183a.4; MacGillivray 1998, pl. 143:979 [17:12]). In its double arcade design, this ceramic cup is reminiscent of the gold straight-sided cup with its double rows of flutes from Grave Nu at Mycenae (Mylonas 1972–1973, pl. 152; also Davis 1977:125–129, no. 25, figs. 98–99). The flutes on the ceramic cup are evoked by two rows of painted arcades and painted vertical lines. The same design occurs on the inside of the cup as well, alluding to the three-dimensional effect of fluting on metal vessels. The vertical lines are covered in small dots. These are, again, reminiscent of the double row of repoussé dots surrounding the rim of the gold cup from Grave Nu. In between each line are S-shapes, a design that also occurs on a bridge-
spouted jar with allusions to vertical fluting (Levi 1976, pl. 104a [16:9]). The ceramic cup from Knossos was found in the “Monolithic Pillar Basement” with material from periods dating to MM IA to MM IIIA. The date of the cup itself, however, is likely MM IIIA or later (see more under 6.II.3 Origins. Shaft Graves at Mycenae).

Fluting on Lower Half of the Vessel

As demonstrated by the “arcade” motifs and the fluting designs on the ceramic cup/bowls from Phaistos and Knossos, it appears that the arcade pattern/vertical fluting design was eventually incorporated into the ceramic repertoire. “Fluting” was applied to the base of semi-globular cups (Levi 1957–1958, fig. 155a [18:1]; Levi 1976, pls. Lla [18:2], 124i [18:3]; MacGillivray 1998, pl. 78:398, 399), rounded cups (Levi 1976, pl. Llb–c [18:4–5], demitasses (Levi 1976, pl. LVa [18:6]), carinated cups (Levi 1976, pl. LIIIId [18:7]), jugs (Levi 1976, pl. XXXIb [18:8]; MacGillivray 1998, pl. 8:250 and 59:250 [18:9]), jars (Levi 1976, pl. XXIIb), and bridge-spouted jars (Levi 1965–1966, fig. 64b [18:10], 1976, pl. XXXVIIIb [18:11]) for example. In these cases, only the bottom half of the vessel was painted with either arched lines/arcade or with white crescent shapes. The rest of the body was painted in various motifs drawn from the ceramic painted repertoire. The addition of “fluting” on the base of many vessel types may represent the third stage of imitation, derivation—which happens when the original “metallic” motif is divorced from its original context (in this case silver semi-globular bowls with fluting) and then applied to other shapes (on jars, jugs, and other bowls).

Rosettes on the Base

One of the features that have been noted about the silver bowls from Tôd is the base. Either the bowls have two raised concentric circles or a chased rosette design on the base (for the rosette design, see, e.g., Bisson de la Roque 1950, pl. XVII:70620 [14:10], 70627 [15:7], and 70629 [15:8], and pl. XVIII:70630 [15:9]). The rosette design on the base of
these silver bowls have been cited as parallels for the painted rosette on the base (and sides) of a ceramic semi-globular cup from Knossos (Evans 1921:241, pl. IIa; also, MacGillivray 1998, pl. 103:617; Warren and Hankey 1989:133, fig. 11A–B). While the metallic rosettes may have inspired the idea of decorating some semi-globular cups at the base with painted designs (see, e.g., MacGillivray 1998, pl. 13), it is the contention here that the rosette seen on this ceramic cup was not inspired by the base of these types of metallic bowls. Rather, it is thought here that the Knossian cup may, in fact, be imitating enamel or inlay work, a very different metallic technique (see more under 4.VII Inlay and Enameling).

4.1.3 HORIZONTAL FLUTING AND INCISING

At times, it is difficult to differentiate the practice of fluting and incising on ceramic vessels. Any deep incising will produce grooves, which can resemble fluting. Therefore, the two relatively distinct metallic techniques are discussed together. The difference between the techniques lies in the depth of the groove and the manufacturing technique. Incising (and chasing) in metalwork is generally applied directly to the exterior surface of the vessel, either to create linear lines or to outline figurative motifs. Fluting is performed around a punch, producing deep, regular and concave flutes. Horizontal incised lines on metal vessels, as seen for example on the silver Vapheio cups from the eponymous site, seem to be relatively shallow decorative elements in the MBA and LBA (Evans 1928, fig. 88; Davis 1977:258–260, figs. 105–106). In contrast, the two gold straight-sided cups from Shaft Grave IV at Mycenae (Karo 1930, pls. CIV and CX; also, Davis 1977:173–175, nos. 58–59, figs. 140–141) have deep horizontal grooves. On these particular
examples, the flutes cover the whole body. The horizontal fluting on these cups is similar to the decorative technique used on other Minoan vessels from the Shaft Graves as well, such as, for example, on the Minoan-made silver jar from Shaft Grave IV (Karo 1930, pl. CXXXIV; also Davis 1977:149–155, no. 43, fig. 120) and on a bronze jar from Knossos (Evans 1928:645, figs. 402, 410, and 411a; Davis 1977, fig. 121). No vessel from the Tôd treasure has been found with horizontal fluting, perhaps because this does not seem to have been a popular decorative technique for semi-globular bowls (the main component of the assemblage), even in later periods.

The most popular grooved/fluted cup in ceramic is the small carinated cup with tight horizontal incised lines (looks ribbed). The horizontal incisions occur on the upper half of the cup (MacGillivray 1998, pls. 3:95 and 40:95 [19:2]) or around the middle of the body (MacGillivray 1998, pls. 3:97, 32:97, and 41:97 [19:3]; pls. 6:142 and 46:142 [19:4]; Levi 1976, pls. 31c [19:5], 130p [19:6], 130s [19:7], 134e [19:8], and 134h–i). Painted copies of these incised cups were also found (Levi 1976, pl. 134f [19:9] and 134l [19:10]). Whereas the incised versions do not have ribbing lower than the carination, white lines, nevertheless, do occur below the carination on the painted versions. The incised carinated cups from Knossos date to MM IB (from the “Early Chamber beneath the West Court”), whereas the incised and painted carinated cups were found in contexts that could not be dated any closer than MM II (Phase Ib). Perhaps they too should be seen as belonging to MM IB or slightly later? This type also occurs in the Quartier Mu at Malia (e.g., Poursat and Knappett 2005, pl. 27:721, 725, 741, 769, and 772), also from MM II contexts. The same fine ribbing does not occur on straight-sided cups (perhaps with one exception from Phaistos: Levi 1976, pl. 129s [19:11]). Rather, the horizontal

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8 Davis (1977:173–175) attributes the origins of these two gold cups to the mainland due to the the treatment of the handles, but concedes that the bodies of the vessels follow Minoan techniques. It is likely that, after the original handles were damaged, these features were replaced on the mainland by Mycenaean artists. If this were the case, this would imply that these cups were Minoan-made and were curated by the Mycenaeans (see more under 6.II.3 Origins. Shaft Graves at Mycenae).
grooves/fluting on straight-sided cups are evenly distributed and more widely spaced, such as is seen on the two gold cups from Mycenae [19:1]. Straight-sided cups with evenly spaced horizontal grooves on the whole body have been found at Knossos (MacGillivray 1998, fig. 2.10 type 12, pls. 17:404–407 and 79:404–407 [19:12], pl. 154:1037 [19:13] and pl. 156:1044) and Phaistos (Levi 1976, pl. 209p [19:14]; contra MacGillivray 1998:71). A related group of cups with evenly spaced grooves limited to the upper half of the cup are also found at Knossos (MacGillivray 1998, fig. 2.10 type 11, pls. 18:426 and 81:426 [19:15]). Both of these groups of cups are decorated in a monochrome ground with white dots. Only one of these (MacGillivray 1998 pl. 18:426 [19:15]) has additional white and red slanting lines. The example from Phaistos is different from the others in having a painted foliate band around the rim [19:14]. The white dots on a dark ground and the stratigraphy of the finds date these cups to the end of MM IIB–MM IIIA (MacGillivray 1998:71). The same type of cup is found at Archanes (Sakellarakis and Sapouna-Sakellaraki 1997, fig. 385c) and Malia (Olivier et al. 1979, fig. 23, and an example of a stone copy on fig. 22). Therefore, it’s possible that the straight-sided cup with horizontal grooves was mainly limited to Knossos and Eastern Crete.

Although not technically fluting, another group of cups had horizontally incised lines as decoration: some tall carinated cups with tapering foot (MacGillivray 1998, fig. 2.12:3 “short-rimmed Angular” cup type). The decoration consists of two sets of three parallel grooves set just below the shoulder and around the bottom of the vase (MacGillivray 1998, pls. 17:408 and 79:408, 17:411–412 and 80:411–412 [19:16–17]). The sets of incisions are similar in style to the incised decoration found on the silver cups.

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9 MacGillivray (1998:71) cites an example of this kind of cup at Phaistos (Levi 1976:477, fig. 730).

Cups of this type date to MM IIB–MM IIIA, the same time that Vapheio cups were apparently first being produced. Just like these latter types of vessels, perhaps tall angular cups were produced with thick metal plate, which may not have allowed for repoussé but only shallow incising as decoration. This is supported by one example of a tall carinated cup with what appears to be a slight repoussé mid-rib at the mid-section (Levi 1976, pl. 134n; also Levi and Carinci 1988, pl. 83e). It is argued here that the mid-rib was used to strengthen thin cups walls; perhaps, then, if the tall angular cup was not reinforced with a mid-rib, it had to be reinforced with thick walls.

The only other vessel types with incising are two semi-globular cups (MacGillivray 1998, pls. 18:417 [19:18] and 147:987 [19:19]), a demitasse cup (Levi 1976, pl. 123g [19:20]), a small jug with flat rim (MacGillivray 1998, pls. 155–156:1042 [19:21]), a shallow bowl with a wishbone handle (Levi 1976, pl. 122d [19:22]), two bridge-spouted jars with horizontal incised lines (Levi 1957–1958, fig. 119 bottom right [19:23]; MacGillivray 1998, pl. 80:422 [19:24]) and, possibly, some bucket-jars (Levi 1976, pl. 39h, 39k). The demitasse cup [19:20] has incised lines on the upper half of the vessel and a row of impressed dots connected by an incised line at the top. The row of impressed dots is similar in style to the band of impressed dots on a silver bowl from Tôd (Bisson de la Roque 1950, pl. XVIII:70630 [15:9]) and to vessels with possible added bands decorated with linked dots (see 4.IV.1 Bands with Dots). It is possible that the incised bridge-spouted jars were derived versions of “hammered” bridge-spouted jars (see below, 4.III Hammering), but it is still not clear without extant examples whether the

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10 One of the cups with this type of incisions has been called a straight-sided cup by MacGillivray (1998:143, no. 408). The cup is broken at the shoulder, however. Therefore, it could conceivably be a tall angular cup like the others, as these are the only types of ceramic cups with this type of decoration. Alternatively, if this were, in fact, a straight-sided cup, it could be an early example of a Vapheio-type cup with incised decoration. The handle is missing, thus, the cup could have been an early attempt at copying a Vapheio-type cup.
incising on these other vessels actually represent fluting or chasing in metal. With the exception of the possible bucket jars (Levi 1976, pl. 39h, 39k), which are MM IB (Fase Ia) in date, the unique bowl with wishbone handle [19:22], the demitasse with incised lines [19:20], which were both found was found in MM IIA contexts (Fase Ib initiale), and one of the “hammered” bridge-spouted jars [19:23], attributed to MM II (Fase Ib), the other vessels with incised lines (and horizontal fluting) fall within the MM IIB–IIIA date range.

4.1.4 “TORTOISE-SHELL RIPPLE” MOTIF

The term “tortoise-shell ripple,” first used by Evans (1921:592–593), applies to a motif of tight vertical lines that have a ripple appearance due to the burnishing of the vessel to a high gloss (Betancourt 1985:114). At times it is applied to the whole vessel, and, at other times, it appears in friezes on the body. The fabric of the pottery decorated in this way “was always hard and well fired, and the sherds ‘clink’ when dropped on a hard surface” (Betancourt 1985:113). The motif was popular in MM IIIA to LM IA, but began in the MM IIB period (Evans 1921:592–593; Betancourt 1985:113). Some of the first examples were found at Knossos (Evans 1921:593, fig. 425 bottom; 1935:121, fig. 89, pl. XXIXe) and Palaikastro (Dawkins and Currelly 1903–1904:210–211) in MM II contexts. One early example of “tortoise-shell ripple” occurs on a fragment of a semi-globular cup (Evans 1921:593, fig. 435 bottom [20:1]). The base is painted in a rosette and the “tortoise-shell ripple” motif radiates from the base, similar in concept to the fluting seen on some silver bowls from Tôd and some ceramic vessels, especially semi-globular cups (e.g., Evans 1921, fig. 181 [17:11]; Levi 1957–1958, fig. 155a [18:1]; Levi 1976, pl. L1a [18:2]) and rhyta (MacGillivray 1998, pl. 78:398–399 [20:2–3]; see also 4.1.2 Vertical Fluting, on lower half of the vessel [18:1–11]) The “tortoise-shell ripple” decoration on the interior of a basin with stamped circles on the rim (Evans 1935:121, fig. 89, pl. XXIXe) led Evans (1935:121) to suggest that the motif was “an attempt to depict the actual effect
of the light and shade of the original repoussé flutings,” as seen, for example, on the basin with the molded flutes (Evans 1935:121, figs. 88–89 [14:1]). The basins are MM IIB–IIIA in date.

The tradition of vertical fluting begins earlier than the appearance of “tortoise-shell ripple,” perhaps as far back as MM IB, but certainly by MM IIA. In these earlier periods, however, the flutes were more widely spaced. But, apparently by the end of MM IIB, vertical fluting becomes narrower. Some scholars have commented on the similarities between the vertically fluted gold cup from Grave Gamma at Mycenae (Mylonas 1972–1973, pl. 58a.b1; also Davis 1977:130–133, no. 27, figs. 102–103 [20:4]) and the “tortoise-shell ripple” effect on pottery, especially on some ceramic straight-sided cups (e.g., Evans 1921:593, fig. 435 top [20:5]; Levi 1976, pl. 212r [20:6]), suggesting that the “broken dark brown and red/brown vertically parallel lines on a light ground evoke the play of light on the surface of faceted gold” (Reeves 2003:232; also, Evely 1993:622). The comparison between the gold cup from Grave Gamma and the ceramic examples of “tortoise-shell ripple” on straight-sided cups is striking, not only for the effect of light and shadow on the narrow flutes, but also for the imitation of the mid-rib, a unique metallic feature. The “tortoise-shell ripple” motif is also reminiscent of the double row of tight fluting on the shoulder band of the jar from Selopoulo, near Knossos (Matthäus 1980:189, pl. 33:282 [20:7]). It may not be a coincidence that the “tortoise-shell ripple” motif usually occurs as swathes of contained vertical bands on ceramic vessels, especially on the earliest specimens. Although the bronze jar from Selopoulo was found in a later context (LM IIIA) than a similar-shaped ceramic jar from Anesmopilia (MM IIB–MM IIIA), the latter jar suggests that the three rows of “tortoise-shell ripple” around its body may have been inspired by similar metal jars with bands of ornamental fluting (Sakellarakis and Sapoouna-Sakellaraki 1997, fig. 233 [20:8]). The ceramic jar also features a large clay rivet at the join between the handle and the rim, suggesting the
imitation of a metal antecedent. The bands run around the vessel, like the added bands of fluting run around the shoulder of the bronze jar and some ceramic bridge-spouted jars (see also 4.IV Ornamental Bands). The tight fluting seen on the Anesmopilia jar is paralleled by similar decoration on many (piriform, globular, and conical) rhyta, which have been shown to have metallic antecedents as well (Koehl 2006, e.g., nos. 90–91, 102–104, 170, 432, 452, 489, 510, 530, and 637–638). The earliest of these are rhyta from Knossos with “tortoise-shell” around the shoulder and base (MacGillivray 1998, pls. 21:539 and 90:539, 30:1005 and 149:1005; also Koehl 2006:87, fig. 6:90–91) and around the base (MacGillivray 1998, pl. 78:398–399 [20:2–3]). Both rhyta were found in an MM IIB–IIIA context (“West Polychrome Deposits”).

“Tortoise-shell Ripple Ware” occurs as a minority fabric in the MM IIIA period (Betancourt 1985:114). The most popular shapes in this were semi-globular cups, straight-sided cups, ewers, and rhyta (Mountjoy 1993:35), shapes that have been shown to have metal antecedents. By the end of MM IIIA into LM IA, this becomes a common motif, appearing on many cups, jars, amphora, bridge-spouted jars, bowls, and jugs (Betancourt 1985:114). It appears that the “tortoise-shell ripple” motif, however, grew out of an earlier tradition of vertical fluting, as seen, for example, on semi-globular cups, rhyta, and jars [20:1–3, 8]. It may be that new metallic models with bands of fluting were introduced at this period, capitalizing on earlier fluting traditions.

The “tortoise-shell ripple” motif seems to represent a good example of reaching the third stage in the emulation and imitation cycle: derivation. Initially, the fine vertical lines may have been reproducing the tight fluting on metal vessels, as seen, for example, on the gold cup from Grave Gamma at Mycenae or on the ornamental band on the bronze jar from Sellopoulo. Imitation of fluting on ceramics is a practice that continues down from the MM IIA (maybe MM IB) period, and, thus, is not a new tradition. The “ripple”
motif was applied to a new fabric, which “clinked” when dropped. This fabric was in the minority in MM IIIA and was reserved for fine tablewares (Reese 2003:232). The motif was initially applied to shapes that often display other “metallic” traits, and were found in contexts with other ceramics deemed “metallic.” Then, for aesthetic reasons, the motif becomes very popular. In the third, derivative stage (LM IA), it is then applied to shapes that may not necessarily have recent metallic antecedents, such as certain jars, amphora, or jugs. It no longer becomes an indication of “metalness” by this time, but, rather, it has now been incorporated into the ceramic repertoire as a stylistic choice.

4.11 GADROONING

Gadrooning is an ornamental technique that basically consists of a running frieze of repoussé petaloid motifs (see [20:9] for a modern example of gadrooning). The “petals” are achieved by hammering the metal sheet around a punch from the reverse side of the vessel and chasing from the obverse. Gadrooning is similar in concept to fluting, except that the “flutes” are pushed out of the surface of the vessel, rather than sunk in, as with fluting.

Gadrooning was practiced from an early age. For example, one of the earliest known examples of true gadrooning on a metal vessel was found at on a cup/bowl from Central Anatolia, dating to approximately 1500 BCE (Przeworski 1939, pl. X:7). The shallow, wide bowl is of a type later called a phiale. Earlier than this are metal examples from Tôd that display the incipience of gadrooning. Two silver bowls from this site have “flutes” that are convex in profile rather than concave, and the ends of each flute terminate into rounded petaloid features (Bisson de la Roque 1950, pls. XIV:70592, XIV:70593).

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11 This may not be the first time that new technologies are developed in order to recreate “metallic” wares (e.g., Rutter 1983). The introduction of the potter’s wheel in MM IB–MM IIA also coincides with the introduction of more “metallic” shapes on Crete.
Thus, even though the “petals” on these bowls are not as pushed out of the surface as in later examples, these bowls do seem to display the characteristics of gadrooning: repoussé petal shapes. Gadrooning and fluting appear related in technique, and, although the extant metal examples of this technique are few, these specimens demonstrate that the technique was known. The best examples of gadrooning in metal on Crete are two basin rims with repoussé foliate designs. The foliate rims, one from Gournia (Silverman 1974, fig. 13:1) and the other from Knossos (Matthäus 1980:211, pl. 39:325), display the characteristic repeated repoussé petaloid shapes. These basins are dated to MM IIIB–LMIA but certain ceramic forms from Crete suggest that the technique was known for the MM period.

In ceramic, there are examples of molded cups with gadrooning and there are painted examples. One cup from Knossos is particularly evocative. This cup (SG CUP 1), painted in a uniform dark-brown, has raised petaloid sections running around the whole exterior of the body (MacGillivray 1998, pl. 153:1031). The inside is decorated with almost-vertical blunt incised lines. The raised petaloid segments on the outside and the interior incised lines are what one would expect on an imitation of metal gadrooning. It is unclear if inside was pushed out to create the petal effect or if the inside was smooth. The description of the interior seems to indicate that the inside was flat (MacGillivray 1998:170, no. 1031). If this is indeed the case, this may imply that the vessel was fashioned in a mold to create this decorative effect. Another vessel from Malia with raised petaloid sections running around the body also seems to have been made in a mold (Vandenabeele 1980:89, fig. 119, no. 120). The date of the Malia vessel is MM II, whereas the molded cup from Knossos was found in a MM IB context, making this one

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12 Other possible cases of gadrooning occur on the rim of a bronze semi-globular cup from either Shaft Grave III or IV at Mycenae (Karo 1930, pl. CLXIV; also Matthäus 1980:222, pl. 41:342), the rim of a rounded cup (Karo 1930 pl. CXXXVI:786/7) from Shaft Grave V, and the rim of a large basin from Grave Epsilon at Mycenae (Matthäus 1980:130, pl. 18:154).
of the potentially earliest cups done in imitation of gadrooning. The Malia example is likely just as early.

Another cup from Knossos (MacGillivray 1998, pl. 100 upper left, no number [20:14]), a deeper example of a semi-globular cup has a decoration that looks like a cross between gadrooning and fluting. The “gadroons” are more angular and widely spaced. The effect of “gadrooning” or “fluting” was achieved by painting alternate swathes of white and dark triangular sections that tapered near the bottom. The effect is so convincing that from the angle of the light in the photograph of the piece, it really does appear as if this vessel had a three-dimensional structure (MacGillivray 1998, pl. 100 upper left, no number [20:14]). This cup (or bowl?) was found in the SW room of the “Royal Pottery Stores,” a context dating to between MM IB and MM IIA (MacGillivray 1998:37).

From Phaistos come other vessels with possible gadrooning effects. One vessel is a semi-globular cup with repoussé oval shapes around its upper body (SG CUP 1; Levi 1976, pl. Lb [20:15]). The raised sections are painted red, with small white circles and two dark “leaves” superimposed on top. The overall effect resembles a strawberry. The rim is outlined in large white pendant semi-circles on the inside and smaller white semi-circles on the outside. Around the base are wavy lines, and a floral motif is painted in white in between the raised sections. This cup is dated to MM II (Fase Ib). Although the “strawberry” motif is not particularly “metallic,” the raised sections, the shape of the cup (SG CUP) and the semi-circles at the rim are probably indicative of metallic prototypes. Two other cups from the same family have more derivative gadrooning effects, which are alluded to via circular type “indentations.” One is a plain cup with no decoration (Levi 1976, pl. 179c [20:16]), whereas the other one has two rows of “indentations,” in addition to incised lines around the rim and mid-body as well as a “crinkly” rim (Levi and Carinci 1988, pl. 81i and p. 612, fig. 985). This latter cup is dated to MM II, and may be a hybrid
of a number of different decorative techniques (gadrooning, incising, crinkling). The plain cup is dated to MM IIB, the last time three-dimensional gadrooning is seen in pottery until later periods.

In addition to a “plastic” decoration, gadrooning may have also been rendered by incised and painted motifs. A bridge-spouted jar from Phaistos seems to bridge the gap between the molded and painted examples (Levi 1976, pl. 28i). The jar has three (or more) large painted, incised and slightly repoussé petal motifs running around the body of the vessel (Walberg 1987a:69–70, motif 27:8). These motifs are painted red with white outlines. The incising was an attempt to define the motif and to raise it from the surface of the vessel without having to use a mold or execute repoussé work. It is perhaps a more derivative version of repoussé. This type of bridge-spouted jar has “handles of metallic type” (Walberg 1987a:136–137, form 17, type 89), suggesting a possible link between shape and decoration.

To determine ceramic emulations with painted gadrooning is a little more difficult. Some possible candidates are a bridge-spouted jar from Phaistos (Levi 1976, pl. XXXIVa), unique globular pyxis (Levi 1976, pl. XLII), also from Phaistos, and a “Egg-shell” Ware goblet from Knossos (Evans 1921, fig. 183a.2; also MacGillivray 1998, pl. 135:925—both reference the same object, even though the goblet is depicted with a different base in each illustration). The painted red petal motifs around the lower half of the globular pyxis and around the body of the painted bridge-spouted jar are akin to the raised petaloid features on the bridge-spouted jar from Phaistos. All vessels feature “petaloid” features that are painted red with a white outline. Thus, even though, taking them on their own merits, the painted petal features on the jar and second bridge-spouted jar do not seem particularly “metallic,” the close relationship of this motif with the repoussé “petals” on the first bridge-spouted jar tend to suggest that all are meant to represent the same thing: gadrooning. In
addition to the “gadrooning” motif, both the second bridge-spouted jar [20:18] and the globular pyxis [20:19] feature other “metallic” decoration. The bridge-spouted jar has a linked-dot band around its neck (see 4.IV.1 Bands with Dots), and the globular pyxis, with its three-dimensional sconces, spiked strip running around the middle of the jar, and the added bands of chevrons, seems to be emulating metallic prototypes.

The “petaloid” motif on the goblet from Knossos [20:20] seems more secure in its interpretation as gadrooning. The double row of elliptical shapes on the goblet are evocative of the repoussé petaloid shapes on the added metal rim from Gournia, which was executed in gadrooning (Silverman 1974, fig. 13:1 [20:10]). The painted white arches on the goblet are also akin to the rounded outlines around the gadroons on the metal basin rims. The orange yellow color of the petaloid shapes led Evans to believe that “the delicate fluting of the original…represent[s] gold inlay” (Evans 1921:243), but, in fact, if this ceramic goblet were in fact imitating metal prototypes, it seems more likely that the repoussé gadroons would have been gilded in contrast to the background, such as they may be done on the added rims (3.II.3.2 Added Rims). The white horizontal bands around the goblet could also have been added strips of metal. The date of the vessels with painted “gadrooning” motifs range from MM IB (Fase Ia) for the repoussé bridge-spouted jar (Levi 1976, pl. 28i [20:17]), MM IB–MM IIA (“Floor beneath the Room of the Olive Press”) for the goblet (Evans 1921, fig. 183a.2 [20:20]), MM IIA (Fase Ib iniziale) for the painted bridge-spouted jar (Levi 1976, pl. XXXIVa [20:18]), and MM II (Fase Ib) for the globular pyxis with appliqués (Levi 1976, pl. XLII [20:19]).

4.III “HAMMERING”

Certain ceramic vessels were fashioned in a manner that evokes the purposeful shaping of metal vessels into horizontal sections with sharp ridges are called here, for lack of a better term, “hammering.” This technique is different than carination. The vessels mentioned
within this group do not have one carination, but the profile of the whole vessel is ridged into intentional “sections,” which, if translated into metal, would have been an intentional decorative choice.

The ridging of a particular bridge-spouted jar (BSJ 4) from Phaistos (Levi 1976, pl. XXXIXd [21:1]) is a good example of the shaping of the clay into “hammered sections.” The whole body of the jar is divided into wide horizontal sections of concave grooves and sharp ridges. In metal, such ridges could have been achieved by hammering from the inside of the vessel, or, alternatively, by joining different sections of metal plate together. This bridge-spouted jar was painted with white linked circles interspersed with and orange and red dots. The decoration does not correspond to any known metal decoration, but the repetition and the simplicity of the motif would not have been impossible to achieve with inlay or added bands. Another bridge-spouted jar also has repoussé ridges, but is somewhat different from the last example (Levi 1976, pl. 107e [21:2]). The ridges are more closely-set, the tops of the ridges are painted with white dots, and the bottom of the vessel has white spiral-like motifs. Perhaps this jar was modeled on a different metal prototype than the painted “hammered” jar [21:1]. Although this example may not have had the same metallic prototype, the other examples of bridge-spouted jars alluding to “hammered” metal jars, however, seem to have been copies of either the same metal prototype as the painted “hammered” jar (or were themselves copies of the ceramic example). All were alike, but lacked the “sharpness” of the first. One jar (Levi 1952–1954, fig. 109e [21:3]) was not painted, but still retained some slight ridging, whereas the other two (Levi 1957–1958, fig. 119 bottom left [19:23]; MacGillivray 1998, pl. 80:422 [19:24]) were not only undecorated, they only had incised horizontal lines in lieu of ridging. These techniques appear to be derivative of the “hammered sections” evident on the painted bridge-spouted jar [21:1].
In addition to angular and ridged bridge-spouted jars, other jar types also had ridged profiles that, if translated into metal, would suggest shaping by hammering. These types include some situla-looking jars (JAR 3; Levi 1976, pl. 116f [21:4]) and some demitasse cups (DT CUP 1) from Phaistos. Two of these demitasses cup types were made from “Egg-shell” Ware—one was painted with a repeated floral design (Levi 1976, pl. XXIIIa [21:5]) and the other was covered in a lustrous slip (Levi 1976, pl. 123c [21:6]). One lobed demitasse (DT CUP 4) had graduated ridged sections running down its body, which was painted with alternating sections of white “hatches” and orange dots (?) (Levi 1976, pl. 30b [21:7]). On the inside rim of the demitasse with painted floral designs [21:5] are a series of orange and red dots—similar in spirit to the orange and red dots on the angular bridge-spouted jar [21:1]. In between each ridge on the cup are painted bands in orange and red. Red and orange bands occur on other vessels, such as the semi-globular cup with yellow bands and fluting (Mackenzie 1903, pl. V:3; Evans 1921, pl. IIb; also MacGillivray 1998, pl. 103:619), straight-sided cups with ornamental bands (SS CUP 1 and 4.IV Ornamental Bands), and jars with torus rings (3.II.2 Torus Ring and Separate Necks). The red and orange bands can reasonably be argued to reference gold or copper added metal strips. If this were the case for this demitasse [21:5], then perhaps the original metal cup was, indeed, made from separate pieces of plate and joined together, with the added strips covering the joins. The demitasses with “hammered” sections are dated to MM IB (Fase Ia) or MM IIA (Fase Ib iniziale). The situla-like jar and the bridge-spouted jars similar decoration are dated to MM II (Fase Ib), except for the fragments of a bridge-spouted jar with incised lines from the “West Polychrome Deposits” at Knossos (MacGillivray 1998, pl. 80:422 [19:24]), dating to MM IIB–IIIA. Either the “hammering” technique was derivative at this point, or this vessel should be dated to an earlier period.
4.IV ORNAMENTAL BANDS

Minoan artisans were fond of “rich color contrasts of different metals” (Davis 1977:331). This was apparent in the extensive use of gilding, silver plating, the use of copper/bronze reinforcement elements, inlay work, the addition of secondary vessel parts, such as added rims, and, it is argued here, added bands or strips. Metal vessels with ornamental bands have been found on Crete and the mainland. A silver ewer with gold and electrum strips has been found at Zakros in the west wing of the Palace (Platon 1971, fig. on p. 87; also Davis 1977:102–105, no. 13, figs. 76–77). The vessel is somewhat flattened, and the surface is much corroded. Still visible are two vertical added strips of silver on the body of the ewer and one strip of silver fused with electrum around the base. The silver strips were placed symmetrically on the body, opposite the handle. The features swell outward at the widest point of the body and curve inward at the neck. The upper portion of the vessel is not preserved, but it is possible that the strips may have curved outward again above the neck to frame the spout. These features were apparently fused to the body of the ewer. Decorating the silver strips were small silver bosses, set at regular intervals along the ornamental bands. Apparently, both the silver strips and the bosses were then covered with a thin gold foil, to create a contrasting decorative feature on the vessel (Davis 1977:103). The ewer was found in an LM IB context, but the broken and corroded state of the vessel may suggest that the vessel was already old when it was deposited.

Ornamented metal bands were also found on a number of bronze jars and jugs from Crete and the Greek mainland. Each band displays a different chased or repoussé design. Analogous to the function of the torus ring on ewers and rhyta (3.II.2 Torus Ring and Separate Necks), the added bands apparently covered the join between the body and the neck portions of the jars. Similar to the added rims on certain basins and mainland cups (see 3.II.3 Added Rims and BAS 1), the decoration on the added feature is usually...
repeated on the handle, and both the rim and handle was usually gilded. The list of ornamentation on the added bands include a pattern of mirrored foliate bands (Matthäus 1980:189, pl. 33:283 [21:9]), a double row of slanted vertical lines (or chevrons) (Matthäus 1980:189, pl. 33:282 [21:10]), incised horizontal lines (Matthäus 1980, pl. 34:284 [21:11]), a repeated repoussé ivy pattern (Matthäus 1980:189–190, pl. 34:285–286 [21:12–13]), a series of repeated repoussé bulls’ heads outlined in repoussé dots (Matthäus 1980, pl. 34:287 [21:14]), a design of repoussé “wavy-lines” interspersed with dots and outlined in notched lines (Matthäus 1980:190, pl. 34:288 [21:15]), a band of repoussé squares laid on a grid (Mathaus 1980:201, pl. 36:303 [21:16]), and two fragments of bands with repeated repoussé figure-of-eight shields (Matthäus 1980:313, pl. 58:509–510 [21:17–18]). The ornamental band with the design of repoussé foliate bands on a jar from Sellopoulo (Matthäus 1980:189, pl. 33:283 [21:9]) is almost exactly like the design of foliate bands on silver fragments found in Shaft Grave V at Mycenae (Karo 1930, fig. 65; also Davis 1977:164–165, fig. 131 [21:19]). One fragment appears to be from a cup rim, but the others are indeterminate. It is not unreasonable that some may have come from ornamental bands dating to an earlier period.

The extant metal bands are generally all dated to the MM III, LM, or LH periods, but this is not surprising, as very little metalwork has survived from the Middle Minoan period. Painted ceramics from the MM period, however, seem to suggest that ornamental strips and bands may have been used on some metal vessels of the period. Painted bands that may have metallic antecedents mainly occur on straight-sided cups (SS CUP 1, SS CUP 5, SS CUP 6) and bridge-spouted jars (BSJ 5), but they do appear on some semi-globular cups (SG CUP 5), tumblers (TMB 2) and other vessel types as well.
A large number of MM straight-sided cups have painted bands around the middle of the vessel. This is the location that is later emphasized with repoussé mid-ribs, a feature that is clearly visible on extant metal straight-sided cups from the Shaft Graves at Mycenae (e.g., Davis 1977, figs. 102, 108, 110, 112, and 136). Gold and silver straight-sided cups (with the exception of Vapheio cups, some of which seemed to have a double lining or thick walls) were generally made from thin metal plate. The stress on the thin plate, especially from the pull of the riveted handle while handling, may have occasioned the metalsmith to reinforce the straight-sided cup with a band or mid-rib at the weakest point of the vessel. Of course, the same kind of stress is not applicable to ceramic straight-sided cups, but the band seems to have been faithfully copied anyway. At times, the band was replicated by extra pieces of clay on the wall of the cup (Davis 1977:132), but, mainly, it was reproduced in paint.

The same bands that appear on certain straight-sided cups also appear on some bridge-spouted jars. Given the large size of the bridge-spouted jars, it is possible that metal bands could have been applied to these vessels at the joins between plates, comparable to the situation of the larger bronze jars and jugs with added bands. However, one gets the sense that the added metal bands on the bridge-spouted jars were mainly applied for decorative reasons, in order to create a matching drinking set with the cups (see 6.III.1 Ceramic Vessel Sets).

The types of bands varied, but the repetition of certain motifs on straight-sided cups and bridge-spouted jars allows for the identification of perhaps a few favorite band types.

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13 This painted band begins in MM IA, when the straight-sided cup first appears (see Momigliano 1991). The white band on a dark ground was a popular design in this period, but considering that the painted band around the middle of the cup continues down into the LM period, perhaps the band around the MM IA cup was meaningful.
4.IV.1 BANDS WITH DOTS

A certain number of vessels—mainly straight-sided cups and bridge-spouted jars—were decorated with orange bands superimposed with red dots.\(^{14}\) This type of band occurs on a straight-sided cup (MacGillivray 1998, pls. 30:995 and 148:995 [22:1]) and a bridge-spouted jar (MacGillivray 1998, pls. 28:947 and 139:947 [22:2]) from Knossos with the same “semi-crescent” decoration; a straight-sided cup (MacGillivray 1998, pls. 30:997 and 148:997 [22:3]) and bridge-spouted jar (MacGillivray 1998, pl. 15:383 and 76:383 [22:4]) with bands and spirals from Knossos; a straight-sided cup (MacGillivray 1998, pls. 10:325 and 72:325 [22:5]), bridge-spouted jar (MacGillivray 1998, pls. 28:931 and 136:931 [22:6]), and semi-globular cup from Knossos (MacGillivray 1998, pl. 14:372 [22:7]) with foliate band decoration from Knossos; and a straight-sided cup from Phaistos with band and ivy motif (Levi 1976, pl. LIVc [22:8]). The color of the bands (orange with red dots) is reminiscent of the torus ring with superimposed clay rivets on the jug with “coffee bean” shapes (JUG 5; Levi 1976, pl. XLIVa [22:9]), the rhyton with cut-out petals (RHY 3; Levi 1976, pl. XLIVb [22:10]), and the stand with appliqué flowers (STD 1; Levi 1976, pl. XXVIIa [22:11]). On the jug, the torus ring is painted orange and the clay rivets red, which have been rendered as red dots on the other two vessels. The use of orange and red for torus rings recalls the Minoan practice of using copper reinforcements on precious metal vessels for strength and economy, including the use of copper for the torus molding on the silver ewer from Shaft Grave V (Karo 1930, pl. CXXXXIV; also Davis 1977:149–115, no. 43, fig. 120; list on p. 337 of use of copper reinforcements). Just like the use of copper for this ewer, orange bands with red dots on the ceramic straight-sided cups may

\(^{14}\) Various metallic techniques made use of the decorative dot or circle. In addition to the added ornamental metal band, certain metal vessels were adorned with inlaid strips, including thin strips of gold and rows of cut-out dots. These differ from the added bands in being embedded into the surface of the vessel, as opposed to being superimposed upon the surface of the object. However, as it is difficult at times to differentiate between an inlaid strip of dots, repoussé or impressed dots, or even strips with embossed dots, all these techniques are included here under added bands with dots.
also be an allusion to the use of a copper-reinforcing bands around the mid-point of the vessels. If the straight-sided cups were made in silver or gold, the copper band would provide a nice color contrast with the rest of the vessel.\textsuperscript{15} The allusion of the red dots may suggest copper rivets or perhaps another material (bronze?). Rivets were also sometimes gilded or silver-plated (Davis 1977:341–344); thus, perhaps the white dots on the orange band on two unique vessels, a straight-sided cup with crinkly rim (SS CUP 3; Levi 1976, pl. 123f [22:12]) and a shallow bowl (BWL 5), also with crinkly rim (MacGillivray 1998, pls. 1:50, 32:50, and 37:50 [22:13]), allude to this practice of contrasting the rivet head with the band color. Alternatively, they may just be variations on a theme.

Two tumblers with vertical bands and dots may suggest that these vessel types were provisioned with strengthening bands as well (Levi 1976, pl. LVIA [22:14]; Mackenzie 1903, pl. IV:5 [22:15]). The band on one tumbler is orange with red linked dots. The other is painted in orange and white with dark and white dots. Although the bands do not conform exactly to the ones on the straight-sided cups, one can readily imagine how a series of vertical bands around a metal tumbler of this sort would be helpful in keeping the shape of the vessel and strengthening the splayed walls. Vessels with dotted bands were found throughout the Middle Minoan period, beginning in MM IB.

Linked Dots

Another set of vessels decorated in dots display a slight variation in the type of band with dots. In this case, rather than the dots being enclosed within the framework of the band, the thin orange band runs through and over the dots. The linked-dot type of band appears

\textsuperscript{15} A number of ceramic vessels were also adorned with just an orange band. These include a set of straight-sided cups from Phaistos (Levi 1976, pls. 128g, 129n, 179l, and 209b), as well as Knossos (MacGillivray 1998, pls. 11:333 and 73:333, pls. 10:311 and 62:311, and 72:311). These may an alternate version of the orange band with red dots.
on two carinated cups from Phaistos (Levi 1976, pl. LIIa [23:1]; pl. 132k [23:2]), three straight-sided cups from Phaistos (Pernier 1935, pl. XXb [23:3]; Levi 1976, pl. 128o, 126d [23:4]), two semi-globular cups from Knossos (MacGillivray 1998, pl. 5:126 and 44:126 [23:5]; pl. 14:373 [23:6]), and, perhaps, an ornate cylindrical spouted jar from Phaistos (Levi 1976, pl. XLIIa [23:7]), among others. On this latter vessel, a thick orange band (outlined in fine white dots) runs around the mid-point of the body. If the metallic antecedent of this ceramic piece were in fact made in two pieces (see JAR 1) then the copper band would have been useful to cover the join at the mid-point of the body. The orange band runs through circles formed by the “negative space” created from linked white triangle shapes. Bands above and below the main design on the body consist of repoussé dots and “leaf”/rivet patterns. If this jar were in fact modeled on a metallic example, one wonders whether the main decorative design was not gilding or inlay work (see under 4.VII Inlay and Enameling). If the linked dot motif does in fact signify a true representation of a metal band, one could easily conceive of the large white dots as cut-out circles and of the orange line running over the circles as a thin copper wire keeping the cut-outs in place. Rows of gold cut-out circles were used on the electrum goblet from Shaft Grave IV at Mycenae (Karo 1930, pls. CXII–CXIII; also Davis 1977:208–220, no. 83, figs. 172–173; Xenaki-Sakellariou and Chatziliou 1989:29, no. 18, pl. XII [23:8]). In this case, the inlaid dots were held in place by a substance resembling niello (Davis 1977:208–220). In other cases, metal cut-outs on vessels and weapons were inserted into the surface of the metal by cold-hammering the cut-out shape into an already incised cavity in the shape of the inlay (Xenaki-Sakellariou and Chatziliou 1989:11, variante A, Damascene work). At times, small rivets were used to hold the cut-out in place (1989:11, 16 Sherds with the linked dot pattern include MacGillivray 1998, pls. 52–56:203, 211, 213–214. These are similar in style to sherds with bands and superimposed dots (MacGillivray 1998, pls. 52:204 and 219, 56:204 and 219, and 54:185). These are said to come from a carinated cup, a cylindrical spouted jar, two rounded bridge-spouted jars. More sherds were reported by Mackenzie (1906, pl. VIII), including one (no. 17) with both the linked dot motif and what appears to be embossed strips together on the same sherd.
variante B). Cold-hammering (and the use of rivets) was used on some of the earliest daggers and vessels in the Shaft Graves. Therefore, during the Middle Minoan period—in a period in which inlay was seemingly first developed and practiced—it is conceivable that metalsmiths, still honing their skills, may have wanted extra security in the form of copper bands to keep the metal cut-outs from popping off the vessel (see more under 4.VII Inlay and Enameling). Vessels with the linked dot motif were found in MM IB, MM IIA, and MM II contexts. The lone exception is semi-globular cup that was found in the “West Polychrome Deposits” at Knossos (MacGillivray 1998, pl. 14:373 [23:6]), a context mainly dated to MM IIB–IIIA. Given the range of dates of the other vessels with the linked dot motif, perhaps this particular cup should be stylistically dated to an earlier period.

Embossed Strips

A certain number of ceramic vessels are decorated in a way to suggest that they are imitating raised bosses. In metal, two decorative techniques were capable of producing the three-dimensional effect of raised bosses: either by the addition of metal strips embedded with embossed studs, such as seen on the silver ewer from Zakros (Platon 1971, fig. on p. 87; also Davis 1977:102–105, no. 13, figs. 76–77 [21:8]), or through repoussé work. Two extant metal vessels show the use of embossed circles as decoration. One gold goblet from Shaft Grave IV at Mycenae (Karo 1930, pl. CXI, fig. 22 restoration; also Davis 1977:204–208, no. 82, figs. 169–171 [23:9]) has a row of embossed circles around the base of its pedestal. Incidentally, traces of a blue substance (perhaps a paste of some kind) was wedged in between the bosses, which seems analogous to the row of cut-out gold circles embedded in “niello” on the goblet with inlaid flowerpots from the same grave (Karo 1930, pls. CXII–CXIII; also Davis 1977:208–220, no. 83, figs. 172–173 [23:8]). The effect of circles arranged in a row is the same. Another extant metal vessel with repoussé decoration is the silver goblet from
Midea with bossed circles around the rim (Persson 1931, fig. 30, pl. XVII:1; also Davis 1977:282–283, no. 118, fig. 229 [23:10]). The location of the frieze of repoussé circles around the rim and the size of the circles are reminiscent of the painted decoration on some ceramic vessels.\textsuperscript{17} In ceramic, the three-dimensional effect of raised bosses was rendered as single rows of repoussé dots. Vessels of this kind include a semi-globular cup from Knossos (MacGillivray 1998, pls. 19:430–432 and 82:430–432 [23:11–13], fragments of cups of the same type with raised circles, Pernier 1935, fig. 231 center; Levi 1965–1966, fig. 67 bottom, second row, second from left), and a bridge-spouted jar with repoussé or stamped circles around the shoulder, from Phaistos (Levi 1965–1966, fig. 68a top left [23:14]).\textsuperscript{18} The embossed circles on the cup from Knossos [23:11–13] are outlined in white paint, just like the dots on two straight-sided cups (MacGillivray 1998, pl. 10:314 [24:1], pls. 18:427 and 69:427 [24:2]) and a bridge-spouted jar with painted double circles (MacGillivray 1998, pls. 15:379, 72:379, and 75:379 [24:3]). The repoussé circles on the bridge-spouted jars seem to only run around the shoulder of the vessel, as they are on the extant bronze jars with added metal strips (see [21:9–19]).

There is still another group of vessels that display rows of dots, but may not be representing repoussé work. These are different than the Linked Dot bands mentioned above in that they are not associated with an orange band. The dots on these vessels are either dark dots on a white ground (straight-sided cups: Pernier 1935, figs. 110a [24:4] and fig. 237b [24:5]; Levi 1976, pl. 127a [24:6]; semi-globular cup: MacGillivray 1998, pl. 14:372 [24:7]; representing silver bands?) or rows of white dots incorporated into a ceramic design (straight-sided cups: MacGillivray 1998, pls. 10:323, 72:323 [24:8],

\textsuperscript{17} As mentioned above, it is difficult to differentiate between raised studs and repoussé circles on painted ceramics, and, so, the examples of repoussé circles are included here.

\textsuperscript{18} The same row of raised circles is seen on the shoulder of a faience ewer found in the “Treasury Room” at Knossos (Evans 1921, fig. 540). This vessel is later than the MM period, but the ewer shape is a very old one that seems to have retained many of its earlier and metallicizing details (see 6.III.2 Function of Metal Vessels).
11:326 and 72:326 [24:9]; semi-globular cups: Pernier 1935, fig. 110b–c [24:10]; Levi 1976, pls. 124h [24:11], 125i [17:4], and 125k [17:5]; MacGillivray 1998, pl. 9:285 [17:2]; bridge-spouted jars: Mackenzie 1903, fig. 5 [24:12]; MacGillivray 1998, pls. 15:382 and 76:382 [24:13]; tall jar: Levi 1976, pl. LVIIIc). In the case of the semi-globular cups, the row of dots may be alluding to the row of indented dots as seen on a silver semi-globular bowl from Tôd (Bisson de la Roque 1950, pl. XCIII:70630 [15:9]; Warren and Hankey 1989, pl. 5C–D), but, in general, it is perhaps safe to say that the row of dot motif, once incorporated into the ceramic repertoire (either through the imitation of rivets, indents, repoussé circles, or cut-out shapes), becomes an established motif for certain MM pottery groups. In the derived stage, the motif is “mixed and matched” with other band motifs to produce hybrid decorative designs. Thus, even though one can trace back the band and dot motif to a possible metallic feature, there is no guarantee that the painted row of dots on any particular vessel represents a direct copy of an individual metal vessel. Nevertheless, it does appear that the row of dots was reserved for those vessels—especially straight-sided cups and bridge-spouted jars—that once may have been adorned with an added strip of metal with some form of decorative stud, rivet, or repoussé circle. Although it had still reached the derived stage at a certain point, the row of dots motif may have signaled “metalness” on these vessels. To further support the notion that the painted row of dots (without association with the orange band) is derivative, most of the vessels with this decoration were found in the “West Polychrome Deposit” at Knossos, which date them to MM IIB–IIIA. The examples of vessels with repoussé decoration are also either MM IIB–IIIA or MM II (Fase Ib) in date.

4.IV.2 BANDS WITH FLUTING

In addition to metal strips with added rivets or bosses, it seems that some vessels may have also been ornamented with fluted metal strips. One added band on the shoulder of a LM IIIA bronze jar from Sellopoulo, near Knossos (Matthäus 1980:189, pl. 33:282
demonstrates the type of band that may have been imitated in pottery. The band, made from copper or bronze, has two fine rows of slanted fluting. The pattern created by the slanted fluting on the metal strip is very similar to the bands seen on a number of ceramic straight-sided cups (MacGillivray 1998, pls. 11:330 and 334 and 73:330 and 334), ovoid jars (Levi 1976, pl. XLa and 138b), and a bridge-spouted jar (Levi 1976, pl XXXIIIb), even down to the slight S-shape of the space between the flutes. On these particular ceramic examples, the band is a thick orange or red with white slanting strokes painted atop. Just like the orange bands with red dots (see the Linked Dot band, above), perhaps the red/orange color of the band reflects the use of copper for strengthening/decorative details on Minoan metal vessels (Davis 1977:337). Again, the orange bands on the jars are located on the shoulder (and in one case, also at the mid-section) of bridge-spouted jars and at the mid-point on straight-sided cups. Certain other vessels have repoussé sections, which are painted with vertical strokes. This includes a demitasse (MacGillivray 1998, pl. 5:123), which has a band around the neck, and two straight-sided cups with painted fluting designs around the repoussé mid-rib (Pernier 1935, fig. 136; Levi 1957–1958, fig. 153b). The slightly repoussé bands around the mid-section suggests an added feature on the original. One band has painted slanted flutes, whereas, the other has vertical fluting. The same slanted band design is replicated on another straight-sided cup (Pernier 1935, fig. 135), but, this time, the slanted bands occur around the rim and base of the cup. On the main body of the vessel are slanted crescent shapes, a design that recalls torsional fluting on other vessels (see 4.1.1 Torsional flutes). If this cup were imitating a metal prototype, then the original would have had fluting around the main body and two added strips to frame the design. The former two cups seem to show the opposite, fluting above and below the added strip in the middle. These three cups appear to compliment each other. The same mid-body crescent motifs appear on another straight-sided cup, this one from Knossos (MacGillivray 1998, pls. 7:229 and 57:229). The design is contained within two
orange and white horizontal lines. Perhaps the crescent design represents a wide swath of repoussé torsional fluting carried out on the surface of the vessel itself, or perhaps they too represent an ornamental band with wide torsional flutes added to the vessel. The same uncertainty exists for a carinated cup from Phaistos (Levi 1976, pl. 131 [25:12]). At the mid-point of the vessel, above the carination, the cup has a band of tightly spaced, painted vertical squiggly lines, which are highly evocative of vertical fluting. The same design is incised/stamped onto a number of highly lustrous sherds of “Egg-shell” Ware, which suggests the emulation of a three-dimensional effect (Levi 1965–1966, fig. 67 third row, left; 1976, pl. LXIIb, f, i, and k, pl. LXIIIIF). A few incised designs appear to be arranged in bands, but it is still difficult to discern whether the effect of the torsional flutes, squiggly lines, or incised lines, as seen on these ceramic vessels are meant to represent added metal bands with decoration or simple repoussé on the body of the vessel itself. With the exception of the demitasse [25:7] dating to MM IB (“Early Chamber beneath the West Court”), the rest of the vessels with bands of fluting are dated to either MM II (Fase Ib) or MM IIIB–IIIA (“West Polychrome Deposit”).

Chevrons

The chevron design seems to be related to slanted fluting; it basically consists of two rows of fluting, but facing each other in mirrored directions. That the chevron design was originally a three-dimensional feature is suggested by the bridge-spouted jar (BSJ 5) with repoussé chevrons (Levi 1976, pl. XXXIIIId [25:13]) and, perhaps, by the teapot with exaggerated spout (TP 3; Banti 1939–1940, fig. 8 [25:14]). The repoussé and incised chevrons are arranged as bands around the shoulder of the vessels, the same location that

19 The bronze ewer from Sellopoulo (Matthäus 1980, pl. 33:282 [25:1] has an added metal strip with a double row of fluting. If the flutes on each row were arranged to mirror each other, a chevron pattern would occur.

20 It is also conceivable that the incisions on this teapot may have represented chasing work (see below, under 4.V Chasing).

Along with the row of dots pattern, the chevron design and the slanted flute design joins the foliate band (see 4.IV.4 Bands with Foliate Designs) and the row of spirals (4.VI.2 Repoussé Spirals) as possible “metallic” elements that are “mixed and matched” to produce variations on a theme for many straight-sided cups and bridge-spouted jars during the derivation stage of imitation (see also SS CUP 5, SS CUP 6). The diluted fluting motif is especially apparent on straight-sided cups dating to MM III, which is now applied haphazardly around the rim, filled in with white, or crossed to produce a “net” pattern21 (e.g., Levi 1976, pl. 208). The vessels with repoussé chevron bands are dated to MM IIA (Fase Ia/Ib iniziale) or MM II (Fase Ib). The painted chevron band occurs on vessels dating to MM II (Fase Ib), MM IIB–IIIA (“West Polychrome Deposits”), and into MM IIIA.

4.IV.3 BANDS WITH S-SHAPE

On certain bands with fluting (see above), the slanted lines on the fluted bands take on a slight sinuous shape (S-shape). This is especially apparent on a bridge-spouted jar and a couple of ovoid jars with orange bands from Phaistos (Levi 1976, pls. XXXIIIb [25:6], XLa [25:4], and 138b [25:5]). One wonders whether this motif was not further derived and distilled to its essence as a simple elongated S-shape, as seen, for example on a bridge-

21 Although, it is also possible that the “net” pattern may have been inspired by a metallic cross-hatched surface decoration, as seen for example on the rim of a large bronze basin (Matthäus 1980, pl. 40:329) and the rim of a bronze lamp (Matthäus 1980, pl. 54:464).
spouted jar and a semi-globular cup (Evans 1921:241, pl. IIb [26:1]) from Knossos and a bridge-spouted jar from Phaistos (Levi 1976, pls. XXXVIIIb [26:2]). Alternatively, the S-shape may be derivative of a simple spiral pattern. On the Minoan-made electrum goblet from Shaft Grave IV at Mycenae, one of the inlaid flowerbeds was adorned with a row of unconnected spirals (Xenaki-Sakellariou and Chatziliou 1989, pl. XII:4 [26:3]). The motif was engraved within the gold cut-out shape and filled in with a “niello-like” substance, highlighting the decoration of the spirals. The S-shape motif is very similar to the painted row of unconnected spirals seen on two carinated cups from Knossos (Mackenzie 1903, pl. VI:4 [26:4]; also 1906, pl. VII:20, bottom of vessel [26:5]) and one carinated cup from Phaistos (Levi 1976, pl. 133q [26:6]). The S-shape motif always occurs in rows in locations where metal and ceramic bands would also occur. On two vessels, the semi-globular cup [26:1] and the bridge-spouted jar [26:2], the S-shape motifs are painted on top of an orange or white strip, just as on the bands with linked dots (4.IV.1 Bands with Dots). If these extended S-shapes in ceramic are imitating metal, then, perhaps, these bands were made from copper or silver and then engraved with the spiral pattern, as was seen on the electrum goblet [26:3]. A lustrous “Egg-shell” sherd with a stamped S-pattern hints at the “engraved” effect of the motif in ceramic (Evans 1921, fig. 182b [26:7]). This sherd, as well as the semi-globular cup with bands with S-shapes ([26:1]) were found in the “Royal Pottery Stores” at Knossos, dating to MM IB–IIA. The other vessels with S-shaped motifs are potentially as early or from undifferentiated MM II (Fase Ib) contexts.

4.IV.4 BANDS WITH FOLIATE DESIGNS

Evans (1921:269–270, fig. 200) postulated that the origin of the floral band in the MM period can be traced back to a chain of joined, concave-sided triangles, which he calls an “outgrowth of a simple flower chain,” as seen on later LM jewelry, but “which no doubt, derived from an earlier tradition” (1921:269, figure on same page that shows lotus flowers chained side by side). To explain the occurrence of these “flower chains” on
pottery, he states that it is “by no means improbable that the appearance of this motive on pottery was due to the actual overlaying of vessels with flower chains cut out of gold foil” (1921:269). To support this contention, he shows the progression of the simple triangles (presumably imitating the lotus flower chain) on a vase dated to MM IA down to the more naturalistic foliate design on MM III pottery (“leafy branches”) (1921:270, fig. 200 [26:8–12]). Beyond MM IA, the earliest representations of the dentate/foliate bands are, in fact, “linked triangles” or “triangular branches,” as found on tumblers and straight-sided cups dating to MM IB to MM IIA. Evans may be correct in judging that these motifs were possibly metallic in origin. All the early examples (MM IB or MM IIA) (Evans 1921:270, fig. 200b and c [26:9 and 10]; tumblers: Levi 1976, pl. LVIa [27:1]; Pernier 1935, pl. XXIIc [27:2]; tumbler or straight-sided cup: MacGillivray 1998, pls. 7:230 and 37:230 [27:3]; and bridge-spouted jars: Levi 1976, pl. 199a; MacGillivray 1998, pls. 28:931 and 136:931 [27:4]) have triangular motifs with either a red bar or red dots running through the motif.22 If, in fact, as Evans suggested, the “flower chains” were made from gold foil, a wire (band) or rivets (dots) made from another precious material (for contrast) could have helped to affix these elements to the wall of the vessel (similar in concept to the cut-out circles affixed by a copper wire mentioned above under 4.IV.1 Bands with Dots). This is, in fact, what was practiced on a few of the metal daggers from the Shaft Graves at Mycenae. The gold cut-outs were apparently affixed with the help of small rivets to the blade of the dagger (Xenaki-Sakellariou and Chatziliou 1989:12). See also under 4.VII Inlay and Enameling for more on this.

Only on later cups (MM IIB to MM IIIA) does the “triangular branch” shape change into the “leafy” foliate band [26:11–12], as seen on many straight-sided cups (MacGillivray 1998, pl. 72:312 [27:5], 314 [27:6], 320 [27:7], 323 [27:8], and 325), bridge-

22 The tumbler from Phaistos (Levi 1976, pl. LVIa [27:1]) doesn’t have a bar or dots in the center of the floral motif, but a red bar runs alongside it. The red bar can be interpreted as a copper or gold added band.
spouted jars (Mackenzie 1903, fig. 5 [27:9]; MacGillivray 1998, pl. 15:379 [27:10] and 382 [27:11]), and the occasional other type of vessel (semi-globular cup: MacGillivray 1998, pl. 14:372 [27:12]). The foliate band, now removed from its original metallic origins, is probably influenced by more naturalistic representations of foliage in Minoan art at this time (Evans 1921:269). Nevertheless, the foliate band, along with the other “metallic” bands that have now morphed into their own respective ceramic motifs, is still utilized on certain vessel shapes (SS CUPs and BSJs mainly) that once had the more accurate “metallic” motifs.

4.V CHASING

Chasing and repoussé work, used in conjunction, are used to create designs in low relief in metal. Hammering a raised design from the reverse side of the metal plate is achieved in repoussé, while refining the work from the front of the plate by sinking the metal is called chasing. Chasing is most often used today to finish off the repoussé design, but it can also be used on its own to create grooved designs within malleable metal plate.

Chasing is a less sophisticated method of adding relief to metal vessels, and it appears as if this technique was used as the preferred means of metal decoration earlier than repoussé. Most, if not all, of the extant metal vessels with added surface detail from the EBA (in Anatolia and the Aegean) were mainly decorated with chasing. Repoussé, if it was used, was employed in a subsidiary role to refine the chasing work, a role that becomes reversed when repoussé work gains in prominence. Chasing work can be seen, for example, on a number of EB II/III gold vessels from Alaca Höyük, such as, for example, on chalice stems with geometric patterns (Koşay 1951, pl. 178; also Toker 1992:185, no. 11 [28:1], 186, no. 15; and Reeves 2003, cat. nos. 10, 11, 13), a small fluted necked jar (Koşay 1951, pl. 176; also Toker 1992:189, no. 24 [28:5]; and Reeves 2003, cat. no. 28), and especially small beak-spouted jugs in gold and copper with herringbone,
chevrons, and geometric lines (Koşay 1951, pls. 126, 132, 179; also Toker 1992:183 nos. 2 [28:4], 190, no. 1 [28:2]; and Reeves 2003, cat. nos. 34, 36, 37, 55). Chasing work is not confined to vessels from Alaca Höyük, but is also seen on vessels from other sites as well, such as Mahmatlar (a beak-spouted jug with geometric lines and swastikas: Toker 1992:183, no. 3 [28:3]; also Reeves 2003, cat. no. 101), perhaps Horoztepe (a handled vessel with a torsional herringbone/chevron pattern: Özguç 1964:2, fig. 1) or the Horoztepe region (a copper beak-spouted jug with circles: Tezcan 1960:13–28, pl. 15). The designs, with the exception of a jug with concentric circles, are all linear, simple, and consisting of a series of parallel grooves lined up in different directions, either in zigzags, chevrons, tight flutes, triangles, etc.

From the tight flutes and parallel lines of the EBA vessels, there is not much of a leap to the wider flutes that are seen on MBA vessels, such as, for example, on the Tôd bowls (Bisson de la Roque 1950; Bisson de la Roque et al. 1953, e.g [14:4–12, 15:1–9]). On these vessels, it appears as if chasing is still being used—the flutes are pushed inwards and rounded off from the outside—but repoussé is now becoming a more prominent technique in the definition of the spines on the fluted bowls or of the spirals on the two bowls with running spiraliform designs, for example (Bisson de la Roque 1950, pl. XVIII:70632, 70637 [28:6]). Repoussé work only seems to gain in dominance from this period onwards. Late Bronze Age vessels are almost all achieved mainly through repoussé with chasing as a secondary technique. 23

Among the ceramic emulations of metal vessels, there are a group of vessels that Evans (1921:242) calls “Stamped Ware” and MacGillivray (1998:57) calls “Stamped and Impressed Ware.” These vessels are usually of very fine fabric (“Egg-shell” Ware) and

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23 The exception to this are Aegean vessels that, for other reasons, were deemed Mycenaean-made by Davis (1977). The vessels with chasing work was less sophisticated and cruder in style. If the Mycenaeans were new to metal vessel working, the choice of simpler chasing work may explain their preference for this technique.
have a very lustrous “metallic” quality to them. In fact, some of the vessels “present a lustre hardly distinguishable from that of old plate...” (Evans 1921:242). It is clear from the impressed designs on these vessels that there was an attempt by the potter to produce a three-dimensional effect on the surface of the vessel. Even so, it is also clear that he was not attempting to reproduce repoussé work, as other ceramic examples clearly demonstrate this technique in ceramic. Rather, the emphasis on these vessel is on impressing design into the clay—just like chasing. And just like examples of metal vessels with chasing from the late EBA into the early MBA, the impressed designs on the ceramic examples are simple and, in many cases, linear in shape.

At Knossos, stamped decoration occurs on semi-globular cups in “Egg-shell” Ware and on a carinated cup (Evans 1921:242, fig. 182a [28:8], 182b [28:9]; Mackenzie 1903, pl. VI:3; MacGillivray 1998, pls. 60:233). At Phaistos, stamped vessels in fine wares include carinated cups (Levi 1976, pl. 133e [28:10]), straight-sided cups (Levi 1976, pl. 128q), a semi-globular cup (Levi 1976, fig. 124a [28:7]), and fragments of other indistinguishable vessels (Pernier 1935, fig. 231, bottom right; Levi 1965–1966, fig. 67 bottom; Levi 1976, pl. LXII [28:11], LXIIIif). Although not made from egg-shell thin fabric, some bridge-spouted jars and teapots from Phaistos were also stamped, perhaps to complement the finely made drinking vessels (Levi 1965–1966, fig. 67 bottom, top row [28:14]; Levi and Carinci 1988, pl. 57b; Levi 1976, pl. 28k [28:13]; perhaps Banti 1939–1940, fig. 824 [28:12]). The overall designs that appear on these vessels consist of simple motifs. At times, the motifs are stamped into the clay while still wet and, at other times, the designs are incised into the clay, a method that “could be compared to the chasing technique used in finishing metal products” (MacGillivray 1998:57). The motifs include S-shapes, crescents, linear designs, chevrons, zig-zagged lines, rosettes, and tiny

24 The incised lines around the shoulder could also have been an allusion to a fluted ornamental band (see above, under 4.IV.2 Bands with Fluting).
sunbursts among others. The linear lines/chevrons on the teapot with exaggerated spout (e.g., Banti 1939–1940, fig. 8 [28:12]) and the lustrous semi-globular jar (Levi 1976, pl. 124a [28:7]), in particular, are similar in effect to the linear designs on some of the extant beaked-spouted jugs from Anatolia (e.g., Toker 1993, figs. 1–3 [28:2–4]). The other motifs, not found on any extant metal vessel, may have been local innovations.

The “Stamped and Impressed Ware” vessels are mainly dated to MM IIA (MacGillivray 1998:57), but there are indications that this practice may have begun in MM IB already (see examples found in the “Royal Pottery Stores” [MM IB–MM IIA] and on s teapot with impressed shoulder dating to Fase Ia or MM IB: Levi 1976, pl. 28k [28:13]). This is in contrast to the date of another group of vessels, labeled “Precision Stamped Ware” by MacGillivray (1998:57–58), which were mainly found in MM IIB–MM IIIA contexts. The decoration of these vessels also employs dies, but rather than being impressed into the wall of the vessel, the dies are pushed from within (on the reverse side) to create the motif, a technique that recalls repoussé (Evans 1921:242; MacGillivray 1998:57). The designs in low relief extend further out from the walls of the vessels, evoking the three-dimensionality of metal repoussé work. The designs, consisting of spirals, concentric circles, embossed circles, and shells, among others, are consistent with designs that appear on later metal vessels with repoussé, as well. For this reason, vessels with these types of motifs are thought to represent emulations of metal vessels with repoussé. As such, they are discussed below (4.VI Repoussé Work). The important thing to note about the “Precision Stamped Ware” vessels is that they appear to continue the tradition of using stamps on ceramic vessels already begun in the early half of the Middle Minoan period (MM IB to MM IIA). Although the motifs have changed, the technique has not changed overly much in MM IIB, except that the dies are now impressed into the reverse of the clay wall. This continuity between the two techniques is well-represented by a bridge-spouted jar from Phaistos, for example (Levi 1965–1966,
fig. 67 bottom, top row [28:14]). The jar is decorated with a series of stamped rosettes. In appearance, these rosettes are remarkably similar to the repoussé rosettes seen on a gold goblet from Shaft Grave IV at Mycenae, down to the size and some of the details (Karo 1930, pl. CXI, fig. 22; also Davis 1977:204–208, no. 82, figs. 169–171 [23:9]). The same motif on both vessels, one stamped and the other repoussé, suggests a continuity in concept.

The technique of decorating ceramic vessels with chased/repoussé designs seems to parallel the evolution of the use of chasing and repoussé in metal. At the beginning of the MBA period, chasing seems to have been the predominant decorative technique in metal. This is possibly reflected in the “chasing” (impression from the exterior) of certain ceramic vessels in the early half of the MM period (MM IIA). At some point, it must have occurred to metalworkers that the same dies that were impressed into the metal wall can also be used to create relief designs on the obverse face of a vessel. This may have been the first experiments with repoussé work. If the ceramic skeuomorphs are any gauge of when repoussé was first practiced, this technique was adopted at least by MM IIB. As no metal vessels with repoussé work (other than in fine-tuning fluting work) has been found around the Mediterranean before the end of MBA–LBA—and then, showing up in abundance in the Aegean—perhaps repoussé work was a technique that was perfected on Crete during the Middle Minoan period.25

4.VI REPOUSSÉ WORK

Repoussé is the opposite technique to chasing. It involves hammering a design into the reverse side of a metal plate to create patterns in three-dimensional relief on the obverse. This was a relatively common Minoan technique for ornamenting metal vessels in the

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25 Which does not exclude other potential schools of repoussé work in other parts of the Mediterranean basin. Just that the technique may have been locally developed independently in each region.
LM period. Repoussé motifs occurring on extant Aegean metal vessels include: spirals, arcades, spirals and arcades, loops, ivy, flowers, figure-of-eight shields, foliate bands (vertical and horizontal), whorl shells, triton shells, chevrons, axes, as well as figural scenes, such as the scenes with bulls on the gold straight-sided cups from Vapheio (Davis 1977, figs. 1–13 and 20–21), the underwater scene with octopi on a gold cup from Midea (Persson 1931:31, pls. IX–XI; also Davis 1977, fig. 224), and the lion hunt scene on a straight-sided cup from Mycenae (Mylonas 1972–1973, pl. 71a; also Davis 1977:136–137, no. 30, fig. 105). One also suspects that some stone rhyta with elaborate figural scenes may have been copying metal rhyta with repoussé scenes, as some of these stone rhyta were covered in gold leaf to give the appearance of metal (Warren 1969:174). Not only rhyta, but, in some case, the repoussé work on other metal vessels were also covered in gold leaf in order to provide color contrast with the rest of the vessel (e.g., silver ewer with gold overlay: Mylonas 1972–1973, pl. 16a and 16c; also Davis 1977:134, no. 29, figs. 106–107).

In the Middle Minoan period—if the ceramic skeuomorphs are any indication—it seems that repoussé work was also practiced, but that the motifs were relatively more simpler. Three repoussé motifs that appear on pottery forms include embossed dots/circles, spirals, and shells.

4.VI.1 REPOUSSÉ CIRCLES

Ceramic vessels with repoussé dots or circles seem to have been used to represent two separate metal techniques: the decoration of ornamental strips with studs or embossed circles, as well as the decoration of the body of the vessel itself with repoussé circles. The vessels with presumed ornamental bands include a bridge-spouted jar from Phaistos (Levi 1965–1966, fig. 68 top, top left [23:14]) and a semi-globular cup from Knossos.

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26 For motifs, see Davis 1977; Matthäus 1980.
The dots on these vessels are assumed to have belonged to ornamental bands as they occur in one row around the neck or shoulder and are outlined in either painted or grooved parallel lines. In appearance, the row of dots resemble the embossed strip around the rim of the silver goblet from Midea (Persson 1931, fig. 30, pl. XVII:1; also Davis 1977:282, no. 118, fig. 229 [23:10]), the studded bands on the silver ewer from Zakros (Platon 1971, fig. p. 87; also Davis 1977:102–105, no. 13, figs. 76–77 [21:8]), and the embossed foot of the gold goblet with rosettes from Shaft Grave IV (Karo 1930, pl. CXI, fig. 22; also Davis 1977:204–208, no. 82, figs. 169–171 [23:9]). The same row of embossed dots are found on other vessels, such as for example, around the neck of a faience ewer from the “Treasury Room” at Knossos (Evans 1928, fig. 540), a type of vessel with probable metallic antecedents as well.

The ceramic vessels with repoussé circles are slightly different from those above. The embossed circles are not arranged in one row, as if on a band. There are at least two rows of circles, and the circles on the second row are set at an angle to those above. The vessels are fragmentary; therefore, it is not possible to determine whether the whole vessel was adorned with the repoussé features, although it seems possible. The lack of border around the circles suggests that the body of the vessel itself (as opposed to an added band) was decorated in repoussé work—both in metal and ceramic. This type of ornamentation is seen on a bridge-spouted jar from Phaistos (Levi 1957–1958, fig. 119 top [29:2]) as well as fragments of one or more semi-globular cups from the same site (Levi 1965–1966, fig. 67 bottom, top row second from left [29:1]).

The vessels with the repoussé dots and circles around the body can not be dated closer to MM II (Fase Ib). In style, repoussé dots on these vessels are similar to the ones on the cup from Knossos with the presumed “embossed strip” of repoussé circles (MacGillivray 1998, pls. 19:430 and 82:430–432 [23:11–13]). This cup was found in the
“West Polychrome Deposit,” which is dated to MM IIB–MM IIIA. Perhaps, then, the vessels with repoussé circles around the whole body should also be seen as belonging to the second half of the Middle Minoan period. This would make the repoussé circle/dot one of the earlier repoussé motifs in the Minoan repertoire, along with the repoussé shell and spiral.

4.VI.2 REPOUSSÉ SPIRALS

By far, the most common repoussé motif on the extant metal vessels from the Aegean is the spiral. It is found on silver semi-globular cups from Crete and the mainland (Davis 1977:109–110, no. 19, figs. 87–88 [29:3]; 106, no. 15, figs. 79–80; 253–255, no. 101, figs. 198–199), gold and silver straight-sided cups from Mycenae (Davis 1977:141–142, no. 35, fig. 112 [29:4]; 156, no. 45, fig. 123; 251–253, nos. 99–100, figs. 196–197), two bronze rounded bowls from the mainland (Matthäus 1980:232–234, pls. 41:350 and 42:351), on the body of a gold ewer from Mycenae (Davis 1977:237–238, no. 91, fig. 186), on the shoulder of a number of silver and bronze tall jars from Crete and the Greek mainland (Matthäus 1980:179–180, pl. 32:259–261 [29:5]; pl. 74:1 [29:6]), on the rim of a bronze basin (Matthäus 1980:315, pl. 58:514 [29:7]) and bronze lekanai (Matthäus 1980:262, pl. 44:378) from Mycenae, as well as on the added metal strip on the shoulder of another bronze jar from Thera (Matthäus 1980:188, pl. 33:281 [29:8]). The spiral design on the two rounded bowls (Matthäus 1980:232–234, pls. 41:350 and 42:351) and the jar band (Matthäus 1980:188, pl. 33:281 [29:8]) are similar in that the spirals are small, tightly wound running motifs with a pendant arcade below it. The spirals resemble flattened whorl-shells, and it is possible that these spirals are related in concept the whorl-shell motif. A few of the straight-sided cups have a spiral net pattern, a local Mycenaean design that contrasts with Minoan spirals, which are “essentially designs of

27 Compare the flat spirals on one basin rim from Mycenae (Matthäus 1980:315, pl. 58:514) with the raised whorl-shells on the rim of another basin from the same site (Matthäus 1980:315, pl. 58:515).
Most extant metal vessels feature running spirals that are connected by a lower spiral tendril connecting to the top of the other spiral. In most of these cases, the main design is one broad row of spirals. The exception to this, besides the spirals on the rim of the lekanai, is the two rows of spirals on the shoulder of a bronze jar fragment from Shaft Grave V at Mycenae (Matthäus 1980, pl. 32:260 [29:9]). The two rows of spirals, unconnected to one another, are reminiscent of the decoration of spirals on two silver bowls from Byblos dating to a period contemporary with the Middle Minoan period (Montet 1928:191–193, pls. CXI:748, CXIII:749; Davis 1977, fig. 64 [29:10]). The decoration on the bronze jar and the bowls from Byblos are so alike, one wonders whether the jar—found in a context traditionally dated to MM III–LH I—should not be dated to an earlier period. The fact that only one fragment of the jar (the most ornate shoulder) was recovered in the grave may perhaps allude to the antiquity of the jar at the time of its deposit.

A number of ceramic vessels with repoussé spirals and concentric circles may be referencing the type of repoussé spirals seen on the bowl from Byblos [29:10] and the upper jar fragment from Mycenae [29:9]. The group of vessels includes semi-globular bowls (similar in shape and style to the Byblos bowl), straight-sided cups, and a couple of bridge-spouted jars. All of the vessels are included in MacGillivray’s “Precision Stamped Wares,” on which the spirals, “instead of being pushed into the wall of the vase,” are apparently “pushed from within (leaving a fingerprint) into a form” (1998:57–58). This is, in effect, the same technique as executing repoussé on metal vessels—by rendering the design from the inside of the vessel. On the bridge-spouted jar from Phaistos (Pernier 1935, pl. XXXV [29:11]), the vessel is adorned with two rows of tightly wound spirals that do not interconnect. The spiral design is implied by the trailing tendril at the bottom of the motif. When compared to this jar, the concentric circles on the other ceramic vessels evoke the same spiral effect, only, they seem to be simplified versions of the non-
connecting spirals. That the same effect is meant is further suggested by interchange of the stamped spiral motif for the stamped concentric circles on similar type vessels. Both repoussé designs (circles and spirals) occurs on two different bridge-spouted jars (Pernier 1935, pl. XXXV [29:11]; MacGillivray 1998, pl. 83:445), as well as on cups with very similar repoussé motifs (Pernier 1935, pl. XXIVa [29:12]; MacGillivray 1998:144, pls. 57:237 [29:13] and 83:436–443 [29:14–15]). The stamped designs are arranged in static rows, one on top of the other, just like on the metal vessels.

Another type of repoussé/stamped spiral occurs on a number of ceramic straight-sided cups (Levi 1961–1962a, fig. 78 top left [30:1]; MacGillivray 1998, pls. 19:434–435 and 82:434–435 [30:2–3]). This is the more usual singular band of large, interconnected spirals that is seen on many of the extant metal vessels and painted ceramic vessels of the Middle Minoan period. On one ceramic cup from Knossos (MacGillivray 1998, pls. 19:434 and 82:434 [30:2]) the spirals are outlined by two bands of chevron fluting. Bands of chevrons and bands of spirals are frequent motifs on straight-sided cups from the Middle Minaon period (see, e.g., [22:3, 25:2–3]). However, unlike all the other motifs that seem to be “mixed and matched” on these straight-sided cups, it is more likely that the spirals on these cups are alluding to repoussé work rather than added strips of metal with spiral designs. This suggestion is supported by the many examples of repoussé spirals on extant metal vessels, the use of repoussé to represent spirals on certain straight-sided cups, and the “free-form” painted spirals on ceramic vessels (i.e., they are not bound within vertical lines). The position of the spirals on the MM ceramic straight-sided cups falls either around the center of the vessel or above the mid-point/mid-rib/mid band. It is likely that metal vessels with both kinds of decoration (spirals above the band or around the middle of the cup) may have existed. However, as the mixing of motifs on these

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28 The cup from Phaistos with painted spirals was so like the stamped cups, it has been included here, even though it might be slightly later.
straight-sided cups seem to have reached a certain level of derivation, one should be cautioned in trying to identify one definite direct copy of a metal model (see more under SS CUP 5, SS CUP 6).

The “Precision Stamped Ware” vessels with repoussé spirals are dated to within MM IIB–MM IIIA. Most were found at Knossos in the “West Polychrome Deposits.” One unique pyxis (PYX 2) with repoussé spirals was found at Phaistos, however (Levi 1976, pl. 117g [30:4]). It was found in a context dated to MM II (Fase Iib). The pyxis was covered in a thick white slip—perhaps an allusion to silver.

Only those ceramic vessels with repoussé spirals or metal counterparts have been mentioned here. Painted spirals occur on many other types of ceramic vessels. These may be allusions to repoussé work, but since the spiral is a very common motif in many media, the direction of the influence of the spiral on some pottery forms cannot be discerned at this time. It is enough to say that one of those influences may have been repoussé work.

4.VI.3 REPOUSSÉ SHELLS

A number of ceramic vessels were adorned with repoussé shells. These include a straight-sided cup (Pernier 1935, pl. XXXb [30:5]) and an jar (Levi 1976, pl. 77a [30:6]) from Phaistos, a semi-globular cup (Evans 1935, fig. 84a [30:7]) from Knossos, and another possible semi-globular cup from Palaikastro (Evans 1935, fig. 85 [30:8]). Related to this class of vessels may be a straight-sided cup from Knossos with what appears to be repoussé “barnacles” (MacGillivray 1998, pl. 19:433 and 82:433 [30:9]). According to

29 MacGillivray (1998:57) states that this basin was found in a context dating to Fiandra’s period 3 (Fiandra 1961–1962; 1980), which would date the vessel to MM IIB.

30 There were perhaps more of these types of vessels. Evans mentions some fragments of vessels with decorative use of sea-shells in repoussé from the area of the Koulouras (1935:117).
Evans, the repoussé shell motif on the straight-sided cup from Phaistos [30:5] and the semi-globular cup from Knossos [30:7] are practically identical (1935:118). He surmises that the same die was used for impressing the shells on both vessels. It is also possible that an actual shell was used to impress both, which would have the effect of producing identical results. The shell motifs on the “Egg-shell” Ware cup from Palaikastro [30:8] are not exactly like the other two, but the overall decoration of the cup is very similar. In each case, the motif in question appears to be a modified version of a Pecten shell. Different varieties of this species of shell, naturally occurring on Cretan sea-shores, were incorporated into Minoan shrines, such is evinced, for example, by the collection of painted Pecten shells from the “Temple Repositories” at Knossos (Evans 1921:518–519, fig. 378). Thus, the Pecten shell had a special significance to the Minoans, which they incorporated into their metal and ceramic work.

Perhaps due to this special relationship between the Pecten shell and cultic practices, or even, just for the simple reason marine motifs were dear to the Minoans, ceramic Pecten shells occur in many media, including terracotta (Evans 1921, fig. 380), faience (Evans 1921, fig. 379), as well as metal. A metal Pecten shell (the same type on the ceramic cups) was affixed to the handles of a bronze jar from Zapher Papoura (Matthäus 1980:172, pl. 30:242 [30:10]) as well as a bronze jar from Palaikastro (Matthäus 1980:163, pl. 25:212 [30:11]). The bottom end of the handle of the jar from Zapher Papoura was even fashioned into a Pecten shell. These bronze vessels, however, are dated to the Late Minoan period.

These metal appliqués are reminiscent of the Pecten shell appliqués found on the rim of a “miniature bridge-spouted jar” from Knossos (Evans 1935:117, fig. 82 [30:12]),
on the rim of a ceramic basin\(^{31}\) found in the same deposit as the repoussé shell cup from Knossos (Evans 1935:120–121 and 126–128, pl. XXIXa \([30:13]\)) and on a faience basin from the “Temple Repositories” at Knossos (Evans 1921:498, fig. 356 \([30:15]\)), of which, it is said, appears to be “a substitute for [metal] plate” (Evans 1921:499). The ceramic and faience basins are two of many ceramic skeuomorphs of metal basins with added rims (see 3.II.3 Added Rims and BAS 1)—rims that seem to have incorporated marine motifs as decorative elements. Two slightly later metal basins were adorned with whorl shells (Matthäus 1980:211, pls. 40:327, 40:328), and certain ceramic basins (MM IIB–IIIA) were adorned with molded argonauts, flowers, and possibly triton shells\(^{32}\) (MacGillivray 1998:148, pls. 63:548–551 and 91:548–551 \([30:14]\)). Thus, although the Pecten shell was not exclusive to metalwork, it does seem probable that this motif could also have been employed on metal vessels as well.

The discovery of vessels with repoussé shells in the “West Polychrome Deposits” (MacGillivray 1998:33–34) and in “Kouloura 3” (Evans 1935:117–119), the use of “creamy-bordered” decoration on some basins with shells, and the use of the “Sunrise Style” (MacGillivray 1998:59) on one cup with repoussé shells all seem to indicate that the use of this shell feature should be dated to MM IIB. The jar with repoussé shells from Phaistos, which was found in a context dated to MM II (Levi 1976, pl. 77a \([30:6]\)), also likely dates to this period.

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\(^{31}\) Evans included this basin into his “Creamy-bordered class” (Evans 1935:120–121 and 126–128, pl. XXIX), a class that he considers “one branch of the many types of fine MM II pottery...that owed its origin to the attempt to imitate gold and silver vessels” (1935:127).

\(^{32}\) A fragment of a clay basin from Knossos displays a three-dimensional triton shell (Evans 1921:522–523, fig. 381), and a molded argonaut in the “creamy-bordered class” style, thought to be from a basin, was found in the same deposit as the basin and cup with repoussé Pecten shells (Evans 1935:128, fig. 97).
4.VII INLAY AND ENAMELING

In addition to repoussé work, inlay work in metal is one of the most common methods of adding decorative details to metal vessels. Minoan inlay work is known for the Late Bronze Age on metal swords, scabbards, and some metal vessels, but no extant metal vessel from the Middle Bronze Age with inlay work has yet been found to date. Analysis of the corpus of Middle Minoan pottery, however, suggests that inlay work may have practiced earlier in the Aegean.

Laffineur (1974; 1977) as well as Xenaki-Sakellariou and Chatziliou (1989) have analyzed much of the Shaft Grave and Greek mainland material that display signs of inlay work. According to the latter’s research, there were at least six different techniques for imbedding decorative metal cut-outs into metal plate (1989:11–12, variantes A–E). The most “primitive” technique (but certainly no less easier than the other techniques) involved incising the background metal plate into the shape of the desired motif and then cold-hammering the cut-out shape (usually in gold or silver) into the cavity reserved for the motif (1989:11, variante A, Damascene work). At times, small rivets were used to hold the cut-out in place (1989:11, variante B). Other techniques entailed the use of a niello-type substance. The substance was ground into powder and applied over the top of the cut-outs. The piece was then heated, whereupon, the “niello” would melt and fill the interstices in the design, affixing the decorative cut-outs to the object (1989:11, variantes C1–2). Either cold-hammering inlay or the combination of inlay and “niello” was used on metal vessels (1989:12, variante D). In the case of metal vessels, the “niello” was generally applied to each motif individually so that the powdered “niello” would not slip off the convex surface of the vessel. The “niello” could also be applied in liquid form.

Proper niello is a substance composed of three parts silver, one part copper, and a generous amount of sulfur. At times, lead can be added too (Davis 1977:213; Xenaki-Sakellariou and Chatziliou 1989:9). As the precise composition of the niello-type substance on the Mycenaean vessels is not known, it is mentioned here in quotation marks as “niello.”
(see, for example, Xenaki-Sakellariou and Chatziliou 1989:29, no. 18, goblet with inlaid flower beds).

The metal vessels that have been found with inlay and/or “niello” in the Aegean include various fragments of Vapheio-type straight-sided cups with bull’s heads and double axes (Midea: Xenaki-Sakellariou and Chatziliou 1989:30–32, no. 22a, pl. XIII:1–3 [31:1]; also Davis 1977:263–266, no. 109, figs. 210–213; probably from Midea: Xenaki-Sakellariou and Chatziliou 1989:31–32, no. 22b, pl. XIV:3–4 [31:2], also Davis 1977:118–123, no. 24, figs. 95–96); a Vapheio handle with flowers (Mycenae: Xenaki-Sakellariou and Chatziliou 1989:32, no. 23, pl. XVI:2 [31:3]; also Davis 1977:302–303, no. 132, fig. 245); two cups with inlaid male heads from Mycenae (Xenaki-Sakellariou and Chatziliou 1989:30, no. 19, pl. X:2 [31:4]; also Davis 1977:297–300, no. 130, fig. 243) and Pylos (Xenaki-Sakellariou and Chatziliou 1989:32, no. 25, pl. X:1; also Davis 1977:308–310, no. 136, fig. 251); a handle with inlaid nautili (Xenaki-Sakellariou and Chatziliou 1989:32, no. 24, pl. XVI:1 [31:5]; also Davis 1977:300–302, no. 131, fig. 244) and a fragment of a metal plate with “adder marks” (wings?) from Mycenae (Xenaki-Sakellariou and Chatziliou 1989:33, no. 27, pl. XVI:3); a rhyton in the shape of a figure-eight shield from Mycenae (Davis 1977:230–235, no. 88, figs. 181–183); a cup with wish-bone handles and inlaid bulls’ heads from Midea (Xenaki-Sakellariou and Chatziliou 1989:30–31, no. 20, pl. XI [31:6]; also Davis 1977:284–286, no. 120, fig. 231) that strongly resembles a similar cup from Enkomi in Cyprus (Xenaki-Sakellariou and Chatziliou 1989:30, no. 21, pl. X:3 [31:7]; also Davis 1977:314–316, no. 140, fig. 255); a fragment of a vessel with inlaid lilies and dots (Xenaki-Sakellariou and Chatziliou 1989:32–33, no. 26a, pl. XVI:4 [31:8]) and one with what appears to be dolphin cut-outs from Pylos (Xenaki-Sakellariou and Chatziliou 1989:33, no. 26b, pl. XVI:5); a goblet with three inlaid flower beds (Xenaki-Sakellariou and Chatziliou 1989:29, no. 18, pl. XII:1 [31:9]; also Davis 1977:208–220, no. 83, figs. 172–173); and a goblet with repoussé
flowers and, possibly, inlaid substances, from Mycenae (Davis 1977:204–208, no. 82, figs. 170–171). This is in addition to some loose gold cut-outs found at Vapheio (Xenaki-Sakellariou and Chatziliou 1989:29, no. 17b, pl. XIII:4, but said to be no. 3 on p. 29), which, although seemingly intended for an inlaid dagger, shows what inlaying pieces may have looked like before their use on metal vessels.

A number of these vessels were inlaid using the cold-hammering technique. These include the Vapheio cup from Midea [31:1], the fragment of a vessel with inlaid lilies and dots from Pylos [31:8], and the handle with inlaid nautili from Mycenae [31:5]. Only fragments of these vessels were found in their respective contexts—perhaps suggesting the vessels were already broken and old when deposited (pre–LH I). Of all the inlaid objects found on the Greek mainland, the earliest securely dated piece is a dagger from Mycenae (Grave Nu), which was inlaid in the cold-hammered technique with an electrum band running down the center of the blade (Xenaki-Sakellariou and Chatziliou 1989:14).

Other objects worked in Damascene (cold-hammered inlay) were found in “early contexts” (LH II) or ones that ranged in date from LH II–IIIA:1. The metal vessels with “niello” were first seen in Shaft Grave IV (MM III–LH I), and the technique continues down into LH IIIB (and beyond, presumably). While it does not seem possible to suggest a date when “niello” may have first been used (as there are no earlier examples of metal vessels with “niello” from Crete or Greece), it does seem that once this more sophisticated technique was habitually employed, it gained in popularity and replaced Damascene work as the favored method of imbedding cut-out metal motifs. This seems to imply that cold-hammering work began before the use of “niello” on metal vessels—perhaps even as early as the Middle Minoan period.

Objects in various different media were embellished with inlay cut-outs (or a type of paste), at least since the beginning of the Middle Minoan period. Various inlay pieces, made from shell and faience were found in the Vat Deposit at Knossos, a context ranging
in date from MM IA to early MM IIA\textsuperscript{34} (Evans 1921:169–170, fig. 120 [32:1]). The larger plaques of inlay (mostly white shell) seem to have surrounded a “medallion with quatrefoils that may have been filled with some other substance” (Evans 1921:170). Two of the inlays (or more?) also appeared to be the petals of a rosette or flower. Evans wonders whether the inlays belonged to a gaming board like the one found in the northeast quarter of the palace (but MM IIIB in date\textsuperscript{35}). This so-called “Royal Draught-board” was composed of ivory, rock crystal, gold and silver plate, and a blue paste (Evans 1921:387, 471–477 col. pl. V, figs. 338–340 [32:2]). The pattern consisted of four large rosette medallions at the top, ten smaller medallions near the bottom, horizontal bars in between, and a panel of small rosettes around the exterior. The ivory material formed the “cloisons” into which the rock crystal inlays were inserted. Much of the ivory pieces were covered in thin gold plate. The rock crystal inlays were backed by silver plate alone or by a “cobalt paste formed of pounded [blue-green] kyanos” (Evans 1921:472), which was inserted directly into the silver backing. Similar material found in the “West Temple Repository” (crystal petals, crystal disk with silver backing, gold leaf, faience inlays) allowed for the reconstruction of another gaming board, this one adorned with large rosette medallions made from rock crystal and faience (Evans 1921:470–472 and 480–482, fig. 337, reconstruction fig. 344 [32:3]). In style, the rosettes are similar to other inlaid features of this kind, including faience rosettes on an ivory box lid from Tylissos (Evans 1921:482, fig. 345 [32:4]; also, Hatzidakis 1912:223–224, fig. 32), a Minoan gaming board with inlaid faience rosettes found in Shaft Grave IV at Mycenae (Evans 1921:482–483, fig. 346 [32:5]; also Karo 1930, pl. CLII:555–556, and p. 244 for the Minoan origin of the faience objects), and the inlaid silver rosette on the base of the

\textsuperscript{34} Some of the pottery and the objects within the Deposit seem to be EM III–MM IA in appearance (see Evans 1921:166–167, figs. 117–119), but it is possible that the vat was not interred until MM IB or early MM IIA (Panagiotaki 1998a:184.) Betancourt (1985:95) places the Vat Deposit in MM IB.

\textsuperscript{35} Evans (1921:472) states that the worn state of the gold plating indicates that the gaming board was probably “for many years in use.”
Vapheio cup from Midea (Davis 1977, fig. 97 [31:2 right]). The similarity between gaming board rosettes and the metal one indicates that inlay work seemed to be interchangeable, regardless of the medium. The likeness between them may stem from the fact that all these objects were meant to be inlaid (Davis 1977:119). Considering all the different media that were inlaid over the course of the MM period, the evidence that inlay work on known metal vessels closely resemble the cut-out designs on other objects with inlay work, and the fact that inlay work (on gaming boards and other objects) involved imbedding inlay pieces into silver and gold or being decorated with these metals, it is not unreasonable to suggest that the Minoans also may have decorated their metal vessels with inlay work in the MM period. After all, the technique of cold-hammering in metal was not far removed from the technique of embedding ivory, stone, or faience into another material.

Although more difficult to discern ceramic copies of metal vessels with inlay than, say, repoussé with its three-dimensional quality, a number of ceramic vessels seem to display certain features that exhibit qualities in their design that conform to the technique of inlaying. One of the characteristics of the extant inlaid metal vessels is the use of static and repetitive motifs, especially when compared to the more dynamic figural scenes on the Mycenaean daggers (Davis 1977:121–122). This quality of metal vessels may perhaps be explained by the methodology used to inlay these objects (Davis 1977:121–122). Metal vessels differ from other inlaid materials in that the surface in which the cut-outs were embedded was curved. Each inlay piece, sometimes divided into

36 In addition to the inlaid gaming boards mentioned here, stone vessels were also occasionally inlaid with either other stones or a paste-like substance, beginning from at least the MM I period (Warren 1969:5–6, 12, 33–34, 63, 89, and 96, on alabastra, bridge-spouted jars, libation tables, spouted bowls, rhyta, e.g., P7, P187, P188, P328, P489, and P593), and metal weapons may have been inlaid by the MM period. Detournay believes that a gold dagger hilt, cut into an open circle and rectangle design, was once inlaid with another material (1980:147–148, fig. 219). Perhaps significantly, traces of gold were also found along the blade, between the two mid-ribs. This is where the electrum and gold inlays were located on the later Mycenaean daggers with “niello.”
smaller parts to better adhere to the wall of the vessel, had to fit exactly into the bedding prepared for it, lest it fall out (especially in the cold-hammering technique). Each motif had to be inserted one by one for the same reason. This helps to explain the staid nature of the inlays, but the repeated use of the same motifs on one vessel is more difficult to explain. Perhaps, if a stencil was used, it was easier for the artist to reuse the same stencils in repeated patterns on the same vessel (Davis 1977:122). Or, perhaps, it was a question of aesthetics. In any case, it is a quality that all extant metal vessels seem to share.

One ceramic flat-rimmed jug (JUG 5) from Phaistos (Levi 1976, pl. XLIVa [33:1]) seems to share the same qualities as inlaid metal vessels. The jug is decorated around the body with a series of whitish yellow “coffee bean” shapes. The rim, neck, and base are decorated in bands of the same color. Around the neck is a repoussé torus band painted orange, which is overlaid with red, repoussé leaf-shaped clay rivets. The rivets are similar in shape to the three rivet heads on the interior of a silver goblet with gold overlays from a tomb near Knossos (Davis 1977:112–116, no. 21, figs. 91–92). The orange and red color of the torus ring and clay rivets is reminiscent of the copper torus ring on a storage jar from Shaft Grave IV (Karo 1930, pl. CXXXIV; also Davis 1977:149–155, no. 43, fig. 120; also Matthäus 1980, pl. 74:1), as well as the use of copper as reinforcing elements on many other metal vessels (Davis 1977:337). Around the high up-swung handle are bands of whitish yellow as well. The handle recalls the torus ring on the rock crystal rhyton from Zakros (Platon 1971:135–136, col. photo 139; also Koehl 2006:86, no. 87, pl. 9:87). In between each rock crystal bead of the torus ring are caps set with gold. The bands on the handle of the jug with “coffee bean” shapes replicate the gold wire decoration of the rhyton’s torus ring, thus, it is likely that on the metal original, the handle of the jug was also set with gold wire. The torus ring of the ceramic jug also suggests that the neck and body on the original metal jug were made separately and then
attached later. Certain jars, jugs, and rhyta that were made in separate parts have gilding around the neck (see 3.II.2 Torus Ring and Separate Necks). The whitish yellow color of the bands around the handle, neck, and rim seem to conform to the practice of using gold leaf in these locations. Perhaps the “coffee bean” shapes also represent gold. If this ceramic jug were in fact a copy of a metal model—and its “metallic” features point to an imitation—then the “coffee bean” shapes may have been gold inlays. The repetitive, static motifs—not very usual decoration on ceramic vessels—conform well to the notion of what cold-hammered inlays in metal may have looked like.

As it is possible some metal and ceramic vessels were used as sets (see 6.III.1 Ceramic Vessel Sets), perhaps the ewer type was paired with angular cup(s). Two cups of this type from Phaistos are also decorated with the “coffee bean” shapes (Levi 1976, pl. LIIa [33:2] and 133i [33:3]). Fragments of a cup (?) from Knossos with a similar design may indicate another set or a derived copy of the original set (Mackenzie 1903, pl. IV:6 [33:4]).

As mentioned previously under the section 4.IV Ornamental Bands, certain straight-sided cups and/or tumblers may have been adorned with metal cut-outs set in bands. It is difficult, at times, to tell from the ceramic copies whether the painted features were meant to represent added strips or inlaid strips and, thus, the possibility remains open for both. Consider a cup/tumbler from Knossos (MacGillivray 1998, pl. 7:230 and 57:230 [33:5]). A series of white vertical foliate bands run around the cup with added red dots along the stem. The design is similar to the one on the gold cup from Mycenae (Karo 1930, pl. CX; also Davis 1977:173–174, no. 57, fig. 142; also Matthäus 1980, pl. 75:10), except that instead of repoussé foliage, the edgy, pointy plants on the ceramic cup looks like they are imitating a simple cut-out pattern. The leaves on the repoussé cup are only a little rounder than on the ceramic plant. The same foliage motif is seen on a tumbler from Phaistos (Levi 1976, pl. LV1a [35:6]). In the last case, extra (metal) bands of a different
material (also “riveted” to the cup) seem to have been added for color contrast as well. On certain metal daggers and cups from the Shaft Graves at Mycenae, one of the techniques for containing the inlay piece was to add fine rivets, especially on pieces done in cold-hammering (Xenaki-Sakellariou and Chatziliou 1989:11). The red dots along the stems of the tumbler/cup from Knossos [33:5] may suggest the use of this technique. The triangle-shaped cut-outs set in rows on another tumbler from Phaistos (Pernier 1935, pl. XXIIc [33:7]), as well as the vessels with red bands mentioned under 4.IV.1 Bands with Dots, also suggest that additional copper strips were laid on top of the cut-outs to prevent them from falling out.

The potential metal inlays on these last vessels were cut into simple designs and applied as individual pieces. Another cup, said to be from Knossos, suggests that thin strips of metal were combined and applied to form a cohesive pattern (Evans 1921, fig. 186e [33:8]). This cup is arranged in a series of fine looping strips in the vague shape of repeated flowers. At each juncture, there is a red dot—at the location a real rivet or clamp would have been useful to affix the pattern to the cup. A similar repeated design with affixing dots was found on a bowl in the Kamares cave (Evans 1921:261, fn. 1, fig. 194k [33:9]). One can imagine these decorative patterns being executed in ajouré—a technique that resembles filigree, but really involves cutting out holes or patterns in one sheet of metal. The looping “cloison” shape on the straight-sided cup [33:8] is reminiscent of the shape of the ivory “cloisons” on the “Royal Draught-board” at Knossos (Evans 1921, fig. 338 close-up [33:10]). Each of the ivory “cloisons” was coated with ribbed gold (which makes it look like wire), and in between each loop can be seen an imitation of a clamp, which would only have been useful if the original “cloisons” were made from

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37 The cup was found at Phylakopi, but the cup is said to be of Knossian fabric (Evans 1921:247, fig. 186e).

38 This looping wire technique may have been imitated on ceramic cups, such as, for example a straight-sided cup (Levi 1976, pl. LIVb) and a carinated cup (Levi 1976, pl. 131i) from Phaistos.
gold wire. It seems then that “cloisonné” medallions on the gaming board from Knossos were probably imitating metal work with inlaid pieces.

The possibility that the gaming board may have been imitating a metal inlay technique is perhaps significant due to the fact that the object demonstrates a primitive form of enameling—a technique that involves fusing a vitreous substance to a metal substrate by firing. The rock crystal pieces in the large medallions at the top of the board were apparently backed by silver plates and a blue-green paste (“kyanos”), which was, in turn, embedded into silver plates (Evans 1921:472–473 [32:2]). The other gaming boards and lids from Knossos, Tylissos, and Mycenae [32:3–5]—which shared the same rosette pattern as on the first gaming board—used blue-green faience instead of silver and paste inlays, thus the two materials (blue paste and faience) had a connotative association.39 Faience is a vitreous material and, perhaps, experiments with faience production may have led to early forms of enameling pastes. That paste-like substances were used on metal vessels is clear by the example of the Minoan-made goblet with repoussé rosettes from Shaft Grave V at Mycenae (Davis 1977:204–208, no. 82, figs. 169–171 [33:11]). The gold goblet had traces of white and red substances still adhering to the metal. The red substance is thought to be an adhesive for a material such as lapis or blue faience (Davis 1977:207). In its original state, this vessel once “bore [red] rosettes with gold-rimmed petals against a white ground, with gold and white stripes above and below, and a row of gold bosses against a blue ground at the foot [of the pedestal]” (Davis 1977:207). Incidentally, the other goblet in the same Shaft Grave is the electrum goblet with inlaid flowerbeds. This vessel was perhaps one of the earliest with the use of a “niello-like”

39 Evans (1921:262, fig. 194a) provides an example of a “cloisonné disk” from a diadem credited to Senusert I’s daughter (Lythgoe 1919, fig. 6). It is also in the shape of a rosette within a medallion. Senusret I lived during the early part of the Middle Kingdom, which is equivalent to the early Middle Minoan Period. The diadem was found at Lahun, a site in which Minoan pottery was also found (Kemp and Merrillees 1980). It is not clear if this object is an import from Crete or whether the Egyptians may have taught the Minoans the use of enameling.
substance (Karo 1930, pls. CXII–CXIII; also Davis 208–220, no. 83, figs. 172–173; also Xenaki-Sakellariou and Chatziliou 1989:29, no. 18, pl. XII:1 [31:9]). The effect of the inlaid (with “niello”) gold circle cut-outs on this goblet would have been analogous to the embossed circles on the pedestal base of the goblet “enameled” with a blue substance [33:11]. Faience usually occurs as blue-green on Crete and the rest of the Aegean, but it can also be made black with the addition of manganese. Could the early “niello” (not true niello) have derived from the production of faience? Faience is applied as a powder and when fired turns into a solid, the same as niello. Perhaps the “pastes” on the gold goblet with rosettes were early experiments with enameling and “niello” production.

The rosettes on the gaming boards from the “West Treasury” at Knossos and Shaft Grave IV at Mycenae, the lid from Tylissos, and the goblet from the Grave V at Mycenae [32:3–5] all share the same features: “doubled” petals or “veins” within the petals, a hollow inner circle, and the whole set within a medallion of a different color than the petals. These objects all date to MM III to LM I. Earlier MM examples of rosettes were simpler: they consisted of simple rounded petals emanating from a single point/circle in the center (see e.g., Walberg 1987a:54–56, fig. 41, motif 10.iii:1–4 and 6–12). One type of rosette found on ceramic vessels—the ones painted in reserve on a circular medallion—may perhaps be imitating either inlay or enamel work on metal vessels.

Much comparison has already been made between the painted rosettes on a semi-globular cup from Knossos (Evans 1921:241, pl. Ila [33:12]; also MacGillivray 1998, pl.

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40 Apparently, manganese is a naturally occurring substance found in many types of rock. It does not occur as a pure metal, but it is usually combined with other chemicals such as oxygen, sulfur, and chlorine. Manganese and sulfur together forms manganous sulfate. Sulfur is one of the ingredients in true “niello” (Toxicological Profile for Manganese, July 1992, United States Public Health Service). Did experimentation with different minerals lead to a black substance with sulfur compounds in it?

41 On the goblet, there was no medallion, but the rosettes were apparently embedded in a white background.
103:617) and the rosettes executed by chasing on the base of a number of silver semi-globular bowls from Tòd (Bisson de la Roque 1950, pl. XVII:70620 [33:13], 70627 [33:14], and 70629 [33:15], and pl. XVIII:70630 [33:16]; e.g., Warren and Hankey 1989, pl. 11A–B). While the inspiration for the decoration of the base of semi-globular cups may have originated from silver cups of this kind (see, e.g., MacGillivray 1998, pl. 13), the inspiration of the specific type of rosette on the ceramic cup may have come from another source—inlay work.

In addition to the semi-globular cup from Knossos (Evans 1921:241, pl. IIa [33:12]; also MacGillivray 1998, pl. 103:617), other vessels that share the same motif (large rosette in reserve within a self-contained medallion) include a flask with eight petals in reserve and an orange dot at the center from Knossos (MacGillivray 1998, pls. 20:570 and 94:570 [34:1]), another flask/jug from Phaistos (Levi 1976, pl. 76k [34:2]), a flat basin with a rosette on the interior (Levi 1976, pl. 60d [34:3]), a stand with a rosette on the interior of the bowl (Pernier 1935, pl. XXIib [34:4]; Levi 1961–1962, fig. 27a bottom left, perhaps another chalice?), an small carinated cup (Levi 1976, pl. 131n [34:5]), a bridge-spouted jar (Levi 1976, pl. 110d [34:6]), and a MM II stone libation table, all from Phaistos (Pernier 1935, fig. 105; also Warren 1969: 63, P328 [34:7]). The rosettes on the stone table (and the bridge-spouted jar) are remarkably similar to the rosettes on the semi-globular cup from Knossos [33:12] in that the petals on the libation table are formed by the engraved surface surrounding it. There are not many ceramic

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42 This vessel from Phaistos appears from the photo to be flask-like with a flat profile and short handles reaching the rim. The Knossos specimen has a flat profile, but no neck has been preserved. Perhaps these two vessels were of the same shape. The Knossos flask has a white-petaled rosette on one side and apparently, a black-petaled rosette on the other. This may help explain the contrasting colors of the rosettes on the flask from Knossos and the flask/jug from Phaistos.

43 This is not including all manner of ceramic vessels with rosettes, some free-standing and others framed within a circular medallion (e.g., Levi 1976, pl. 131n). These may or may not have been inlaid (or inspired by inlaid metal vessels)—but it is difficult to prove.
motifs in reserve (the “negative space” forming the design) on MM II pottery besides
these self-contained rosette motifs and other “medallions” with crosses and other
symmetrical designs\(^{44}\) (e.g., Walberg 1987a:54–56, figs. 40–41, “radiating motifs” 10.i:2,
5, 7, 14, 16; 10.ii:1, 2, 6; 10.iii:3, 6, 7–9; 10.iv:4, 5, 15; Evans 1921, fig. 194b–c, f, h, j,
and k). One of these designs (Levi 1955–1956:298, fig. 11b; Walberg 1987a:54–55, fig.
40, motif 10.ii:2), a dark “cross” in a white circle, is the exact parallel of the center of the
medallions on the “Royal Draught-board” at Knossos, only that these medallions were
composed of rock crystal inlays on a silver or blue paste background (Evans 1921:471–
477, figs. 338–440, col. pl. V[32:2]). The rosettes on the gaming boards from the “West
Temple Repository” and from Shaft Grave IV at Mycenae (Evans 1921:470–472, 480–
483, figs. 337, 344, 346[32:3] and [32:5]) are outlined by the faience outlays around the
petals (Evans 1921:482). The medallion surrounding the motif is needed to create a
defining border and to contain the inlays or paste. Thus, in a way, the motif is, to a certain
extent, defined by the “negative space” within the medallion—the same technique used
on these ceramic vessels too.

Perhaps not coincidentally, the engraved surface around the petals on the stone
table was filled in with a red substance (Warren 1969:63, P328[34:7]; Davis 1977:119), a
technique that is connotatively similar to the practice of inlaying or enameling on metal.
To form the rosettes on a metal vessel of the kind painted on the ceramic vessels, the
petals of the rosette would either have been created by etching or chasing the surface
around them and then filling in the rest of the medallion with a paste or inlay (like on the
libation table) or inlays cut out into the “negative shapes” of the petal would have been
inserted into a prepared bedding, whereby the petals could be filled with another inlay
material or another color paste (or enamel). Shell inlays cut out to into “negative shapes”
were found in the Vat Deposit at Knossos (Evans 1921:168–170, fig. 120[32:4]), which,

\(^{44}\) See fn. 39 for an example of a “cloisonné disk” in reserve from Egypt.
when reassembled seemed to have “surrounded medallions with quatrefoils that may have been filled with some other substance” (Evans 1921:170). However, some petals of faience found in the same deposit seem to suggest that the inlays should be rearranged to form a rosette. Along with the shell and faience plaques were found “pieces of gold plating, thicker than the mere foil found with later remains, and of copper (much oxidized) on which the gold had probably, in part at least, been overlaid” (Evans 1921:170). Just like on the later gaming boards, the plaques and the metals could have belonged together.

While some may argue that the rosettes found on the ceramic vessels may be imitating the designs on gaming boards or other such objects, it is the contention here that these ceramic vessels are imitating metal vessels with inlaid medallions. The shapes on which these types of rosettes appear are “metallic” (basin with metallic handles; egg-shell thin cup; stands, and perhaps flask); some medallions on the gaming board from the “Royal Draught-board” at Knossos seem to be imitating “metallic” gold wires and clamps; cold-hammering inlay work in metal is known from later periods; and a primitive form of enameling on metal has been found in the Shaft Graves at Mycenae.

While it seems like the rosette was a popular inlay motif, inlays could theoretically take any shape (e.g., cross shape on a bridge-spouted jar?: Levi 1976, pl. XVIIa [34:8]; fish on teapot?: MacGillivray 1998, pl. 7:198 [34:9]; spirals and leaves on a stand?: Levi 1976, pl. LXXIV [34:10]), nor do they necessarily need to be enclosed within a medallion (unless they are imitating enamel). It is just sometimes difficult to determine whether a motif on a ceramic vessel may be imitating inlay work or not. Some clues may be a repetition of static motifs, or, alternatively, a single contained motif, especially those that are figurative or symmetrical, “negative” spaces, sharp edges to the motif, or the similarity of the motif to inlay pieces in another material.
Much information can be gathered from ceramic skeuomorphs about the various metallic decorative techniques that were used on metal vessels through their decorative surfaces. It has to be noted, however, that some decorated skeuomorphs were better indicators of “metalness” than others. In general, the forms rendered in three-dimensional techniques (molding, repoussé, incising, stamping) were able to capture the “look” of the original metal vessels more accurately than any painted decoration. Pottery shapes with painted decoration seem to be the most susceptible to change over time. For a summary of the decorative surface treatments used over time, see section 6.1.2 and Tables 2 and 4.
CHAPTER 5

SHAPES

The preceding chapters concerned the identification of the structural features and the decorative surface treatments on ceramic vessels that may betray signs of “metalness.” This chapter continues the discussion, only now focusing on those ceramic shapes that may have been inspired by metal vessel shapes. As metallic shapes are recognized, not only through comparisons with extant metal examples, but through a consideration of the surface treatment and structural features of a vessel, in a sense, this chapter represents a summary of the potential types of “metallic” forms at the Middle Minoan palatial sites of Knossos and Phaistos mentioned in this study.

The potential metal-inspired pottery types in this chapter are presented in a catalog format. For each type, a brief description will be given, followed by reasons to see the type as metallic, some comparisons to extant metal examples (if applicable), a brief contextual and chronological overview of the appearance of the ceramic imitations, and any further discussion that the type merits.

Skeuomorphs within the catalog are grouped into types (BWL 1, BWL 2, etc.) based on the presumed function of the object (e.g., bowl, cup, basin, chalice, etc.) and its general shape (e.g., cup with straight sides, cup with round base, cup with carinated shoulder, etc.). Objects are sorted alphabetically by functional category (e.g., basins are before bowls). Groups of objects with the same shape, but different surface treatments (representing fluting, gadrooning or inlay work, for example) have, at times, been subdivided into finer categories. This is mainly evident with cups due to the large number of these vessel types that may have been emulating metallic techniques. Thus, for example, straight-sided cups (SS CUP)—itself a division of Cups (straight-sided, semi-
globular, rounded, carinated, and demitasse)—are subdivided according to their decorative surface treatments into different types (SS CUP 1, SS CUP 2, SS CUP 3, etc.). The goal of the catalog is not to create a new typology of Middle Minoan ceramics, but, rather, to provide a means of easy reference to the examples mentioned in this study.¹

5.1 ASKOI (ASK)

Description: Askoi are generally closed, elliptoid forms with only one outlet. Middle Minoan askoi take the shape of either animals/birds or globular/ovoid “teapots” with large spouts (see Levi and Carinci 1988, pls. 107–108). Each askoi is unique in shape, but most feature a fixed loop handle, presumably in service to the vessels’ function.²

Certain figural askoi are very similar in shape to a class of zoomorphic rhyta. In fact, the only significant difference between the two vessel types is the presence of a the secondary outlet on the rhyta (see Koehl 2006:15). It is likely that the two vessel types share the same origins, but not the same function. Figural rhyta and zoomorphic askoi occur prior to the Protopalatial period on Crete. It does not seem likely that these vessel types were modeled on metal models as early as the EM period, but it is possible that metal versions were being produced in the MM and LM periods. A silver stag-shaped rhyton was found in Shaft Grave IV at Mycenae, suggesting that metal rhyta were being produced (at least in the LM period, but, perhaps, also in the MM) alongside ceramic ones (Karo 1930, no. 388, pls. CXV–CXVI; Marinatos and Hirmer 1960, pl. 177; Koehl 1995; 2006:14, ill. 8). It is thought, for example, that the molds for certain Late Bronze Age zoomorphic vessels “must have been extraordinarily realistic statuettes, that were, perhaps, made from wood or metal” (Koehl 2006:14). If indeed these later zoomorphic

¹ Please see section 1.11 Chronology in Chapter 1 for contextual and chronological information.

² One exception seems to be Levi and Carinci pl. 108d, which, like bridge-spouted jars, may have had two vertical handles on the body.
rhyta were molded on metal prototypes, perhaps earlier zoomorphic rhyta and askoi were also inspired by metal figural rhyta as well.

The non-figural askoi do not have parallels with rhyta shapes, but seem to be a cross between MM bridge-spouted jars and teapots. No metal parallels have been found for these type of askoi, but their features suggest a metallic origin. The most salient feature of the non-figural askos is the extravagant spout. On many askoi, the spouts flare upwards and have wrinkled lobes (e.g., Levi 1976, pl. XLVI lower [35:1]). Lobes of any kind and extravagant spouts are features that are more at home on metallic objects. The other “metallic” characteristics of these askoi are the “loop” handles, the decoration on some of the askoi (see below), and the general shape. As a cross between bridge-spouted jars and teapots, which are both shapes that are thought to have metallic prototypes (see below, sections 5.IV Bridge-spouted jars and 5.XIV Teapots), it is also probable that these objects were also made in metal. As these types of askoi are new shapes in the MM period, this section only discusses the non-figural askoi.

*Ceramic examples:* A number of ceramic askoi were reported at Phaistos. Some of the askoi are painted and some are shaped to evoke metallic details. One ceramic askos was compressed in the middle (Levi 1976, pl. 32f [35:2]). The two symmetrical halves of the vessel would make it appear as if the original model were made in two pieces and then joined together in the middle. This would probably have been the only way that closed askoi could have been put together in metal. The spout and the handle would have probably been added later. Another askos was painted with orange bands at the precise locations where the pieces of the metal vessel would have been joined together—around the middle and around the handles and spout (Levi 1976, pl. XLVI lower [35:1]). Perhaps these decorative bands represented metallic copper strengthening bands (see also 4.IV Ornamental Bands). This last vessel also has a unique feature; the top of the vessel has raised ridges that come to a pointy top. This unique feature does not appear on any other
ceramic vessel, but it does, however, resemble a modern teapot lid. Although this specific top can only be verified by metallic examples with the same feature, it does, in the meanwhile, lend a “metallic” air to the shape of the askos.

The majority non-figural askoi have the same type of spouts as those found on a particular type of teapot (TP 3; e.g., Levi 1957–1958, fig. 151a [54:11]; Banti 1939–1940, fig. 8 [54:10]; Levi 1976, pl. 32c [54:9]). The spouts are high, lobed or crinkly, or have a ridged lip. The teapots within this group have the body of bridge-spouted jars, but differ from these vessels by their extravagant spouts. One askos in particular (Levi 1976, pl. 148b [35:3]) looks to be a cross between these teapots and the other askoi. The shape is one of a bridge-spouted jar, with its two horizontal handles, but the top part of the vessel is closed. One wonders whether these teapots were related in function to the askoi. Given the small outlet for the liquid that was probably contained in the askoi, but given the large mouth of the spout, it seems probable that these objects were used for slowly pouring out a precious commodity, perhaps perfumed oils (Koehl 2006:296).

*Date and Distribution:* Ceramic examples of non-figural askoi were found at Phaistos in “Bastione II” (Levi 1976, pl. 32f [35:2]), in the “Grande Frana” (Levi 1976, pl. 148b [35:3]), in the south section of the site (Levi 1976, pl. 25d), and within the Southwest Quarter of the palace, in rooms LXV inf. (Levi 1976, pl. 32d) and room IL, within the bench (Levi 1976, pl. XLVI lower; 148b [35:1]). All are dated to either MM IB (*Fase* Ia) or MM IIA (*Fase* Ia/Ib *iniziale* or Ib *iniziale*).

**5.II BASINS (BAS)**

**BAS 1. Basin with wide rim**

*Description:* This basin is characterized by its wide, flat, sharply everted rim. Only the rim and attached upper portion of the body are preserved on the ceramic examples, but
comparisons with metal basins suggest that the ceramic copies also have had a slightly raised ring base and a single large loop handle. This shape is related to RD CUP 1 in construction, but is larger in size. Whereas the diameter of the cups does not surpass 15 cm in diameter, the diameter of these basins can range from 20 to 40 cm. The most ornate basins seem to be larger, falling within a range between 30–40 cm.

**Metal examples:** Metal basins with high looping handles were all made out of bronze, presumably to economize on the cost of more precious materials due to their large size. Matthäus divides this basin class into five varieties, based on the manufacturing technique of the handle and the rim (1980, type 32 “einhenklige Breitrandschalen,” 217–213, pls. 37–41). The plainest basins have a minimal rim size and little or no decoration (Variante A, B, pls. 37 and 38). A couple of examples feature flat rims folded over either a copper or lead ring (variante C, D, pls. 38 and 39). One from Mycenae has cross-hatching on the rim (Matthäus 1980, pl. 38:321). The final variant is the most ornate (variante E, pls. 39 and 40). These basins are decorated on the rim and handle with matching, three-dimensional relief designs. In some cases, the design is applied directly to the vessel’s rim (Matthäus 1980, pl. 39:326 and pl. 40:329), but in most cases, a secondary rim was riveted to the horizontal extension on the body (see section 3.II.3 Added Rims). It is this final variant that seems to have been imitated in clay; the following discussion only pertains to this subtype.

The shape and manufacturing details of the most ornate basins (BAS 1) link this vessel type with smaller cups (RD CUP 1) found on the mainland. These cups differ from the basins only in the size of their diameter; they have the same shape and secondary added rim (Davis 1977:158 and 159). In fact, due to the similarity in relief designs on the cups and certain basins from Crete, it is thought that both these vessel types were made in the same workshop (Karo 1930:235).
Contrary to the bronze basins, the smaller cups on the mainland (RD CUP 1) were fashioned from gold and silver. In general, the body of the vessel, including the convex walls and the flat everted rim, was raised from thin silver plate. Only in one case was the core of the body made from copper—but this feature was then plated with silver inside and out, apparently by a process of fusion (Davis 1977:260, no. 107, figs. 206–207). The secondary rim (and handle) was cast from either silver or copper and attached to the rim of the body by small flat rivets. The secondary rim and the handle were invariably covered in gold plate. The relief designs on the added rim matches those on the handle (see Davis 1977:157, no. 46, fig. 124; 247, no. 97, fig. 194; 260, no. 107, figs. 206–207; 271, no. 112, fig. 221; 296, no. 129, fig. 242; 311, no. 137, fig. 252). Given the similarities in manufacturing techniques between the cups from the mainland and the larger basins, it is also likely that the ornamental rims on the basins were also accented with gold or another precious material.\(^3\) The gilding and silver-plating of accents on metal vessels was a common feature of Minoan metalwork (Davis 1977:341–344).

Extant examples of bronze basins were all found in contexts dating to the end of the Middle Minoan period and later (MM III–LM I). Comparisons with potential ceramic copies, however, indicate that the basins may have being manufactured earlier on Crete (MM IIB–IIIA). It may be that the bronze vessels found in later contexts were heirlooms from an earlier period or that no metal vessels from an earlier period have been preserved. A number of large basins were found at Knossos. One example from the

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\(^3\) A basin from Malia was found in pieces. Some of the fragments were from an added rim and layers of “lead” that mimicked the shape and decoration of the rim. Marinatos believes that the lead layers were used as a cushion between the bronze vessel rim and the added rim (1929, 374–375, see fig. 7a for his interpretation of the manufacture of the rim). One has to wonder, however, why the lead layers would be so ornate if they were not seen. The cushioning of the two bronze rims by an added lead layer was not common practice with the other basins and RD CUP 1. Many copper rounded cups were plated with silver before the gilding was applied to the rim, however (Davis 1977:261). Perhaps the so-called lead sheets were really silver or tin. If tin, this could prove to be the earliest instance of tinning in the Aegean world. Only a scientific analysis of the material can settled the matter.
“Northwest Treasure House” (Evans 1928:637–644, figs. 402–405, 407d; also Matthäus 1980, pl. 39:325 [35:4]) features a diagonally curving leaf pattern (or foliate band) with a cross-ribbed band on the interior lip of the rim. This appears to have been a popular motif. Other basins with the same rim pattern were found at Phaistos (Savignoni 1904:546, no. 18, fig. 30), Gournia (Silverman 1974:13, fig. 1, now lost), and Circle B, Grave Epsilon at Mycenae (Mylonas 1972–1973:96–98, pl. 83). The last was probably an import from Crete. The other two examples from the same context at Knossos feature a “sacred lily” pattern and a waz-lily design on the rim, respectively (Evans 1928:642–644, figs. 407c, 408, 409a; also Matthäus 1980:211, pl. 40:326 [35:5]). Similar basins, but with a different rim pattern were also found at Mochlos (Seager 1909:287ff. fig. 11, no. 11a; also Evans 1928:644, fig. 409B; also Matthäus 1980:211–212, pl. 40:328 [35:6]), Malia (Marinatos 1929:368–369, pl. XXIII, figs. 2–3; also Matthäus 1980:211–212, pl. 40:327 [35:7]), Kato Zakros (Platon 1971:145, fig. 147; also Matthäus 1980:211, pl. 39:323 [8:2]), and Zapher Papoura (Evans 1928:635–637, fig. 398b; also Matthäus 1980:212, pl. 40:329 [8:8]). Both the basin from Mochlos and Malia [35:6–7] were embellished with raised whorl-shell designs on the rim and handle. The edge of the rims were scalloped. The rim fragment from Kato Zakro featured rows of double-axe motifs [8:2], while the basin from Zapher Papoura was chased in a cross-hatched pattern [8:8]. Fragments of rims found at Mycenae may have been from basins. These rims feature raised whorl-shells, flat spirals, as well as torsional and notched fluting around the edge (see Matthäus 1980:314–315, pl. 58:512–515 [35:8]).

Besides the basin from Grave Epsilon at Mycenae, the only other ornate bronze basin (handle only) from the mainland comes from an uncertain context at Thebes
The handle features repoussé whorl-shells, similar in style to the ones on the basin from Malia and Mochlos. Given the fact that all the other ornate basins with relief decoration were found within Crete, and the fact that only the handle was found, there is the possibility that this handle once belonged to a cup of RD CUP 1 type. On the other hand, the handle seems too large to belong to a cup, and no other extant metal cup with added rim has quite exaggerated features as the raised whorl shells on this example. If indeed this handle belongs to a basin with ornate rim, this would make it one of the few Minoan exports of metal basins to the mainland.

One of the reasons the Minoan basin with ornamental rim was not common on the mainland may be because the smaller cup with ornamental rim seemed to supersede the function of the basin on the mainland. Whereas only a few basins of Minoan manufacture were found on the mainland, no example of the metal cup with added rim were found on Crete (Davis 1977:158). Nevertheless, it appears that the smaller cups—at least the earliest ones—were made by Minoan metal smiths (Davis 1977:158). This would suggest that the cups were especially manufactured for the Mycenaean market, with Mycenaean tastes in mind. Extant metal cups with added rims were found at Mycenae in Shaft Grave I (Karo 1930, pl. XCI; also Davis 1977:247–248, no. 97, fig. 194), Shaft Grave V (Karo

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4 Matthäus 1980 includes a bronze basin from Asine in his “variante E: broad rim vessels with relief decoration around the rim” (1980:212, pl. 41). However, it is not clear why this plain basin should be included in this category. The rim diameter of this vessel is 20 cm, somewhat smaller than the average diameter of the other vessels in this category, and the rim and handle are not decorated. There are other plain bronze basins from the mainland (see his other variants, pls. 37–39), but it seems that the ornate basins with relief decoration on the rim was unique to Crete. Fragments of rims with ornate decoration were found at Mycenae (Matthäus 1980, pl. 58), but it is unclear whether these were in fact basins or whether they were Minoan- or Mycenean-made. If made on the mainland, the late date of these fragments may indicate that they are local copies (counterfeits) of imported Minoan basins.

5 While other plain bronze basins were found on the mainland, these vessels were manufactured in a different manner than the ornate basins with relief decoration on the rim. It may be that these, generally later in date, basins were counterfeits, i.e., simpler local copies of the Minoan basin shape. Also see fn. 4.
1930, pl. CXXXVI; also Davis 1977:157–159, no. 46, fig. 124 [36:1]), and another unknown context (Davis 1977:296–297, no. 129, figs. 241–242); at Vapheio (Tsountas 1889, pl. 7:15; also Davis 1977:260–263, no. 107, figs. 206–207 [36:2]); Midea (Persson, 1942, no. 39, fig. 99:6, pl. VI.2; also Davis 1977:271–273, no. 112, fig. 221 [36:3]); and Kazarma in the Argolid (Protonotariou-Deïlaki 1969:104–105, pl. 84 top; also Davis 1977:311–312, no. 137, fig. 252). The cup from Shaft Grave V [36:1] at Mycenae is similar in execution to one of the metal basins from the “Northwest Treasure House” at Knossos [35:4]. It has the same ribbed lip and foliate design as the basin from Knossos, and it is suggested that both vessels were made in the same workshop (Karo 1930:235). The cup from Shaft Grave I features a design of leaves on the rim, perhaps a derived motif of a foliate band. All the other cups exhibit flat whorl-shell patterns; the details are incised rather than repoussé. Given the later date of these cups (LH I–IIA) and the derivative nature of the motif, it is possible that these cups were local Mycenaean copies of imported Minoan cups (counterfeits), or that the whorl-shell motif had become more derivative on Crete at the time these cups were manufactured.

*Ceramic examples:* Too shallow to be bowls, the basins are large (30–50 cm in diameter) vessels with wide flat everted rims. The decoration on the flat rim is reminiscent of the decoration on the added rims of the most ornate basins and smaller cups from the mainland (RD CUP 1). One group of ceramic basins bears a creamy white slip, which Evans includes in his “creamy-bordered” group of pottery on the rim (1935:120–121). The edges of these basins are scalloped into cut-out patterns and decorated individually with either stamped spirals, impressed concentric circles, molded argonauts, flowers, or a combination of leaves and Pecten shells (Evans 1935:119, fig. 86, fig. 89, pl. XXIXe, pl. XXIXa, fig. 95, pl. XXIXc, fig. 97, pl. XXXd, pl. XXXe [36:4]; also MacGillivray 1998:148, pl. 91:548–551 [36:5]). The spirals, circles and argonauts may be derivative forms of the whorl-shell patterns seen on certain metal cups and basins. The cut-out rims
on the “creamy-bordered” basins are also similar to the scalloped edges seen on such metal basins found at Malia (Matthäus 1980:211–212, pl. 40:327 [35:7]) and Mochlos (Matthäus 1980:211–212, pl. 40:328 [35:6]). A large bowl with cut-out petal rims called a “fruitstand” was found at Phaistos (Levi 1976, pl. 184e [36:6]). The base is missing, and thus it is possible that the vessel may have once been a basin, similar to the “creamy-bordered” basin with ornate petal cut-outs around the rim. The petals are also painted white.6

One ceramic basin (called a “fruitstand” by Evans 1921:242–243, suppl. pl. IIIb; 1935:120–121, fig. 88 [36:7 left]) is decorated in molded torsional flutes, similar to the flutes seen on some bowls at Tôd (e.g., Bisson de la Roque 1950, pl. V:70509 [9:6], pl. XVII:70620 [14:10], pl. XVIII:70633 [14:12]). The painted spirals on the flat rim evoke the stamped and molded decoration on the rims of the “creamy-bordered” group of basins [36:4] as well as on the large basin with painted “tortoise-shell ripple” decoration on the interior (Evans 1935:120–121, fig. 89, pl. XXIXe [36:7 right]).

Another group of basins from Knossos are decorated on the rim with either painted vertical lines resembling “tortoise-shell ripple” (MacGillivray 1998, pls. 92:953, 92:554, 92:955), incised vertical lines (MacGillivray 1998, pls. 91:952), ripple burnishing (MacGillivray 1998, pls. 97:595), or painted floral bands (MacGillivray 1998, pls. 95:579, also Day and Wilson 1998, fig. 2). The floral band appears on a vessel from Phaistos that has been called a stand, but which may also have been a basin (Levi 1976,

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6 The stand from Phaistos with painted foliate band (Levi 1976, pl. 184a, b, d) appears to have a small rounded base in the photo from Levi 1976. In Levi and Carinci 1988, the illustrated drawing of the vessel (pl. 11f) does not have a base, therefore, the shape of the base is not really known. The same applies to the basin/stand from Phaistos with the cut-out petals (Levi 1976, pl. 184e; Levi and Carinci 1988, pl. 11g). These two examples are the only vessels called stands in Levi and Carinci 1988 that date to MM III. It is possible that these vessels were basins rather than “stands.” Even so, it may be that basins may have been set on a pedestal base, in which case that basins and stands may be related in function (see 6.III.1 Ceramic Vessel Sets).
pl. 184e [36:6]). The decoration on these basins may have been derived from metal basins, but, at present, it is not clear what the inspiration may have been.

**Date and Distribution:** The ceramic examples of this basin/cup shape fall within MM IIB–MM IIIA. At Knossos, the examples were found in the “West Polychrome Deposits” (MacGillivray 1998:33–36), and the examples from Phaistos, found in the “Area of the Ramp” and room LXXXVI of House C, were also dated to MM III (Fase III). The closest metal parallel, both geographically and in design, is the metal basin from the “Northwest Treasure House” at Knossos. This basin was found in a basement deposit dating from MM IIIB to LM IA (Evans 1928:616). All other examples of metal basins and cups with the foliate design on the rim (at Gournia, Phaistos, and Shaft Grave V at Mycenae, respectively) also date to the same general time period. The cup with foliate design from Mycenae is a little later in date (LH I–LH IIA), and Grave V tends to fall in the MM III–LH I phase. The cups with other designs on them, especially the series of cups with whorl-shell patterns (from Vapheio, Midea, and Kazarma) seem to be later in date (LH I–IIA), not only because of their context dates, but also from their manufacturing technique: the whorl-shells on these examples are flatter, and the details are brought out more by incision than three-dimensional modeling. Perhaps these examples, from Mycenaean centers, were local copies (*counterfeits* since they were made from metal) of Minoan imported whorl-shell cups. Thus, it seems that the evolution of the basin and cup with flat rim was this: basins with plain and ornate rims were originally made on Crete, sometime at the end of MM IIB, beginning of MM IIIA. Ceramic imitations were made of the basins on Crete at this time (the diameter of the ceramic examples match the size of the basins and not the cups). The Minoans fabricated the rounded cups (RD CUP 1) with ornate rims (same vessel as the basin but with a smaller diameter) and exported them to Mycenae (Davis 1977:158). No examples of the cups were found on Crete, and only a few basins were found on the mainland (Davis
suggesting that the cups were perhaps manufactured especially for the Mycenaean market. The inhabitants of Mycenae imported cups with different designs on the rim, but the cup with the whorl-shell design on the rim was the only one that was locally copied at various Mycenaean secondary centers.

**Discussion:** There is no indication that metal basins were imported from elsewhere. The shape of the basin appears to have grown out of the domestic need for large bronze containers (Matthäus 1980). The basins with added rims seem to be more ornate versions of the plainer basins (Matthäus 1980, pls. 37–41). It appears that most of the ceramic copies are imitating these decorated basins (see 6.III.1 Ceramic Vessel Sets).

**BAS 2. Basin with inlay or enameling**

**Description:** Relatively shallow basin with straight sides, square rim, and two horizontal handles on the body. Decorated in a manner evoking repoussé and inlaying or enameling.

**Ceramic example:** Although simple basins with straight-sides do appear in metal and ceramic, none appear to have been as elaborately decorated as this ceramic basin (Levi 1976, pl. 60d [36:8]). The basin was painted in a manner that evokes repoussé as well as either inlaying or enameling. Around the interior and exterior of the basin are large white running spirals. The spirals recall the stamped spirals on a pyxis with the shape of a small basin (see PYX 2; Levi 1976, pl. 117b [53:8]). Perhaps the large white spirals on this basin is also meant to reference repoussé work. The squared-off rim of the basin appears metallic, but it may also be a function of the construction constraints of the vessel (as seen on pithoi, for example) The interior decoration of the vessel, however, is highly evocative of inlay or enameling. The rosette design, which covers the whole of the interior, was done in “reserve.” The petals are formed from negative space within the white ground that surrounds it. This “medallion” design in reserve is typical of inlay and enameling work, as seen on other media (see 4.VII Inlay and Enameling), thus, it is
possible that the metallic prototype of this basin was once decorated in inlay or enamel. The large, flat surface of the bottom of the basin would be ideal for such decorative techniques.

Date and Distribution: The basin with the painted rosette was found in room LV of the Southwest Quarter of the Phaistos palace. It is dated to MM II (Fase Ib). Given the parallels (both metal and ceramic) with other vessels with large repoussé spirals, however, it is possible that this basin was made in MM IIB (see 4.VI.2 Repoussé Spirals).

5.III BOWLS (BWL)

BWL 1. Bowl with flaring cylindrical lugs

Description: Medium-sized bowl, approximately 8 cm high and 15 cm in diameter. The bowl has a flat base and two lug handles just below the rim. The clay lugs are slightly depressed in the center and have rounded ends (here called flaring cylindrical lugs).

Metallic examples: There are as yet no extant examples from the Aegean Bronze Age of metal bowls with lug handles of this kind. Later examples do exist, however, showing what a metal bowl with cylindrical lug handles at the rim may have looked like. These later examples demonstrate the purpose of the pierced lug—to accommodate the addition of two metal rings. Non-pierced lugs could, of course, been also used as handles to aid in holding the vessel. As cylindrical lugs were a novel feature on Crete and occur in different forms in Anatolia, it is presumed here that it was imported from this region. The

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7 Metal vessels with lug handles were found in Anatolia, including shallow pans with horizontal lug handles at the rim (Koşay 1944, MA72), dated to EB II/III, and two deep bowls with vertical lug attachments for affixing a loop handle from the MBA period (Özgüç 1964:370, fig. 36; Özgüç 1986a, pl. 127:6), but these attachments are different from the cylindrical lug handles seen on this bowl.

8 See, for example, a bowl with cylindrical lugs from Fidanlık-Ankara in Turkey, dated to the Iron Age (Toker 1992:206, pl. 92). Other metal bowls with the same cylindrical lugs were found at the same site and at Gordion in Turkey, dating to the same period (see Toker 1992:205–207, pls. 88–95). All are bronze.
cylindrical lug appears to be related to the spool handle, except that it was placed on the vessel in a horizontal position rather than vertically.

**Ceramic examples:** Only one example of a ceramic bowl with cylindrical lugs has been found—at Knossos (MacGillivray 1998, pl. 30:985 [36:9]). The clay lugs are slightly depressed in the center and have rounded ends. The interior of the bowl has a large painted ripple pattern on buff ground below the rim. The effect of alternating light and dark lines is reminiscent of the effect of fluting, as seen on the silver bowls from Tōd, for example, (e.g., Bisson de la Roque 1950, pl. XVII:70627 and 70629, pl. XVIII:70630), although, of course, the decoration may also have been drawn from the ceramic repertoire of the time.

**Date and Distribution:** The only ceramic bowl with cylindrical lugs, as yet, comes from the “South Polychrome Deposits” at Knossos. The pottery from these contexts has been stylistically dated to MM IIA and the end of MM IIB–MM IIIA (MacGillivray 1998:48–49). The ripple decoration on the bowl places it in within MM IIB–MM IIIA. This date conforms to the context date of a number of conical rhyta and a “candeliere” with lug handles—the only other vessels to display flaring cylindrical lugs in the Middle Minoan period on Crete (for an example of a “candeliere” at Phaistos with cylindrical lugs, see Levi 1965–1966, fig. 25. For examples of conical rhyta with the same type of lugs, see Koehl 2006, fig. 16:413, Levi 1976, pl. LXXX [Koehl’s no. 416] and MacGillivray 1998, pls. 16:396, 65:396, and 78:396). The lugs on the “candeliere” are adorned with clay rivets.

**Discussion:** Even though the lug handle is not a new feature on Crete, appearing in the Early Minoan period on ceramic and stone vessels (e.g., Betancourt 1985, figs. 13, 17, 20, 29; Betancourt 2008, fig. 4.3; Warren 1969:20–21, 27–28), the flaring cylindrical lug is a new type of lug handle that only seems to appear in ceramic at the end of MM IIB–
MM IIIA. It does not seem to continue into the LM period. The example of the “candeliere” from Phaistos with clay rivets “affixing” the lugs to the rim (and the clay rivet at the handle of the conical rhyton from Phaistos) suggests that these lugs were modeled on metal prototypes (Levi 1965–1966, fig. 25; Levi 1976, pl. LXXX, respectively). Given the sudden appearance and limited use of this feature to the MM IIB–MM IIIA period, as well as the unusualness of this type of handle in the Minoan ceramic repertoire, one wonders whether the ceramic vessels with these features were, in fact, *imitations* and whether the metal vessels used as models were imported, perhaps, from Anatolia. The Vapheio spool handle—though to have originated in Anatolia (see under 6.II.2 Origins. Anatolia and the Near East)—is, after all, the vertical version of the flaring cylindrical lug handle.

**BWL 2. Shallow bowl with one or two horizontal handles**

*Description:* Bowl with a relatively wider diameter than depth. Slightly flat base, and wide bottom; concave walls. One or two horizontal handles that are attached (and rise above) the rim.

*Metal Examples:* Within the group of silver vessels at Tôd, a number of bowls share similar features with the ceramic examples. The rounded concave shape of the body with a slight flat base is represented by certain bowls with torsional and vertical flutes (e.g., Bisson de la Roque 1950, pl. XVIII:70633, pl. XVIII:70637, pl. XVII:70627, pl. XVII:70629) and the horizontal handles rising above the rim can be found on four bowls of slightly different shape (Bisson de la Roque 1950, pl. XIII:70582 [37:1], pl. XVIII:70631 [37:2], pl. XIV:70592, 70593 [37:3]). Although a bowl with a concave profile and two handles were not found in the collection, is it easy to imagine that this might have been
available in the past. Of the bowls with handles, a plain vessel 2 cm high (Bisson de la Roque 1950:18, pl. XIII:70582 [37:1]) was more shallow than the rest. Rather than a functioning as a bowl, the shape of the vessel suggests it was more suitable as a serving dish. The elevated handles would facilitate the lifting of the bowl from the top. Perhaps the ceramic bowls were intended for the same purpose.

Ceramic Examples: Two elaborate ceramic examples of bowls with horizontal handles rising above the rim were found at Phaistos (Levi 1976, pls. 122b and XLIIIb [37:4]; 122c and LXVII [37:5]). One bowl at Phaistos only had one handle. The inside of this bowl was decorated with painted figures of women dancing around a central female figure (Levi 1976, pl. LXVIIa, fig. 161[37:6]). The figural decoration is similar to the decoration of a painted stand (STD 4) found in the same room (Levi 1976, pl. LXVI [53:19]). Again, inside the bowl of the stand are two smaller female figures seemingly dancing around another taller figure. More women surround the base of the stand. The main figure may be a goddess surrounded by her votaries (Gesell 1985:60). The stand and the bowl are possibly part of one set. Around the edges of the stand’s bowl and base are two bands of white circles punctuated by red dots. Similar in concept to the cut-out rims around the edges of the bowl and foot of two other well-known stands (STD 1, STD 3) from Phaistos (Levi 1976, pls. LXXIV, XXVIIa; see also 3.II.3 Cut-out Petal Rims), perhaps the bands around the stand with the women figures [53:19] represents a “metallic” added band of silver/gold wire with copper rivets (see 4.IV.1 Bands with Dots).

The ceramic bowls with two handles from Phaistos were highly decorated on the inside and outside. One bowl was bisected on the inside by a red-cross motif, each section filled in by a large foliate band and white dots (Levi 1976, pls. XLIIIb, 122b

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9 The Tôd bowls were found in a crushed state. Therefore, the reconstructed shape of the silver bowls today may have once had a slightly more concave appearance to match the shape of the ceramic bowls (Bisson de la Roque 1950).
On the outside, vertical white “crescent shapes” run around the body on a black ground. The same white motifs adorn the outside of the other bowl (Levi 1976, pl. 122c and LXVII [37;5]). These are not so regularly spaced. On the inside of the second bowl, flower motifs extend from a cruciform shape made up of lozenges. The spaces in between are filled in with spirals, dots, and painted lines. The “white crescent shapes” on the exterior of the two bowls are reminiscent of the decoration on a pyxis (PYX 1) with the same decoration (Levi 1976, pl. 117k–l [14;2]). Seen from the underside, the radiating “white crescents” are very similar to the decoration of the molded torsional flutes on the underside of a basin from Knossos (Evans 1935, fig. 89 [14;1]). When the two are compared, the inspiration for the painted white motifs becomes apparent. The underside of the basin was molded into torsional flutes and painted white (see under BAS 1). The effect of light falling on the flutes (see Davis 1977, fig. 58 for a black and white photo), highlighting the ridges and leaving the recesses dark, is similar to the effect of the alternating white and dark torsional patterns on the ceramic pyxis. The inspiration for the molded flutes on the basin was probably a metal bowl with torsional flutes, similar to the ones from Tôd (Bisson de la Roque 1950, pl. V:70509 [14;3]; Warren and Hankey 1989:132–133, pls. 9C–D). Given the similarity in effect between the molded flutes of the basin and the painted torsional pattern on the pyxis, perhaps the white “crescent shapes” on the other two ceramic bowls were also meant to evoke metallic fluting. Certainly, vertical flutes were present on the Tôd bowls, even on some of the bowls with handles (see [37:2–3]). The spacing of the white motifs on the ceramic bowls is even as wide as the flutes on the silver vessels (e.g., Bisson de la Roque 1950, pl. XIV:70593 [37;3]). Thus, even though the painted motifs on the inside of two of the bowls may have been drawn from the standard ceramic repertoire of the time, the addition of the white “crescent shapes” on the outside of the bowls may have been a way of evoking a metal quality.
Date and Distribution: The examples of the bowls with two handles from Phaistos were found in MM II (Fase Ib) contexts. One of the finely decorated bowls with horizontal handles painted with “white crescents” was found in room LXXXV of House C (Levi 1976, pl. 122a, 122c and LXVII [37:5]), whereas another was found in the “Grande Frana” (Levi 1976, pl. 112b, XLIIb [37:4]). The special bowl with one handle and painted figure of a goddess—as well as the stand that probably belonged with it—was found in the Southwest Quarter of the palace, in rooms LIII–LV, whereas the pyxis with the painted torsional decoration was found in room IL next door. All of these vessels were also assigned to MM II (Fase Ib).

Discussion: The bowl and the stand with painted women figures were unique vessels. Perhaps they were meant as a set or, perhaps, they were meant for the same function—as presentation/serving vessels. Certainly, just as the plain shallow silver bowl from Tôd (Bisson de la Roque 1950, pl. XIII:70582 [37:1]) was too shallow to function as anything other than a presentation vessel or a serving vessel for larger foodstuffs, the ceramic bowls were probably meant as vessels for presentation of foodstuffs as well. Just like the basins at Knossos (see under BAS 1) may have been placed on a stand for support, perhaps this type of bowl was meant to be placed on a stand as well. The high handles meant the vessels could be lifted from above or passed around a group of people.

Given the horizontal handles rising above the rim and the limited number of examples of ornately painted ceramic copies, it is possible that these bowls were *imitations* of the shape of imported metal bowls. The origin of the metal bowls was possibly Anatolia, possibly the same source for the Tôd Treasure (see more under 6.II.2 Origins. Anatolia and the Near East). A ceramic bowl of the same type found at Phylakopi (NAM 5740b) may lend support to the notion that a trade in silver vessels was coming out of Anatolia. This latter bowl is painted on the interior in a manner that may also be emulative of metal: in the center is an area of spirals surrounded by a circle.
Around this circle is another wider circle filled in with “elliptical” shapes. The shapes are similar to the painted “white crescent” shapes seen on the bowls of this type from Crete. Both the “elliptical shapes” and the “white crescents” are probably referencing the same thing—either fluting or repoussé on the metal examples.

BWL 3. Deep globular bowl with two vertical handles

_Description_: Relatively deep bowl (deeper than it is wide) with globular body and slightly flaring neck. Two small vertical loop handles attached below the rim and on the shoulder. Flat base.

_Metal Examples_: No exact metallic equivalent of the deep ceramic bowls with handles have been found in the Aegean, although Davis does suggest that a cup with two handles from Shaft Grave V at Mycenae that looks like a kantharos may have been a later version of this bowl (Davis 1977:161–162, no. 48, fig 126 [37:7]). The kantharos is an Anatolian shape, and it is possible that earlier bowls with two vertical handles also came from this region. Metal bowls from Middle Bronze Age contexts in Anatolia have been found that do bear a similar appearance to this ceramic bowl. The two bronze bowls from Kültepe are relatively deep and share the same general body shape (Emre 2008, figs. 3–4 [37:8–9]). The metal examples are, perhaps, a little sharper in profile, but softer, more rounded profiles are easier to execute in ceramic. The overall size and the constricted neck/flaring rim are alike, however. The metal bowls from Kültepe have a slightly raised base and do not have handles. In this respect, they are not exact parallels for the ceramic examples, but one does get a sense of what a metal bowl of this sort may have looked like. Whereas the bowls from Anatolia are made from bronze, it seems likely that silver bowls of this type were also manufactured. Two silver kantharos (bowls with high loop handles) were found at Tôd (Bisson de la Roque, 1950, pl. XIV:70590, also Davis 1977, fig. 52 [37:10]; Bisson de la Roque, 1950, pl. XIV:70591 [37:11], also Davis 1977, figs. 53). The smaller
kantharos [37:10] has the proportions of the ceramic examples (deeper than wide), and both the silver bowls have globular bodies and slightly flaring rims. The prototype for the ceramic bowls may have been a deeper version of these silver vessels. High loop handles were not often translated into pottery, due to the fragility of these features in ceramic (see 3.II.5 Ribbon Handles). This may be one of the reasons the handles on the ceramic copies were not the same as on the silver bowls.

Ceramic Examples: Nine deep bowls with vertical handles were recovered from Phaistos. One of these (Levi 1976, pl. 121b [37:12]) is smaller than the others and has the suggestion of a ring base. For these reasons, this bowl is more akin to the bronze bowls from Kültepe than the other ceramic bowls [37:8–9]. One bowl (Levi 1976, pl. 120a [37:13]) has two flat clay rivets at the join between the handles and the rim, suggesting a metallic prototype. The handles on the bowl with clay rivets are fashioned to resemble metallic handles; the lower ends of the handles are raised and thickened (so-called “laid-on” handle appearance)—what one would expect of a metal handle riveted at this point. Two incised lines run around the shoulder of this bowl, perhaps a clue to the appearance of the origin metal model.

The ceramic examples of this type of bowl were either covered in a dark monochrome paint/slip (Levi 1976, pl. 121a, 121b, 121e), a white triangle (Levi 1976, pl. 121h), a trickle pattern (Levi 1976, pl. 121g), alternating swathes of black and reserved (Levi 1976, pl. 120c), a dark circle superimposed with a white floral band (Levi 1976, pl. 120d) or starburst (Levi 1976, pl. 120b, 120e [37:14]). The painted white crescents comprising the floral band and the starburst recall the white crescents of the pyxis with painted torsional flutes (PYX 2; Levi 1976, pl. 117k [14:2]) in the regular spacing of the motifs and the effect of the play of dark on light. Perhaps these motifs are meant to evoke repoussé or fluting work on metal vessels.
Date and Distribution: All of the bowls of this type were found at Phaistos in MM II (Jase Ib) contexts. Two were found in House C, in rooms XCIV and XCV, respectively (Levi 1976, pl. 121b, 121e), one in the “Grande Frana” (Levi 1976, pl. 120b), one from Grotta M (Levi 1976, pl. 121h), two from Chalara Nord, room ζ2 (Levi 1976, pl. 120a [37:13], 121g), and three from the Southwest Quarter of the palace: two from the sottoscala of rooms LIII–LV (Levi 1976, pl. 120c, 120d) and one from room 11 (Levi 1976, pl. 120e). The most ornately decorated bowls both came from the palace, whereas the bowl with the clay rivet was from Chalara Nord room ζ2 [37:13]. This room distinguished itself from its surrounding rooms by its red stuccoed floor and the alabaster slabs found against the south wall (Levi 1976:638–639), perhaps indicating that this room had a special function.

Discussion: The shape of the deep bowl with two handles may have originated in Anatolia. The globular body, flaring rim, and two handles are features of metal shapes from Anatolia and Tôd. The kantharos shape from Tôd has been called Anatolian, and bowls with two handles (high loops mainly) are more at home in this region (Rutter 1979:8, fn. 18; 1983:22; Podzuweit 1979:55 and notes 331–335, 103 and notes 984 and 986). The Tôd collection may ultimately have come from Anatolia as well (see 6.II.1 Origins. Anatolia and the Near East). The ceramic bowls may have been adaptations in Crete as the handles appear to have been modified for ceramic use. Ultimately, the clay rivets on the bowl(s) from Phaistos indicate that the prototype for the shape was probably metallic.

BWL 4. “Square” bowl with four lobes

Description: Bowl with round base, straight sides, and four lobes, which give the vessel an overall “square” shape. Lobes are created by four folds of the rim.
Ceramic examples: No metallic examples of this type of bowl have been found. However, the “sharpness” of the folds, the fine fabric, the symmetry of the lobes and the decoration on the vessel, and the uniqueness of the shape lend a “metallic” character to the bowl. The lobes are actually fragile and, thus, detrimental to the structural integrity of the bowl. This provides another indication that the form is not natural in clay. A fragment of a stone cup was found with an in-turned lip, similar to the ceramic example (Warren 1969:111, P603, “moustache cup” [38:1]). Only one “lobe” of the stone bowl was found; therefore, it is possible that the bowl also had either two or four lobes.\(^\text{10}\) In describing this stone cup from Knossos, Evans compares it to an Early Dynastic cup from El Kab in Egypt (1928:57–58, fig. 27) and states that “it seems probable that the form originated in copper-work, the ear-shaped projections of the rim being folded inwards…” (1928:57). The lobes, according to him, would have been useful in filtering some beverage containing floating objects (hence, the term “moustache cup” to protect one’s moustache). Both the stone and the ceramic bowls may have had a metallic antecedent. The rosette design on the interior base of the ceramic bowl is akin to the rosettes found on the base of some silver cups from Tôd (e.g., Bisson de la Roque 1950, pl. XVII:70620 [14:10], 70627 [15:7], 70629 [15:8], pl. XVIII:70630 [15:9]), and the sharp lobes are akin to other ceramic vessels with either lobed or crinkled rims (see 3.II.3 Multiple-Lobed and “Crinkly” Rims).

Only one ceramic example of this type of bowl was published, from Phaistos (Levi 1976, pl. XXI [38:2]). It is decorated on the interior by a red rosette, which has red and white “tasseled banners” extending from each petal. Around the exterior is a repeated yellow “banner” motif, outlined in red and white. The decoration is symmetric and repetitive, with simple, large blocs of color. This is characteristic of inlay work (see 4.VII

\(^{10}\) The illustration in Warren 1969, P603 is mostly reconstructed. It is possible that more than the vessel had more than two lobes.
Inlay and Enameling), but whether the potential original model would have been inlaid is difficult to say without an extant example.

*Date and Distribution:* The bowl was found in the “Grande Frana” deposit, stylistically dated to MM IIA (*Fase Ib iniziale*). This may be an imitation.

**BWL 5. Shallow bowls with lobes or crinkly rims**

*Description:* A number of wide, shallow bowls, sometimes footed, with two or four handles. The rim is either lobed or crinkled. Horizontal handles attached at the rim.

*Metallic examples:* No extant metal examples of shallow lobed bowls of this sort have been found to date. The shape of the footed examples recalls that of tall carinated cups (*CT CUP*, but more squat), but the bowls without bases are more akin to some extant bronze shallow dishes/bowls with two upright handles (BWL 2) (e.g., Matthäus 1980, pl. 13, esp. no. 111). It may be that these cups are more ornate versions of these latter vessels.

*Ceramic examples:* Three ceramic examples come from Knossos and two are from Phaistos. Two from Knossos are footed with two upright handles (MacGillivray 1998, pls. 1:50, 32:50, and 37:50 [38:4]; Evans 1903, pl. II.2a–b [38:3], also Evans 1935:134, fig. 102, also MacGillivray 1998, pl. 135:926). Both examples have two lobes opposite of the handles. Another bowl from this site is incomplete, therefore it is difficult to assess the nature of its base, but it does have an upright horizontal handle, rising from a crinkly rim. Even though this vessel is not whole, is possible that this bowl belongs to this group of bowls (MacGillivray 1998, pl. 24:662). The decoration of one of these bowl [38:4] is evocative of the same metal decorative techniques used on some straight-sided cups. The exterior has a band of white dots framed by two orange bands running around the upper shoulder, while around the interior of the rim is another white band superimposed with
red dots, which is outlined by a band of orange and a row of white dots. These may represent added (or inlay) bands of circle cut-outs and copper strips (see 4.IV.1 Bands with Dots). The interior has “ten small tiny pierced buttons arranged in a circle around a central bowl” (MacGillivray 1998:124, no. 50). It is not clear what the function of these “buttons” may have been. The second whole bowl from Knossos [38:3] is similar to the latter in having a foot, two lobes opposite the handles, and two upright handles. This time, small crinkles flank the lobes on either side. The bowl has raised barbotine barbs painted red and outlined in white dots as well as barbotine rows at angles. The symmetrical shape of the cup may prove to be metallic, but the decoration, at this time, is not known to be metallic. The third bowl from Knossos is fragmentary, but appears to have had white dots on a dark ground and a rosette pattern composed of alternating small white dots and larger orange dots (MacGillivray 1998, pl. 24:662). The rosette pattern is reminiscent of the interior of one of the bowls with folded rim from Phaistos, which also has an orange flower at the center and white dots surrounding it (Levi 1976, pl. XIIIa [39:5]).

Two shallow bowls with lobed/folded rims were found at Phaistos (Levi 1976, pl. XIIa [38:6], pl. XIIIa [38:5]). The bird’s-eye view of the first bowl [38:6] is similar to the latter example from Knossos [38:3]; it has two lobes opposite the raised handles and crinkles on either side of the lobes. It is just lacking a foot. The body is painted in red flower-crosses and orange dots and vertical barbotine lines on the exterior and orange dots and white crosses on the interior. The fineness of the walls and handles and the shape lend itself to metal imitation. The other example from Phaistos is more unusual in that the “crinkles” are executed by folding over the rim toward the interior. Lobes created in this fashion are also seen on the square four-lobed bowl (BWL 4) from Phaistos (Levi 1976, pl. XXI [38:2]) and on the stone “moustache cup” (Warren 1969:111, P603 [38:1]), but it is still rare. Just like on one cup from Knossos [38:4], the interior has raised
features. In this case, raised dots surround a flower (with five petals) within a circle of white dots. The flower motif is repeated (but with only four petals) around the interior of the body. The motif is outlined in white dots. The exterior of the cup is adorned with barbotine barbs painted white and white dots. A spout with strainer and two upright handles are assumed in the reconstruction. The interior decoration is reminiscent of inlay work (see 4.VII Inlay and Enameling), and the shape may be a hybrid or adaptation of another bowl shape.

Date and Distribution: All the examples cited here range in date from MM IB to MM IIA. The bowls from Knossos come from the “Early Floor beneath the room of the Olive Press” (MacGillivray 1998, pls. 1:50, 32:50, and 37:50 [38:4]), the “Early Chamber beneath the West Court” (MacGillivray 1998, pl. 135:926 [38:3]), and the “SW Room of the Royal Pottery Stores” (MacGillivray 1998, pl. 24:662). The bowls from Phaistos both come from the Southwest Quarter of the palace. One was found in room IL (Levi 1976, pl. XIIIa [38:5]; Fase Ia/Ib iniziale), while the other was found in room LXV (Levi 1976, pl. XIIa [38:6]; Fase Ia [38:6]). It may be that a metal original was imported/manufactured in MM IB, copied in slightly varying ways, then discontinued, as the shape does not seem to continue beyond MM IIA. This type of bowl may have been used as a presentation vessel. It is clear from the decoration on the inside that the interior was meant to be seen. The two earliest bowls, dated to MM IB (Levi 1976, pl. XIlia [38:6]; MacGillivray 1998, pls. 1:50, 32:50, and 37:50 [38:4]), are the only ones with lobed rims. This is the same date as most of the examples of lobed kantharoi on Crete (MM IB). Perhaps the shallow bowl with lobed rims was influenced in some manner by imported Anatolian kantharoi. The “crinkled” rims may be later adaptations of the lobed original.
BWL 6. Pedestaled bowl

Description: Carinated bowl with rounded shoulder that tapers to a straight, tall pedestal. Tall flaring neck. Possibly one (or two) handle(s).

Metallic examples: Although no metallic examples have been recovered, several bowls of this type were depicted in a number of Theban New Kingdom tombs in Egypt in a period contemporary with the Late Minoan on Crete11 (Vercoutter 1956; Wachsmann 1987; Laboury 1990). The scenes in the tombs depict foreigners bringing “tribute” to the Pharaoh. On some panels, bowls of this type are being carried by Keftiu—generally considered to be Minoans—and, on others, they are associated with Syrian porters (Vercoutter 1956:346–347), although in most cases, most of the bowls with handles are carried by the Aegeans (Vercoutter 1956:43–44). The bowls are painted yellow and/or white (sometimes with blue) and are thought to represent gold, silver, and electrum objects (Vercoutter 1956:341–347).12 Nearly all the bowls are depicted with stems sticking up from the rims. The stems terminate in flowers or buds (Laboury 1990: pl. XXVII top row).13 Only a few of the bowls have two vertical handles, whereas the majority do not have any.

11 This bowl type appears in the tombs of Senenmut, Useramon, Menkhererraseneb, and Rekhmire (Laboury 1990:105 and pl. XXVII top row).
12 The blue substance is thought to be encrusted lapis. This is possible, but the Minoans may have been experimenting with enameling at this time, and the blue may have been another substance (see more under 4.VII Inlay and Enameling).
13 Hayes (1959:209, fig. 121) considers these floral decorations as the representation of actual flowers placed in the bowls. It is also possible that the stems were also made from metal. Boyd Hawes reports that metal animal figurines in the shape of a hare, lizard, goat, and cat’s head vases were found at Gournia, the cat matching similar ones at Palaikastro and Zakros (Silverman 1974:12–13). Two of these, the small wild goat heads, are said to have once been attached to vases (Silverman 1974:12–13). Could these have been in the shape of pins?
The origin of the bowl shape was likely Syrian or Syro-Palestinian. Not only was the name given to the bowl type by the Egyptians borrowed from West Semitic (Vercoutter 1956:342), but ceramic vessels from the same family as this bowl (i.e., having the same profile) were found at Kamid el-Loz, for example (Hachmann 1980, pl. 33:3; 1982, pl. 23 grave 97, no. 2), and other sites in Syro-Palestine (e.g., Amiran 1970, pl. 27:8–9 from Lachish, Megiddo), indicating that the shape was more at home in this region than in Egypt or Crete. The fact that only one ceramic skeuomorph of this bowl was found in Crete would also suggest that this was not a popular Minoan shape as well. However, due to the fact that they were depicted in tombs being carried by the Keftiu has led to discussions about why the Minoans would have seemingly been associated with this bowl type. Vercoutter suggests that the Keftiu (i.e., the Minoans) had either transported the vessels from Syria to Egypt or that the vessels themselves were made in Crete and were brought directly by the Minoans (1956:347). He prefers the latter scenario as some of the bowls had Aegean-style handles. Wachsmann does not believe that the Minoans would have acquired the bowls from Syria as the assumed sailing conditions during the summer months would have “logically required them to sail with the

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14 At the same site, Aegean wares were found (Hachmann 1980, pl. 24:4, 26, 27:6; 1982, pl. 5:2, 6:1–2), indicating that the Minoans (or the Mycenaeans?) had visited the coast of Lebanon at roughly the same time that the Syrian bowls were being carried to Egypt (Kamid el-Loz is located in the Bekaa valley of Lebanon, not far from Byblos). It is likely that the Aegean wares were trade from Byblos inland.

15 Vercoutter claimed that this bowl type was also manufactured in Egypt (1956:347). His reasoning relies on six examples of depictions of this bowl in “Egyptian” tombs that apparently have no connections with foreigners (1956 nos. 395–399, 403). Three of these bowls were depicted in the tomb of Mery, who was apparently a priest in charge of “divine trésor” (1956:344 nos. 395–397). If he were in charge of the Pharaoh’s treasury, he would surely have also been in charge of foreign tribute, including gold bowls. Another bowl was depicted in the tomb of Nebamun. Apparently, his tomb is known for a scene of a flotilla of Syrians arriving in Egypt (1956:345, no. 398). Again, there is a connection to North Syria. The last bowl is depicted like the others, in the tomb of Puyemre (1956:345, no. 403). Perhaps it was just a copy. It is also possible that these Egyptians were gifted with these objects by the Pharaoh or directly from foreign traders/diplomats.
prominent summer northerly winds directly to Egypt” (1987:65).\(^{16}\) Rather, given the hybrid nature of the bowls (Aegean handles, Syrian shape, and Egyptian details), he attributes the presence of the bowls in the hands of the Keftiu as “due to their transference by the [Egyptian] artists from the source scenes of Syrian tribute and has little to do with...economic considerations...” (1987:65, also see his chapter 2 for a discussion on the “hybridity” of the objects in the tombs).

While Wachsmann may be correct in arguing that the depiction of the bowls displayed signs of hybridity, his assertion that any signs of this hybridity can only be attributed to “confused Egyptian painters” and thus, “economically incorrect,” may, perhaps, be exaggerated, at the very least.

In the Late Bronze Age (and, presumably, to some extend in the Middle Bronze Age as well\(^{17}\)), due to the interactions among the regions of Egypt, Syro-Palestine, Cyprus, the Near East, and the Aegean, many portable luxury objects made of gold, ivory, alabaster, and faience seem to “defy attribution to any one cultural regions because of extensive hybridism in which motifs from multiple regions intermix with one another” (Feldman 2002:6; also 2006). In the 1960s, Smith applied the term “international style” to describe those objects that seem to share a common repertoire of motifs drawn from throughout the Mediterranean and the Near East and whose attribution could not be ascertained properly (Smith 1965:35). This international style he believes emerged as a result of the exchange of gifts between rulers of widely separate states (Smith 1965:97).

\(^{16}\) This need not necessarily be so. The Minoans were capable to hug the coasts of the islands of the Cyclades, the southern coast of Anatolia, and then the coast of Syro-Palestine, just like it seems they have been doing from the EM (Cyclades) and MM (Anatolia and Syro-Palestine littoral) periods.

\(^{17}\) Feldman (2002:6, fn. 2) notes that the “international style” may have begun as early as the 20th century BCE.
In the model proposed here (see Chapter 2), one of the resulting consequences of the emulation of luxury goods (especially if they are foreign goods) is the visible hybridism of the “new” or “foreign” motifs, features, and shapes that arrive suddenly in a society and the already-established shapes/objects that the imports or innovations are meant to replace. In most cases, also, adaptations are made to the object to fulfill specific local aesthetics. In the case of imported vessel shapes, the Minoans tended to add handles to forms that had none (see section 6.IV). Thus, to return to the case of the bowls depicted on the Egyptian walls, there is precedent for the hybridization of emulated goods: the Minoans were fond of adapting a “foreign” shape to their own needs by adding handles; the Minoans were known as master craftsmen whose metal vessels were at the very least exported to mainland Greece, but probably also elsewhere; and the objects found in the Shaft Graves at Mycenae serve as precedent for Minoan-manufactured objects made with Mycenaean tastes and motifs in mind (i.e., for the Mycenaean market). All this makes it plausible that the metal bowls depicted on the Egyptian walls were accurately portrayed and that the Minoans made them (based on Syrian models) and brought them to Egypt, perhaps on commission by the Egyptians themselves.

The shape of the bowl is Syrian, and the Syrians likely brought their own versions to Egypt. These did not have handles—either in ceramic or in the scenes with the Syrian tribute carriers in the tombs. The vases brought by the Keftiu mostly had handles, which may suggest that the Minoans had adapted them to suit their own sense of aesthetics (Vercoutter 1956:43–44). It is not likely that the Minoans used this bowl shape, as it was not a popular ceramic form. Therefore, it seems possible that the Minoans made the metal bowls purposefully for the Egyptian market. This would explain the Egyptianizing details on the bowls as well as the hybrid character of the vessel itself.
Ceramic examples: Only one example of this type of cup was found at Knossos. It was reconstructed from various pieces. The illustration in MacGillivray (1998:134, no. 234, pl. 8:234 and 51:234 [38:7]) reconstructs one handle, although it could just as likely have had one, two, or none. The decoration around the upper part of the bowl seems to be a stylized chain of flowers and lozenges. The lower half of the vessel is decorated with vertical loops with smaller rosettes inside, and the pedestal has painted wavy vertical lines. Although not exactly similar in decoration to the bowls depicted in the Theban tombs, the decoration on the ceramic bowl is still evocative of these presumed metal vessels. The flowers around the neck recall the band of rosettes on some of the Theban bowls (Laboury 1990, pl. XXVII, R22, R23), and the vertical loops and vertical lines on the ceramic bowl are reminiscent of the depiction of gadrooning on the lower half of some of the metal bowls (Laboury 1990, pl. XXVII, O11, M24–26, R22, R23).

Date and Discussion: The ceramic bowl from Knossos was found in the “North-West Pit” underneath the west rooms of the “Northwest Treasury” (MacGillivray 1998:28–29). Most of the pottery was dated to MM IB and MM IIA, although some sherd fragments dating to MM IIB were also found in the same context. The date of the piece is likely MM IB or MM IIA.

5.IV BRIDGE-SPOUTED JARS (BSJ)

A type of spouted jar is known as early as EM II (e.g., Seager 1905, pl. XXXIV:4; Warren 1972a:203, fig. 87, P674, P680, P681, P687, P696; Momigliano 1991:258), but the shape in its typical MM incarnation—ovoid body with two side handles and bridge-spout—is first seen in EM III (Betancourt 1985, fig. 34). Thus, by the MM IB period, the bridge-spouted is an established (dare one say, iconic?) shape popular in the ceramic repertoire. Early in the MM period, there are indications that the bridge-spouted jar was eventually
reproduced in metal,\textsuperscript{18} as evinced by the square handles, clay rivets on the handles (e.g., Pernier 1935, fig. 176; Poursat and Knappett 2005, fig. 17:7), metallic-looking spouts (see under 3.II.6 Spouts and, for example, Banti 1939–1940, fig. 8; Levi 1957–1958, fig. 151a; Levi 1976, pl. 32c), and surface treatments that emulate the decoration seen on other vessels with metallic antecedents. The fact that an essentially ceramic shape by the beginning of the MM period (with possible metallic antecedents in an earlier age) was made into metal probably reflects the fact that the bridge-spouted jar had become an essential element in a typical drinking set (see 6.III.1 Ceramic Vessel Sets).

The overall profile of the bridge-spouted jar is divided between those with an angular shoulder (MacGillivray 1998, fig. 2.15 types 1–2) and those with a rounded, globular shape (MacGillivray 1998, figs. 2.16 types 1–6). In general, the body of the globular types become more elongated and tapered over time, with those dated to MM IIIA sitting on a high foot (Banti 1939–1940, fig. 10; Betancourt 1985:106, fig. 77; Levi and Carinci 1988, pl. 58; MacGillivray 1998:80). The bridge-spouted jars are divided here into types based on shape (BSJ 1 with angular shoulder) as well as decorative techniques (BSJ 2–7).

BSJ 1. Bridge-spouted jar with angular shoulder

\textit{Description:} Bridge-spouted jar with carinated shoulder. Can have either one vertical handle or two horizontal handles. Base is flat or slightly raised. Can range in height from 9–14 cm high, and has a diameter of approximately 10–14 cm.

\textit{Ceramic examples:} No extant metal examples of bridge-spouted jars have been found, but the “angular shapes and flat, metalizing handles…give a metalizing

\textsuperscript{18} MacGillivray (1987:277) states the bridge-spouted jar “is unlikely to have occurred to a craftsman working only in clay designing a vase to pour liquids, but once it appeared it was copied by potters and stone vase makers alike.”
impression” (Walberg 1983:24 about bridge-spouted shapes 145, 146). There is not one type of bridge-spouted jar with carinated shoulder; the shape varies by site. One group, from Knossos (MacGillivray 1998:78–79, fig. 2.15 [38:9]), has a carinated shoulder and two horizontal handles on either side of the body. At Malia, the bridge-spouted jars with angular shoulders still retain the handle opposite the spout and do not have side handles (e.g., Poursat and Knappett 2005, fig. 17 types 4–6, 11 [38:10]). Apparently, the Malia type is specific to the region of Malia and Lasithi (Poursat 1966:547), while the angular jars with horizontal handles from Knossos are limited to this site (MacGillivray 1998:78). One angular BSJ from Phaistos (Levi 1976, pl. 28g [38:12]) is squatter than those from Knossos and Malia and more “boxy.” It has two horizontal handles and a smaller vertical handle opposite the spout.\(^1\) The traditions at each site may perhaps be explained by the local manufacture of bridge-spouted jars (probably made in bronze) at each site.\(^2\)

On most examples of angular bridge-spouted jars, the decoration is monochrome coated,\(^3\) but a few examples exist at Knossos in the “Woven Style,” which is a style of “linear, circular, interlocking and floral motifs in a complexity of designs” (MacGillivray 1998:59, fig. 2.1) that is thought, perhaps, to emulate woven textiles, because the motifs are laid out in symmetrical and measured zones. The examples of “Woven Style” designs at Knossos (MacGillivray 1998, fig. 2.1) include what has been described here as imitations of added bands (MacGillivray 1998, fig. 2.1:2–6, fig. 2.2:1 and 2) or inlay work (e.g., MacGillivray 1998, fig. 2.1:23). All the other simple designs could easily fall

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\(^1\) The angular BSJ at Phaistos was apparently rare. A number of teapots with angular shoulders were found at the site, however, perhaps taking the same role as the jars at the other sites (see 5.XIV Teapots, TP 2; Levi and Carinci 1988, pl. 42).

\(^2\) The regional diversity of “local shapes” may be one of the best ways of identifying localized metal workshops, at least bronze workshops.

\(^3\) One example (MacGillivray 1998, pl. 27:905) is painted with banded lines evocative of stone work. Some examples of these types of bridge-spouted jars were made of stone (Warren 1969), and it appears that there was an interplay between metal, stone, and ceramic with this vessel type.
within these two technical groups as well. Metal work is also regularly spaced, symmetrical, and composed of simple motifs (in the case of inlay work, see 4.VII Inlay and Enameling). It is possible that some of the “Woven Style” designs were inspired by metalwork, even though it is also likely that there could have been some interplay between the designs used in textiles and metal work. The design on one angular bridge-spouted jar from Knossos has zig-zag lines and rosettes composed of a red dot surrounded by white dots (Pendlebury 1939, pl. XVII:2c; also MacGillivray 1998, pls. 2:75, 32:75, and 39:75 [38:11]). Around the rim is an orange band with white dots superimposed (see 4.IV.1 Bands with Dots). One could easily see the flowers as inlaid circles.22 The decoration on the angular BSJ from Phaistos appears to have been a monochrome black color (Levi 1976, pl. 28g [38:12]).

Date and Distribution: At Knossos, the angular bridge-spouted jars fall within a MM IB to MM IIA range. They were found in the “Early Chamber beneath the West Court,” the “Small East Rooms,” the “Royal Pottery Stores,” and the “Early Floor beneath the Room of the Olive Press” (see MacGillivray 1998:24–27, 37–38, 38–39, respectively). The “boxy” jar from Phaistos was found in the “Bastione II” and is dated to MM IIA (Fase Ib iniziale). The jars from Malia, found in Quartier Mu, have been dated to MM II.

BSJ 2. Bridge-spouted jar with gadrooning

Description: Globular bridge-spouted jar with two squared horizontal handles on the side and one vertical handle opposite of the spout. Decoration may be derivative of gadrooning.

22 See also the rosette within a medallion motif found on a sherd of an angular bridge-spouted jar from the Chrysollakos cemetery at Malia (Stürmer 1993, fig. 16.82). See section 4.VII Inlay and Enameling for more on this motif as being evocative of enamel work.
Ceramic examples: The attempt to recreate the effect on gadrooning may perhaps best be seen on an opened-mouth jug (JUG 4) from Phaistos (Levi 1976, pl. 28i [39:2], also Levi and Carinci 1988, pl. 29c [39:2]). It has large, incised, and slightly repoussé petaloid sections running around the vessel, giving it a raised surface. The petaloid motifs are painted red with white outlines. The incising may have been an effort to produce a repoussé effect without using a mold. The slightly raised petal shapes are reminiscent of gadrooning on metal. The painted petaloid motifs on a bridge-spouted jar from Phaistos (Levi 1976, pl. XXXIVa [39:3]), which mimics the petals on the jug with its red petals and white outline, may be an even more derivative form of this technique.

Date and Distribution: The bridge-spouted jar with possible painted gadrooning is dated to MM IIA (Fase Ib iniziale). It was found in the bench in room IL, which formed part of the Southwest Quarter of the palace.

BSJ 3. Bridge-spouted jar with vertical fluting

Description: Globular bridge-spouted jar with squared handles. Vertical lines or vertical repoussé grooves are evocative of vertical fluting.

Ceramic examples: A series of bridge-spouted jars from Phaistos are painted in thick white vertical lines (Levi 1957–1958, figs. 153e [39:4], and fig. 154a top [39:5]; Levi 1976, pls. 42a, 104a [39:6], 107g [39:7]). The decoration is reminiscent of the painted lines on a series of carinated cups (CS CUP 2), some two-handled bowls (BWL 2), some semi-globular cups (CS CUP), and a few tumblers (TMB 2), which may also be representing vertical fluting (see pl. [16]). The spacing and thickness of the lines are similar to the size of most of the vertical flutes on the silver bowls from Tôd (e.g., Bisson de la Roque 1950, pl. XV:70601 [15:5] and 70605 [15:6]). Two (or three) of these jars may
have been identical (Levi 1957–1958, figs. 153e [39:4], and fig. 154a top [39:5]).23 One bridge-spouted jar has S-shapes in between each line (Levi 1976, pl. 104a [39:6]), just as on the straight-sided cup with a double row of arcades and a repoussé mid-rib painted over with a foliate pattern (Evans 1921, fig. 183a.4 [17:12]). The jar also has a red band around its middle, painted with white slanted lines and outlined in white dots. If this vessel is imitating one in metal, then the central band may represent a (ridged?) added metal strip. One bridge-spouted jar had repoussé flutes (Levi 1976, pl. 107g [39:7], also Levi and Carinci 1988, pl. 57f [39:8]).24 The flutes are evenly spaced and of the same width as, for example, the alternating black and white bands on some painted bridge-spouted jars (Levi 1957–1958, figs. 153e [39:4]) and the width of the flutes on the metal bowls from Tôd. The repoussé flutes are reminiscent of the flutes on a stone rhyta (Warren 1969:85, P468), indicating that larger metal vessels may also have been fluted as well as the smaller tablewares.

Date and Distribution: Most of the bridge-spouted jars with vertical painted lines are dated to MM IIA (Fase Ib iniziale), with one exception. This is the jar with repoussé flutes, found in room XCIV of House C (Levi 1976, pl. 107g [39:7–8]), attributed to a MM II context. Given the MM IIA context dates of the other jars, it is suggested that this jar should also be dated to this period rather than MM IIB. The jar with painted vertical lines and the S-shapes comes from the bench in room IL (Levi 1976, pl. 104a [39:6]), and other examples were found in “Bastione II” (Levi 1957–1958, fig. 153e [39:4]) and room CVII of House L on the Acropoli Mediana (Levi 1976, pl. 42a).

23 Only fragments are seen in the illustration of Levi 1957–1958 fig. 154. The dark lines on the fragments of the right are lighter than the fragments of the rim and handles. This may indicate another vessel. Apparently, both of these are different from the example in Levi 1957–1958, fig. 153e, which is complete.

24 The decoration on this bridge-spouted jar are vertical bands of pendant semi-circles. One wonders if added bands of semi-circles could have been added to vessels with flutes or whether the two decorative surface treatments were conflated on one vessel.
BSJ 4. Bridge-spouted jar with horizontal ridging

Description: Globular bridge-spouted jar with squared horizontal handles. Horizontal sectioning suggested by either repoussé ridges (“hammered”) or incised lines. As it is difficult to determine whether the incised bridge-spouted jars are just derivative versions of “hammered” examples, they are included in this group (see 4.III Hammering for more on this technique).

Ceramic examples: Four examples of bridge-spouted jars with widely-spaced horizontal ridges are known from Knossos (MacGillivray 1998, pl. 80:422) and Phaistos (Levi 1952–1954, fig. 109e [39:10]; Levi 1957–1958, fig. 119 lower right; Levi 1976, pl. XXXIXd [39:9]). The repoussé ridges on one example are particularly pronounced (Levi 1976, pl. XXXIXd [39:9]), whereas the ridges on the other three are suggested by slight indentations and incising on the surface. The ridges on the jar with the pronounced ridging divides the surface of the vessel into sharply delineated horizontal sections. In metal, this effect would have been created by hammering out the vessel into flat sections divided by sharp carinations. It is possible that the sectioning of this jar into horizontal sections is the equivalent of the vertical fluting on another bridge-spouted jar (Levi 1976, pl. 107g [39:7], also Levi and Carinci 1988, pl. 57f [39:8]). In addition to the horizontal ridging apparent on this “hammered” jar, the jar was also painted. Each section was decorated with bands of the same repeated design of two linked white circles enclosing “heart-shapes” divided by orange dots with a red center. The motifs are simple and repetitive. The motifs would be good candidates for inlay work (see 4.VII Inlay and Enameling). If indeed this bridge-spouted jar is a imitation of a metal prototype, the flat sections on the original would have provided better adhesion for the inlay pieces than a convex profile. Of course, the painted decoration may just from the potter’s imagination as well.
In addition to these three bridge-spouted jars, which resemble each other, another jar has ridged sections, but these ridges are more closely-spaced than on the other “hammered” jars (Levi 1976, pl. 107e [39:11]). Each ridge is painted with a band of small white dots. The lower section of the vessel has white swirling motifs. If this bridge-spouted jar were, in fact, modeled on a metal prototype, perhaps the painted dots represent added strips of metal with inlaid dots (or rivets), or perhaps the surface of the vessel was just fluted and the painted decoration was just meant to highlight the ridges. Even tighter still are the ridges on another possible bridge-spouted jar from Phaistos (Levi and Carinci 1988, pl. 60h). The vessel is not complete (it could be a teapot), but it clearly shows fine horizontal ridging around the whole body.

In addition to the bridge-spouted jars that appear to have “hammered” sections, another set of bridge-spouted jars have localized bands that may represent bands of horizontal ridges. The ridges on these jars are generally closely-set and rendered by incising the clay surface (Levi 1976, pl. 112k [39:12]; Levi 1957–1958, fig. 70g [39:13] and Levi and Carinci 1988, pl. 43e), and, perhaps, occasionally by paint (Levi 1957–1958, fig. 147B top [39:14]). The raised decoration on the two jars with incised lines [40:12–13] is reminiscent of the added metal band around the shoulder of a jar from Dendra (Matthäus 1980:189, pl. 34:284 [21:11]). The added band is decorated with fine horizontal ridges. Perhaps the incised ridging on the bridge-spouted jar is meant to evoke an added band with the same decoration. The ridging on the other examples appear to be concentrated in square “patches” around the the shoulder and spout of the jar (e.g., Levi 1957–1958, fig. 147B top [39:14]). Perhaps, if this represents a metallic technique, the surface of the metal vessel was scored by incised lines or highlighted by sections of repoussé lines.

*Date and Distribution:* Most of the bridge-spouted jars with horizontal ridges or sections are dated to MM II (Fase Ib), with the exception of the jar from Knossos (MacGillivray
1998, pl. 80:422). This vessel, with slightly incised lines, was found in the “West Polychrome Deposit,” which was a mixed context with pottery mainly stylistically dated to MM IIB–IIIA (MacGillivray 1998:33–34). The “hammered” angular bridge-spouted jar with painted motifs [39:9] was found in room LXXXV from House C. One example with localized ridging was found from the same House (Levi 1976, pl. 112k [39:12]). The rest were found in the Southwest Quarter of the palace, in particular, in rooms, LII, LXV, and below room 25.

BSJ 5. Bridge-spouted jar with added bands

*Description:* Globular bridge-spouted jar with square horizontal handles. Decoration that emulates the addition of ornamental metal bands.

*Ceramic examples:* All of the bridge-spouted jars with decoration that seems to be imitating ornamental metal bands have the same bands as those seen on certain straight-sided cups (SS CUP 1, SS CUP 5, SS CUP 6), carinated cups (CS CUP 4), and some semi-globular cups (SG CUP 5). Just like the ornamental bands on some later bronze jars (e.g., Matthäus 1980, pls. 33–34 [21:9–19]), the ornamental bands on the bridge-spouted jars may have provided stability and strength to the vessel as well as covering a join and decorating the vessel. The types of painted bands on bridge-spouted jars include bands with dots and linked dots, chevrons and fluting, and bands with S-shapes, and foliate designs. These bands may have accompanied by repoussé spirals as well (see 4.IV Ornamental Bands).

A number of ceramic bridge-spouted jars with ornamental bands with dots were found at Knossos. Some of these bands featured superimposed dots (MacGillivray 1998, pls. 15:383 and 76:383 [39:15], pls. 28:931 and 136:931 [39:16], pls. 28:947 and 139:947 [39:17]), whereas another featured linked dot bands (MacGillivray 1998, pl. 52:203; pl. 56:214; Levi 1957–1958, fig. 121 left bottom; Levi 1976, pl. LXI). The dots, mainly
superimposed on an orange band or contained within two orange strips, may represent rivets, embossed circles, or metal cut-outs. The white dots painted on one jar (MacGillivray 1998, pls. 15:379, 62:379, and 75:379 [26:3]) seem more like embossed strips, and the row of dots on another (MacGillivray 1998, pls. 15:382 and 76:382 [26:13]) resembles the impressed circles as seen on the silver cup from Tôd (Bisson de la Roque 1950, pl. XVIII:70630 [15:9]). On another set of bridge-spouted jars, the ornamental bands are secondary to the main decorative motif. A linked dot band features on the bridge-spouted jar with possible gadrooning motif, for example (BSJ 2; Levi 1976, pl. XXXIVA [39:8]).

A few bridge-spouted jars have slanted lines or S-shapes over a red band (e.g., Levi 1976, pl. XXXIIIb [40:1]; Levi 1976, pl. XXXVIIIb [40:2]). This may represent fluting or some sort of incising in the band (see 4.IV.2 Bands with Fluting and 4.IV.3 Bands with S-shapes).

On some jars, the slanted lines are very close together or are arrayed into a chevron pattern (e.g., Levi 1976, pl. 105d [40:3]). These slanted lines are confined within broad bands. It is possible that these bands are representing bands of fluting, as seen for example on the added metal band around the shoulder of a jar from Sellopoulou, near Knossos (Matthäus 1980:189, pl. 33:282 [21:10]). The bride-spouted jar with the repoussé band of chevrons around the shoulder perhaps gives the best idea of how these types of bands would have looked on a metal example (Levi 1976, pl. XXXIIIId [40:4]).

Bands with foliate designs (e.g., MacGillivray 1998, pls. 15:379, 62:379, and 75:379 [39:18]) may once have originated as triangular cut-outs arranged in strips (see 25

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25 What appears to be a teapot with extravagant spout (Banti 1939–1940, fig. 8 [27:14]) from Hagia Triada (?) also has two rows of incised chevrons around the shoulder. If these are indeed referencing added bands, this technique might be pushed back to MM IIA, the date of comparable teapots from Phaistos (cf. Levi and Carinci 1988, pl. 42).
4.IV.4 Bands with Foliate Designs. One good example of what this strip may have looked like is provided by a bridge-spouted jar from Knossos (MacGillivray 1998, pls. 28:931 and 136:931 [39:16]). Over time, the foliate band may have become more naturalistic looking (Evans 1921:269–270, fig. 200 [26:8–12]). Examples of this foliate band includes three jars from Knossos (Mackenzie 1903, fig. 5 [40:5]; MacGillivray 1998, pls. 15:382 and 76:382 [40:7]), and one jar from Phaistos (Levi 1976, pl. 110f [40:6]).

**Date and Distribution:** The bridge-spouted jars with painted added bands span the MM period. Some of the earliest fall within MM IB to MM IIA, such as a couple of bridge-spouted jars at Knossos, which were found in the “Early Floor beneath the Room of the Olive Press.” This includes the jar with the example of the “early” foliate band in the shape of triangular cut-outs (MacGillivray 1998, pls. 28:931 and 136:931 [40:16]) and another jar with well-defined orange band and dark circles (MacGillivray 1998, pls. 28:947 and 139:947 [39:17]). The jar with possible evidence of gadrooning and a well-defined band around the rim (see BSJ 2) found within the bench of room IL at Phaistos around the rim (Levi 1976, pl. XXXIVA [39:3]), dated to MM IIA (*Fase Ib iniziale*), has a band composed of two strips of orange enclosing a series of white linked dots. It too looks “true to life.”

Another set of bridge-spouted jars with bands are dated to MM II (*Fase Ib*). This include a jar from room XCIV in House C at Phaistos with a band of S-shapes (Levi 1976, pl. XXXVIIIb [40:2]). Two jars were found in the Southwest Quarter of the palace, one from room IL (Levi 1976, pl. XXXIIIb [40:1]) and one from room LIII (Levi 1976, pl. 105d [40:3]). These jars have orange bands with S-shapes or chevrons. The jar with repoussé chevron band was found in the exterior courtyard of the Tomb at Kamilari (Levi 1976, pl. XXXIIId [40:4]). It too has an undefined MM II date.
The bridge-spouted jars with the latest dates are found both at Knossos and Phaistos. The jars from Knossos were mainly found in the “West Polychrome Deposit” (MacGillivray 1998, pls. 15:379, 62:379, and 75:379; pls. 15:382 and 76:382; pls. 15:383 and 76:383). These are dated to MM IIB–IIIA. The decoration on these jars appears to be more derivative examples of the banded decoration on the MM II examples.

Thus, it appears that metal bridge-spouted jars with added bands first appear by MM IB–MM IIA. The bands on these vessels look “true to life.” By the MM IIB period, it appears as if many band motifs have entered the ceramic repertoire and were used without much reference to immediate metal predecessors. By this time, most bands are likely derivative, although there might be exceptions. For example, one bridge-spouted jar from the “West Polychrome Deposits” at Knossos (MacGillivray 1998, pls. 15:383 and 76:383) has a band of enclosed dots that looks “true to life.” The WPD is generally dated to MM IIB–IIIA, but the band is more typical on earlier dated vessels (e.g., MacGillivray 1998, pls. 28:947 and 139:947). Thus, perhaps this fragmentary bridge-spouted jar should be seen as an early survival in this context. On the other hand, large spirals are more typical of vessels found in MM IIB–IIIA contexts (see also Table 4. Repoussé Spirals). Thus, possibly, new metallic models (bridge-spouted jars with repoussé spirals and ornamental bands) inspired new imitations in this “later” period, in which case, the band with dots would look “true to life.”

BSJ 6. Bridge-spouted jar with repoussé work

Description: Globular bridge-spouted jar with decorative elements possibly emulating repoussé work. Square horizontal handles.

Ceramic examples: Besides the ceramic examples of bridge-spouted jars with vertical flutes (BSJ 3), incised ridges (BSJ 4), and repoussé chevron “bands” (BSJ 5), which may
be representing added metal bands or fluting, the other three-dimensional techniques applied to bridge-spouted jars were chasing and repoussé work. Some of the repoussé motifs found on bridge-spouted jars include spirals/concentric circles and dots. Aside from the dots, the repoussé designs were achieved by pushing dies, apparently, from the inside out (MacGillivray 1998:57).

Two bridge-spouted jars, one from Phaistos (Pernier 1935, pl. XXXV [40:6]) and the other from Knossos (MacGillivray 1998, pl. 83:445 [40:7]), may be related in style, even though the former has impressed spirals and the latter, concentric circles. Seen from a distance, the tight, double spirals do appear like concentric circles, and it may be that this latter motif is an alternate of the spiral. The double row of spirals on the jar from Phaistos is very similar to the repoussé spirals seen on a silver bowl from Byblos (Montet 1928:191–193, pl. CXI:748, pl. CXIII:749; also Davis 1977, fig. 64 [40:10]). It may be that this jar—and some cups with similar impressed designs (Pernier 1935, pl. XXIVa [43:7]; MacGillivray 1998:144, pl. 57:237, pl. 83:436–443 [43:8])—were influenced by metal vessels with this kind of decoration. The ceramic vessels are most likely MM IIB in date.

Two semi-globular bowls (Levi 1965–1966, fig. 67 lower, second row, second to the left [43:12]; MacGillivray 1998, pls. 19:430 and 82:430 [43:10–11]) were adorned with repoussé dots. Two bridge-spouted jars are decorated the same way. The two rows of repoussé circles on the cup from Phaistos is akin to one bridge-spouted jar from the same site (Levi 1957–1958, fig. 119, top [40:11]). It too has thin walls and two rows of circles. The circles on the jar are slightly larger than the cup. The cup from Knossos has one band of repoussé dots outlined in white circles. This decoration is also applied to a bridge-spouted jar from Phaistos (Levi 1965–1966, fig. 68a top left [40:12]). The round repoussé dots are arrayed around the rim of the vessel and seemed to be outlined by either incised
or painted circles. This type of decoration may depict direct repoussé work or, more likely, an added band with embossed dots. It is too difficult to differentiate the two in ceramic.

It is likely that bridge-spouted jars were also adorned with other repoussé motifs. Repoussé shells were found on some tall jugs (Levi 1976, pl. 77a [55:19]) and some straight-sided cups (Pernier 1935, pl. XXXb [55:20]; MacGillivray 1998, pls. 19:433 and 82:433 [55:21]). Since repoussé dots and spirals appear on both bridge-spouted jars and semi-globular cups, one would also expect some bridge-spouted jars to have repoussé shells as well.

Date and Distribution: Apart from the bridge-spouted jar from Knossos found in the “West Polychrome Deposit” with impressed concentric circles (dated to MM IIB–MM IIIA) all the other jars with repoussé work come from Phaistos. The bridge-spouted jar with repoussé spirals from this latter site (Pernier 1935, pl. XXXV [40:6]) was found in room XXIII, a series of rooms in the north end of the Southwest Quarter of the palace. It is dated to MM IIB (Pernier’s MM III). Given the date of these vessels, it is likely that the repoussé spiral began in MM IIB. The other vessels with repoussé work are fragmentary, and generally date to within MM II. These are found in various contexts.

BSJ 7. Bridge-spouted jar with chasing

Description: Globular bridge-spouted jar with decorative elements possibly emulating chasing work. Square horizontal handles.

Ceramic examples: Chasing is the metallic technique of incising or engraving designs directly onto the surface of the vessel. In some ways, it is the “reverse” of repoussé, which seeks to push out the surface of the vessel outward. That the techniques were related is perhaps suggested by a ceramic bridge-spouted jar from Phaistos with
impressed rosettes (Levi 1965–1966, fig. 67 lower, top row [40:13]). The rosettes running
around the rim of the jar are very similar in style to the frieze of repoussé rosettes on a
gold goblet from Shaft Grave IV at Mycenae (Karo 1930, pl. CXI, fig. 22; also Davis
1977:204–208, no. 82, figs. 169–171 [40:14]). Both sets of rosettes have the same double
rows of pointed petals and small central circles. It is easy to see from these examples how
Evans (1921:242) or MacGillivray believe that “the stamps used here very likely imitate,
or may even be the same as, those used on metal wares…” (1998:57). Incidentally, the
goblet from the Shaft Graves also has a frieze of bossed circles around the foot that is
similar to the band of repoussé circles mentioned under BSJ 6.

Besides this jar with rosette design, sherds of other bridge-spouted jars have also
been found with impressed designs (e.g., Levi 1965–1966, fig. 67 lower, bottom left
[40:15]). The evidence is fragmentary, but it appears from these sherds that some of the
other impressed designs include zig-zags, squiggly lines, as well as “double loops.” The
same squiggly lines appear on a carinated cup (Levi 1976, pl. 131p), and the “double
loop” features on a straight-sided cup from Phaistos (Levi 1976, pl. 128q). Perhaps the
same dies were used on the bridge-spouted jars and these other vessels.

One reconstructed jar has stamped/incised rows of triangles around the shoulder
(Levi and Carinci 1988, pl. 57b [40:16] and Levi 1976:158, fig. 245 right), but it is
unclear what the origin of this motif may have been. Perhaps the stamped motif is meant
to evoke an added metal band or, perhaps, chasing applied directly to the surface of the
vessel. The same “band” of impressed chasing can be seen on a BSJ 5 jar (Levi 1976, pl.
XXXIIIId [40:4] and some teapots (TP 3; Banti 1939–1940, fig. 8 [28:12]; Levi 1976, pl.
28k [28:13]). Although they have been interpreted here as three-dimensional emulations
of added ornamental bands, the possibility exists that this decoration is meant to represent
chasing directly on the surface of the vessel.
Date and Distribution: The fragments of jars with impressed designs have an indeterminate MM II date (*Fase* Ib). If they are as early as some semi-globular cups with impressed designs (e.g., Evans 1921, fig. 182a, 182b), then the jars may be as early as MM IB–MM IIA. This may help to explain the fragmentary nature of the bridge-spouted jars with impressed motifs in contexts that may contain MM IIA and MM IIB material.

BSJ 8. Bridge-spouted jar with inlay or enameling

Description: Globular bridge-spouted jar with decorative elements that are evocative of inlay or enameling. Squared horizontal handles.

Ceramic examples: Although any motif may potentially be rendered in inlay, it is at times difficult to identify many of these motifs when translated into ceramic. Some of the attributes that may make the identification of inlay work in ceramic easier are reserved, single motifs rendered in “negative space” within a medallion, large figurative motifs, designs with sharp edges, and repeated simple and symmetrical motifs, among others (see 4.VII Inlay and Enameling). Two jars with motifs in reserve include a jar with a rosette (Levi 1976, pl. 110d [41:1]) that resembles the rosette on a semi-globular jar from Knossos (Evans 1921, pl. IIa; MacGillivray 1998, pl. 103:617 [33:12]), and a jar with a reserved cross motif within a white medallion (Levi 1976, pl. XVIIIa [41:2]). Although not executed in reserve, the single rosettes or crosses within larger circles may also be referencing inlay work (Levi 1976, pls. 28b, 107h [41:3], 108h; MacGillivray 1998, pl. 75:378), but these may be derivative of the reserve motifs. The same may be true for the large, repetitive rosettes on another bridge-spouted jar from Phaistos (Banti 1939–1940, fig. 9b), which matches the decoration on a conical goblet/rhyton from Knossos (MacGillivray 1998, pl. 51:227).

Although difficult to prove, it may be that jars that depict large, single motifs with simple, symmetrical designs may also be imitating inlay work. These include jars with
large cross shapes (some rendered in “negative”) (Levi 1976, pl. 107c [41:4], 110l [41:5], 112c), large motifs of symmetrical plants (MacGillivray 1998, pl. 30:1002 and 149:1002 [41:6]; Levi 1976, pl. 104b), rosettes and banners (Levi 1976, pl. XIXb [41:7]) or symmetrical designs of octopi (Banti 1939–1940, fig. 9c; Levi 1976, pls. XXXVIa, XXXVIb [41:8]), for example.

Date and Distribution: The bridge-spouted jars with possible inlay motifs from Phaistos were found in contexts dated to MM IB (Fase Ia), MM IIA (Fase Ib iniziale), and MM II (Fase Ib). The jar with reserve cross (Levi 1976, pl. XVIIIa [41:2]) and one with a reserve rosette (Levi 1976, pl. 28b) were found in MM IB contexts (Fase Ia), in rooms CIII of House B and room LXV (inferior layer) of the Southwest Quarter of the palace, respectively. Another jar with a reserve cross and one with two rosettes and banners (Levi 1976, pl. XIXb [41:7]) were dated to MM IIA (Fase Ib iniziale). The jars with foliate designs, octopi, and free-standing crosses and rosettes are generally found in MM II contexts. The jars from Phaistos were found in palatial contexts, “Grotta M,” “Bastione II,” in “Chalara Centro,” or in House B west of the West Central Court. The jars potentially referencing inlay work from Knossos were found in the “West Polychrome Deposit” (MacGillivray 1998, pl. 75:378) and the “South Polychrome Deposit” (MacGillivray 1998, pl. 30:1002 and pl.149:1002 [41:8]), which are deposits with material mainly spanning MM IIB to MM IIIA.

5.V BUCKET–JARS (BKT)

Description: Conical to cylindrical spouted vessel with a round, flat base. The jar is taller than wide. Has a vertical (or horizontal) handle opposite to the squared-off spout. May have two horizontal handles that rise above the rim. Here called “bucket-jars” due to their

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26 Could this latter jar, from House B, have fallen from a second floor of House C?

Metal examples: No examples of metal bucket-jars have been found. The closest metal parallels for the ceramic bucket-jars is a bronze vessel from a LM IIIIB grave at Gournes (Evans 1935:312, fig. 248; Matthäus 1980:256, pl. 43:363). The jar has a tall, conical shape, a round cross-section, a flat base, one vertical handle, and a circular band around the middle of the vessel. In this, it resembles a ceramic bucket-jar from Phaistos with repoussé ridges around the middle (Levi 1976, pl. 27b [41:9]) that evoke an added metal band or mid-rib. Apart from this feature and the generalized shape, the metal and the ceramic jars do not share much more in common. The bronze vessel does not have the same concave profile, does not have vertical handles, nor, most importantly, does it have a spout. It is not clear if this metal model replaces the bucket-jar in later period or if the two vessel types are, ultimately, unrelated.

Ceramic examples: A number of bucket-jars were found at Phaistos (Levi 1976, pls. 27b [41:9], 31b [41:10], 31e, 39d [41:13], XId [41:12], XVa, XLIIIc [41:11]; also Levi and Carinci 1988, pl. 59), and one vessel from Knossos might be related to this group (MacGillivray 1998, pls. 24:667 and 110:667 [41:14]). The ceramic examples of cylindrical “bucket-jars” are all slightly different in appearance, but they do share the same general shape. They are generally round in cross-section, have a spout, a flat base, a vertical ribbon handle, and, in some cases, horizontal handles that attach at the rim (Levi 1976, pl. XVa, XLIIIc [41:11]; Levi and Carinci 1988, pl. 59h). On one example, the vertical handle is perpendicular to the spout and two small ledge-handles sticking out from the rim take the place of “normal” handles opposite the spout and opposite the vertical handle (Levi 1976, XId [41:12]). Handles that are only attached at the rim and that rise above the top edge of the vessel are uncommon on jar shapes. Usually the
handles on jars are attached below the rim, usually at the shoulder, or have at least one attachment at the shoulder. The only other jars with high, horizontal handles that are only attached to the rim are ceramic jars in the shape of baskets (Levi 1976, pls. 116a, 116e, 117b, 117d), jars and askoi with fixed loop handles (ASK; JAR 3; Levi and Carinci 1988, pls. 67g, 67h, 68a, 108), and certain cylindrical spouted jars (JAR 1; Levi and Carinci 1988, pl. 60a, 60d). The characteristic of this type of handle is that they are more suited to (non-heavy) objects in other media, either rope, leather, or metal. The vessels are meant to be pulled up from the top and carried by the handle (think loops, bags, buckets). In (heavier and less flexible) ceramic, these types of handles are more prone to breakage; therefore, one reason for overriding the functionality of the vessel may be a desire to emulate handles in another medium.

It is difficult to say what the ultimate inspiration for the bucket-jar may have been. The appearance and oval cross-section of some jars gives the impression of a flexible material, perhaps leather (Levi 1976, pls. 31b [41:10], XVa). No matter what the original inspiration of the bucket-jar, it appears that, at least in some cases, the immediate prototypes for some of the MM bucket-jars were metal vessels. This metallic origin is suggested by a jar with a flat clay rivet at the juncture between the vertical handle and the rim (Levi 1976, pl. XLIIIc [41:11]). The flattened, squared lip of the rim is also suggestive of metal. Another set of bucket-jars have fine horizontal repoussé ridging running around the whole vessel (Levi 1976:167, 572, pl. 39d–g [41:13]; Levi and Carinci 1988:137–138, figs. 37, 38). The ridging and the lustrous sheen of the sherds have led the excavators to suggest that perhaps these jars were emulating metal vessels (Levi and Carinci 1988:137). Such ridging, especially on one jar (Levi 1976, pl. 39d [41:13]), is reminiscent of the horizontal ridging of certain bridge-spouted jars (BSJ 4). Perhaps the ridging is suggestive of repoussé or incising. A few jars have individualistic features that may, perhaps, be evocative of metal. One jar (Levi 1976, pl. XIIe) has a ridged base, which,
while not always expressive of metal, is a feature of some metal vessels. Another jar has a ring of repoussé ridges around the middle of the vessel (Levi 1976, pl. 27b [41:9]). This is evocative of added metal bands or repoussé mid-ribs, as seen on some metal straight-sided cups from Shaft Graves at Mycenae, for example (e.g., Davis 1977:137–142, 172 nos. 31–35, 55). While the structural details of the bucket-jars are suggestive of metal models, the barbotine decoration on most of the jars can not be said to be particularly metallic as yet without comparison to extant metal examples.

**Date and Distribution:** The ceramic examples of bucket-jars from Phaistos and Knossos all range from a date of MM IB or early MM IIA (*Fase Ia, Fase Ia/Ib iniziale*). Levi and Carinci, who note that no bucket-jar has so far been found in a context later than MM IB to MM IIA transition, allude to the fact that perhaps cylindrical spouted jars (JAR 1), which are, in some ways, squatter and wider versions of the bucket-jars, continue the bucket-jar tradition (of a vessel with spout and lateral handle), beginning in MM IB/MM IIA and continuing into MM IIA (1988:138).

Many bucket jars, including the possible bases of bucket-jars, were concentrated in different rooms of House B (Levi 1976, pls. 27b [41:10], 39k, XVa). The others were found in the Southwest Quarter of the palace, “Grande Frana,” or “Bastione II.” A bucket-jar was found on the lower floor of room LXV (Levi 1976, pl. 31e), while another was found in the bench of room IL (Levi 1976, pl. 31b [41:11]). The possible bucket-jar related vessel from Knossos was found in the Southwest room of the “Royal Pottery Stores.” According to Caloi, the bucket-jar was used as a “display shape during the ritual and ceremonial occasions that occurred within the Palace” (2007:130).

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27 This particular jar is referred to as a “conical vase” by Levi and Carinci (1988, pl. 80f), however, it is difficult to see why it was not called a “bucket-jar.” The lustrous sheen of the jar, the ridging, barbotine decoration, size, and shape are all similar to the rest of the “bucket-jars.” Much of the upper part of the vessel is missing; perhaps the lack of any indication of handles have made the excavators chose the safer option of “conical vase.”
5.VI CUPS (CUP)

The range of cups with “metallic” shapes and decorative treatments is quite large. Due to the many different varieties of cups, it has been necessary to divide these vessels into finer categories based on overall shape morphology. The categories of cups include Semi-Globular cups (SG CUP), Rounded cups (RD CUP), Carinated cups (CS, CM, and CT CUPs), Straight-sided cups (SS CUP) and Demitasses (DT CUP). Cups within each category are divided into types that are based on morphology and/or decorative treatments. These are given their own designations (e.g., SG CUP 1, SG CUP 2, etc.).

5.VI.1 SEMI–GLOBULAR CUPS (SG CUP)

Semi-globular cups are medium-sized cups that are distinguished by a distinctive round bulge at the widest part of the body and by a slightly offset, flaring rim. A single thin ribbon handle is attached under the rim. These cups should be differentiated from the one-handled rounded cups that are prevalent in EM III–MM IA at Knossos and elsewhere (Momigliano 1991:249–251, types 1–2), but which seem to have continued down into MM IB (MacGillivray 1998:75, rounded cup type 1).\(^{28}\) The diameter of the cups falls generally between 10–12 cm, but can go as wide as 17 cm (MacGillivray 1998, catalog). Height varies a little less, falling in the 5–8 cm range.

In Crete, semi-globular cups with off-set rims become a typical shape for the Middle Minoan period (Betancourt 1985, fig. 65 “semiglobular or hemispherical cup;”

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\(^{28}\) Although these rounded cups from MM IA are similar in appearance, it is unlikely that they belong to the same group of globular bowls as the ones in MM IB, MM IIA or MM IIB. The handles on the MM IA examples are round in section, like the rounded cups of the time. The rim diameters of these examples are smaller (around 5–7 cm), and the profile is crude. This last fact may be due to the fact that the MM IA conical-globular cups were handmade, but even the handmade example from Knossos (MacGillivray 1998, pl. 35:35) has a crisper, more regular profile and ribbon handles. The MM IA examples may have been variations on the rounded cups of the time, as they do not seem to have the same wide, globular profile as the later examples of globular cups (see Momigliano 1991, fig. 31 for comparison).
Walberg 1987a:147–148, form 43, nos. 197–199, fig. 30:197–199, “semiglobular lipped cup;” MacGillivray 1998, fig. 2.14, “rounded cups”). There are variations on the type, but they can generally be sorted into a number of sub-varieties based on shape: a completely globular cup, a cup with a globular profile tapering slightly to the base, a cup with a deep globular profile; a rounded cup with a rounded rim; and a globular cup with a tall, sharply off-set rim and raised disc base. The earliest examples of these semi-globular cups occur for the first time in MM IB contexts, and appear to continue down MM IIB and MM IIIA, depending on the type. Many cups of this sort are made from “Egg-shell” ware.

Metal counterparts for the ceramic semi-globular cups have been found at Tôd. The closest example is a wide globular cup (Bisson de la Roque 1950, pl. XIV:70591 [41:15]), but another cup (Bisson de la Roque 1950 pl. XIII:70583 [42:16]) shows that deeper versions also existed. The shallower example has two up-swung handles, but the shape is essentially the same as the ceramic examples (Warren and Hankey 1989, fig. 5A–B). The Tôd vessels can generally be dated to a period contemporary to the Middle Minoan period on Crete (Warren and Hankey 1989:131–135; see 6.II.2 Origins. Tôd). Metal semi-globular cups were also found in the Shaft Graves at Mycenae. One particularly globular metal cup (a little more squatter) was found in Shaft Grave IV (Karo 1930, pl. CXXVII; also Davis 1977: 193, no. 67, fig. 156). The presence of semi-globular cups at both Tôd and in the Shaft Graves suggests that the production of these types of cups began in MM continued down at least into LM I. The metal cup in Shaft Grave IV itself seems to be “more developed” than the Tôd vessels; it has a raised, rounded disc base, and a more solid shape and handle. Davis (1977:73) attributes this cup to Minoan manufacture.

The semi-globular cup was a popular vessel type that was decorated in many various ways. Some of these decorative techniques seem to be evocative of metallic
decorative treatments. The following list of semi-globular cups is sorted based on their perceived resemblance to metallic decorative treatments.

SG CUP 1. Semi-globular cups with gadrooning

Description: Semi-globular cup with off-set rim, one ribbon handle, and a gadrooning effect.

Metal examples: Gadrooning is a metallic decorative technique that consists of repeating repoussé “petaloid” motifs around the vessel. In Crete, gadrooning was used on certain added basin and cup rims to create repoussé foliate designs (e.g., Karo 1930, pl. CXXXVI; Silverman 1974, fig. 13:1 [20:10]; Matthäus 1980, pl. 39:325 [20:11]), but metal examples with gadrooning around the vessel body are not known from Crete or the Aegean in the Middle Minoan period. A couple of bowls from Tôd (Bisson de la Roque 1950, pl. XIV:70592 [41:17], pl. XVII:70623 [41:18]), however, display a seemingly “primitive” form of gadrooning at this time. The bowls are decorated with a series of slightly raised sections that terminate in rounded ends, giving them a “petaloid” appearance, but contrary to later examples of gadrooning, the gadroons on these bowls barely extend beyond the surface of the vessel. Nevertheless, the raised “petaloid” sections differentiate these bowls from those with fluting, whose flutes appear to be sunken into the surface instead.

More conventional examples of metal vessels with gadrooning are found in Anatolia in slightly later periods. One of the earliest examples is a cup/bowl that was found at a site in Central Anatolia, dating to approximately 1500 BCE (Przeworski 1939, pl. X:7). The shallow, wide bowl is of a type later called a phiale. It has large oval repoussé “petals” running around the lower half of the vessel. The bowl is similar in shape to the ceramic semi-globular cups from Crete, except that it is missing a handle. A slightly later example, from Kinik Kastamorou in central Anatolia, is a more conventional
bowl with gadrooning. The gadroon ends in arches near the rim—a seemingly more
developed style than the bowl from Tôd (Emre and Cinaroğlu 1993:683, no. 24, fig. 21,
pl. 126:1). Further development of gadrooning seems to have followed suit. Gadrooning
is a relatively common technique on later Anatolian metal vessels (e.g., Edgu 1983,
Özgen and Özgen 1988, fig. 38), especially on *phiale*.

*Ceramic examples:* One of the earliest indications of gadrooning in ceramic occurs on a
globular cup/bowl found in the Town Drain at Knossos (MacGillivray 1998, pl. 153:1031
[42:1]), dated to the MM IB. The vessel has raised sections running around the body,
evocative of gadrooning. It appears as if it was perhaps made in a mold. Another cup
fragment (dated MM II) from Quartier Mu at Malia also has plastic gadrooning
decoration, which “sans aucun doute [est] une imitation de vase en métal obtenue par
moulage” (Vandenabeele 1980:89, no. 120, fig. 119; Poursat and Knappet 2005, pl. 37f
[42:2]). If the ceramic vessel was indeed fashioned from a mold, as Vandenabeele
suggests, perhaps the mold was created directly from a metal prototype. The large
 ceramic gadroons on the two ceramic vessels are certainly similar to the size of the
gadroons on one of the Tôd bowls (Bisson de la Roque 1950, pl. XVII:70623 [41:18]),
perhaps suggesting that a similar-type metal bowl was the prototype for the ceramic
examples.

A metal bowl of this type may also have inspired a cup/bowl of “egg-shell”
thinness from Knossos (Mackenzie 1903, pl. VI:3 [42:3]; also Evans 1921:241, fig. 181;
and MacGillivray 1998, pl. 103:616). The lower half of this cup/bowl has painted
petaloid sections that resemble in size and shape the gadroons on the metal bowl (Bisson
de la Roque, pl. XVII:70623 [41:18]). What is especially evocative is that the petaloid
sections on the ceramic vessel converge at the base, which is a trait that only occurs on
this one silver bowl from Tôd (Warren and Hankey 1989, pl. 10A–B).
Of the previous three ceramic examples mentioned here, the two molded vessels and the “Egg-shell” Ware example, all are very globular-shaped and none were found with any evidence of handles.\footnote{Although it is possible that the handles were not recovered or identified.} These vessels also happen to be the earliest ceramic vessels with gadrooning (MM IB to MM IIA). This evidence suggests, then, that perhaps the earliest ceramic semi-globular “cups” with gadrooning were, in fact, bowls, and, as such, \textit{imitations} of the metal bowls.

Only a little later did the Minoans seemingly transform the bowl into a cup shape by adding a handle. Two cups with allusions to gadrooning were found with handles. The first cup, from Phaistos, is attributed to MM II \cite{Fase Ib; Levi 1976, pl. Lb [42:4]}.\footnote{The handle on this vessel was broken off. In the color illustration, it does appear as if there is no basis for the reconstruction of the handle, but the line drawing of the vessel in Levi and Carinci (1988, pl. 85a) clearly shows the stubs of the handle on the body.} This squat semi-globular cup is decorated with repoussé circles, which are painted red and black with tiny dots (the motif looks vaguely like a strawberry). Even though the painted decoration may have been fanciful, the raised circles are clearly evocative of bowls with gadroons. The second cup from Phaistos may be slightly later \cite{Fase II; MM IIB}, and, at this point, there is only a minimum effort at recreating the contrasting indentations and repoussé of gadrooning \cite{Levi 1976, pl. 179c [42:5]}.

\textit{Date and Distribution:} The closest copies of cup with gadrooning (the molded examples) all seem to fall within MM IB to MM IIA. The molded example from Knossos was found in the Town Drain (MM IB), whereas the “Egg-shell” cup from the same site, found in the “SW room of the Royal Pottery Stores,” \cite{MacGillivray 1998:36–37} has been dated to between MM IB to MM IIA. The molded sherd from Malia is said to be MM II, perhaps MM IIA.
The painted cup with “strawberries” from Phaistos was found in room XCIV of House C. The other cup with slight indentations from Phaistos was found in room IL of the Southwest Quarter of the palace.

The earliest examples of ceramic bowls with gadrooning do not appear to have handles (although, it is possible that they are missing), but, by MM IIA(?), cups with gadrooning do have this feature. It is possible that the addition of a handle to the original bowl shape represents an adaptive form of imitation.

**SG CUP 2. Semi-globular cups with vertical fluting and arcades**

*Description:* Semi-globular cup with off-set rim, one ribbon handle, and painted vertical lines that may emulate fluting. Some cups have painted arcades emulating the rounded ends of vertical fluting.

*Ceramic examples:* Many silver fluted semi-globular cups were found at Tôd and another one was found at Kınık in Anatolia (Emre and Cinaroğlu 1993:712, fig. 21). The flutes on some of these silver cups are rounded at the ends, near the top of the vessel (e.g., Bisson de la Roque 1950, pl. XV:70604 [42:6] and 70605; Emre and Cinaroğlu 1993:712, fig. 21) (see also 4.I.2 Vertical fluting). A ceramic cup was from at Knossos is nearly identical to one from Tôd (Warren and Hankey 1989, pls. 6A and 7A–B [42:7]). The thin-walled cup has the same molded vertical arcades below the plain rim. The exterior is coated in a powdery white surface “intended to imitate silver” (Warren and Hankey 1989:132). Although found in fragments, it does not appear that the vessel was paired with a handle, just like the silver bowls. This would seem to imply that this particular bowl was a imitation of an imported silver bowl, whereas the semi-globular cups, with their added handles, were perhaps close adaptations.
The vertical flutes were copied in different ways. On some cups, the flutes are rendered by simple thick “crescents” or lines (MacGillivray 1998, pl. 14:375 [42:8], pls. 27:921 and 134:921 [42:9]) or slight vertical lines (Levi 1976, pl. 125b [42:11]; MacGillivray 1998, pl. 9:286 [42:10]). The lines may be white on a dark ground on dark or a light ground; the difference is negligible, as the effect of dark and light is still preserved. On one cup from Knossos, the alternating vertical bands of white and black paint so convincingly mimic the effect of fluting that the photo of this cup makes it appear as if the cup did, in fact, have three-dimensional molded flutes (MacGillivray 1998, pl. 100 top left [42:12]).

On other cups, vertical fluting was alluded to by emphasizing the arcade effect of the rounded flute terminals. The arcades are either represented by white vertical lines topped by arches or by a white ground with dark “crescents” and black pendant semi-circles (Pernier 1935, fig. 187 [42:19]; Levi 1976, pls. 123b [42:14], 125g–125k [42:15–18]; MacGillivray 1998, pl. 9:285 [42:13]). Even the indented dots found above the fluted arcade on some silver bowls (e.g., Bisson de la Roque 1950, pl. XVIII:70630 [15:9]) were emulated on some of these same painted cups (Warren and Hankey 1989, pl. 5C–D, e.g., [42:13–15]).

One unusual vessel, which may have been a semi-globular cup has wide, large alternating white and black crescent motifs running around the base of the cup and around the rim (Levi 1976, pl. LIb [42:20]). Around the center are two bands of red dots outlined in alternating white and black lines. This section of the cup is “dented” so as to give an impression of carination or added metal bands. The white crescents, similar to the white crescent motifs on the other vessels with vertical fluting (see above), give the impression of vertical fluting. Another possible semi-globular cup only has white crescents around the base of the vessel (Levi 1976, pl. LIC [42:21]). These are similar to
the crescent motifs on the other cup, and it too, may perhaps be referencing vertical fluting around the base.

In addition to the imitation of wide flutes, it appears that some semi-globular cups were modeled on metal cups with tight fluting. One metal example with tight flutes was found at Tôd (Bisson de la Roque 1950, pl. XVI:70619 [42:22]). The fluting on this bowl is arranged in a torsional pattern, but it may be that tight vertical flutes may have existed as well. If so, two likely candidates are semi-globular cups in “Egg-shell” Ware (Evans 1921, pl. IIb, also MacGillivray 1998, pl. 103:619; Levi 1976, pl. XLVIIa [42:23]). The cup from Knossos also has two painted bands adorned in S-shapes, a possible metallic feature as seen on some straight-sided cups (see 4.IV.3 Bands with S-shapes).

Although no metal example has been found of a bowl/cup with a double row of arcades, a unique ceramic bowl/cup of the finest “Egg-shell” Ware was found at Knossos in the “Royal Pottery Stores” that may indicate that this type of vessel once existed (Evans 1921, fig. 183a:1 [43:1]; also MacGillivray 1998:160, no. 801). The walls are so fine and the detail is so precise, one wonders this vessel was not made in a mold (given both sides are indented). It certainly seems like it was an imitation. The only other cup with double arcade is a demitasse (DT CUP 1) from Phaistos (Levi and Carinci 1988, pl. 82d [17:14]). It too had thin walls and delicate molding. This vessel was found in room LX of the Southwest Quarter of the palace in a context that may date to MM IIA (Fase Ib iniziale). Thus, the two molded cups with double arcades were close in date.

Fragments of cups were found with incised designs that resemble vertical fluting (Levi 1976, pl. LXIIb, f, h, i, k [43:2–5]). The surface treatment differs from repoussé work in that the design is pushed into the surface of the vessel rather than raised outward. It is difficult to judge whether this was localized fluting or chasing (see also 4.V Chasing). One fragment (Levi 1976, pl. LXIIb [43:2]) has vertical zig-zag lines. The
design is similar to the band of painted zig-zags on a carinated cup from Phaistos (Levi 1976, pl. 131p). Both designs seem to be representing the same fluting (or chasing) effect. It is difficult to attribute a vessel shape to the fragments (Levi 1976, pl. LXIIk [43:4] may be from a carinated cup), but it is possible that they may have once been part of semi-globular cups.

Date and Distribution: The two examples of “Egg-shell” Ware cups from Knossos (Evans 1921, fig. 183a:1 [43:1], also MacGillivray 1998:160, no. 801; Evans 1921, pl. IIb, also MacGillivray 1998, pl. 103:619) and the “Egg-shell” demitasse with double arcades from Phaistos (Levi and Carinci 1988, pl. 82d) were found in contexts ranging in date from MM IB to MM IIA (Southwest room of “Royal Pottery Stores” and room LX of the Southwest Quarter of the Phaistos palace). This early date also applies to one globular cup from Knossos with thick vertical painted lines (MacGillivray 1998, pls. 27:921 and 134:921 [42:9]). All the cups emulating the arcade pattern on the silver cups are dated to MM II (Fase Ib) at Phaistos. The cup with arcades from Knossos (MacGillivray 1998, pl. 9:285 [42:13]) and another cup with white crescents (MacGillivray 1998, pl. 14:375 [42:8]) were found in the “West Polychrome Deposits” (MacGillivray 1998:33–36), which has been dated to MM IIB–MM IIIA. Perhaps these should be stylistically dated to an earlier period.

SG CUP 3. Semi–globular cup with torsional flutes

Description: Semi-globular cup/bowl with small rounded base. Slightly flaring rim. Molded torsional flutes around the body.

Metallic examples: A number of silver semi-globular cups with torsional flutes were found at Tôd in Egypt (e.g., Bisson de la Roque 1950, pl. V:70509 [14:3], pl. XVI:70612 [14:6], 70613 [14:7], 70619 [14:9]; pl. XVII:70624 [14:11], pl. XVIII:70633 [14:12]). On
some, the arches of the flutes do not reach the lip of the rim, but the bowls do have small rounded bases.

*Ceramic examples:* Only one example of a semi-globular bowl/cup was found with molded torsional flutes, at Knossos (Hogarth and Welch 1901, fig. 22 [43:7]). The ceramic example has a slightly higher base, and the flutes run around most of the body. The rim is also slightly different than the examples at Tôd. Nevertheless, the inspiration may have been from silver vessels of this sort. The fact that it was not found with handles may indicate that this cup was a direct *imitation*. In execution, it is reminiscent of the jug from Patrikies, also with molded torsional flutes (Levi 1976, pl. 16c [52:15]; JUG 4). Painted semi-globular cups with torsional flutes do not seem to be popular, unless the “white crescents” found on some SG CUP 2 were once influenced by the torsional flutes of the metal examples (see, e.g., [42:20]).

*Date and Distribution:* The ceramic bowl/cup was found in the “Koulouras” area of Knossos, outside of the Protopalatial palace proper. The date is likely MM IB or MM IIA.

**SG CUP 4. Semi–globular cup with repoussé work**

*Description:* Semi-globular cup with off-set rim, one ribbon handle, and raised motifs on the surface of the vessel. All the examples with stamped spirals/concentric circles are included in MacGillivray’s “Precision Stamped Ware” group (1998:57–58). The designs are impressed into the wall of the vase from within—in effect, the same technique as employing repoussé on metal vessels.

*Ceramic examples:* Although the repoussé designs on extant metal vessels were varied (see 4.VI Repoussé work), in ceramic, only a few motifs were made in the repoussé fashion, that is, raised from the surface of the vessel. The repoussé designs include circles, spirals, and, possibly, “Wavy-line” designs.
A series of semi-globular cups were adorned with repoussé spirals/concentric circles. The surface decoration on one group of globular cups from Knossos (MacGillivray 1998, pls. 19:436–444 and 83:436–444; pl. 57:237) and one example from Phaistos (Pernier 1935, pl. XXIVa) are particularly reminiscent of the two rows of tightly wound spirals on two silver bowls from Byblos, dated to a period roughly contemporary with the ceramic cups (Montet 1928:191–193, pl. CXI:748, pl. CXIII:749; also Davis 1977, fig. 64) (see 4.VI.2 Repoussé spirals). The shape of the bowl is also similar to the ceramic examples, but the bowl differs by not having a handle. Again, as in the case of the carinated cup, the semi-globular cup with its handle may have been a close adaptation of a metallic import.

In addition to three-dimensional spirals, certain semi-globular cups were decorated with raised bosses: one from Knossos (MacGillivray 1998, pls. 19:430–432 and 82:430–432) and fragments from Phaistos (Pernier 1935, fig. 231 center; Levi 1965–1966, fig. 67 bottom, second row, second from left). They seem to be limited to the upper shoulder of the cup. It may be that raised circles of this sort may be representing embossed strips, as seen, for example, on a silver ewer from Zakros (Platon 1971, fig. on p. 87; also Davis 1977:102–105, no. 13, figs. 76, 77), or repoussé work on the vessel itself, as seen, for example, on a silver goblet from Midea with bossed circles around the rim (Persson 1931, fig. 30, pl. XVII:1; also Davis 1977:282–283, no. 118, fig. 229) (see also 4.IV.1 Bands with Dots).

A large number of semi-globular cups are decorated in the so-called “Wavy-Line Style” (Walberg 1987a:59–60, fig. 44, motif 16, “wavy lines,” 16.ii “network” especially; MacGillivray 1998:62–64, fig. 2.5). The “Wavy-line Style” is characterized by either wavy-lines or scale patterns filled in with a small number of repeating motifs. The alternating motifs are often arranged in a diagonal column (MacGillivray 1998:62, fig. 2.5 for some examples of the style). The pattern is repetitive, and it has been suggested
that the style could be reflecting “woven designs with tiny beads stitched-on in a variety of regular patterns” (MacGillivray 1998:62). While it is true that the patterns do look like woven designs at first glance, metal work is also very precise, symmetrical, and repetitive. It is also possible that the inspiration for the pattern was drawn metal antecedents with repoussé work. One Kamares fragment from a semi-globular cup found at Phylakopi (Hogarth and Welch 1901, fig. 29 [43:13]) illustrates the three-dimensionality of such designs. The sherd is patterned with raised sections (star-shaped), set in diagonal patterns, and dotted lines filling in the interstices, the same technique used on the “Wavy-line” designs. Such a specimen seems to “imitate the indentations and protuberances of hammered metal” (Hogarth and Welch 1901:94). Evans describes another “Wavy-line” cup (1935:132, fig. 100a) as having “bulbous protuberances beneath the feather-like sprays” (speaking about the motifs in between the wavy lines). It does not seem accidental, then, that some of these cups have metal parallels with repoussé decoration. One particular “Wavy-line” design incorporating a scale pattern (see MacGillivray 1998:63, fig. 2.5:7; Levi 1976, pls. 124c [43:17]; XLVIIc [43:16]; MacGillivray 1998, pls. 12:340 and 73:340 [43:15]) is reminiscent of the overlapping repoussé “tri-curved arch” design on a later silver bowl from Mycenae (Davis 1977:295–296, no. 128, figs. 239–240 [43:14]). While not exactly the same, the bowl provides an idea of what repoussé work done in a “Wavy-line” Style may have approximated. If one can imagine the spaces between the wavy lines in repoussé with the additional details done by incision or pointillé (as on the ceramic sherd), then it would possible to imagine that the “Wavy-line” cups were imitating metal. Features that support this assertion includes the very large number of examples of this type of cup in a similar style (which may be duplicates of one or more metal prototypes), the examples made in “Egg-shell Ware,” the few, simple, repeated motifs executed in a precise, geometric fashion (not unusual of itself in ceramic decoration, but characteristic of metal vessels with repoussé work), the shape of the cups, and the fact that many other semi-globular cups were
decorated in other “metallic” surface treatments. Although all dated to roughly the same time period (MM II or MM IIB–IIIA), one imagines that the more the wavy-line cups were imitated, the less precise the decorative motif would have become (see, e.g., MacGillivray 1998, pls. 12:351 and 74:351 [43:18]; Levi 1976, pls. 124f [43:19], 124h [43:20]).

**Date and Distribution:** With the exception of one vessel from the “Northwest pit” (MacGillivray 1998, pl. 57:237), which has a range of material dating to MM IB–IIA and MM IIB, all the other cups with repoussé spirals and circles from Knossos were found in the “West Polychrome Deposits,” which is dated to MM IIB–IIIA. The cup with repoussé circles from Phaistos (Pernier 1935, pl. XXIVa [43:7], which shares similarities with a cup from the “West Polychrome Deposits” (MacGillivray 1998, pls. 19:436–444 and 83:436–444 [43:8]), was found in shrine room VII, dating to MM IIB (Fase Ib Late). Most “Wavy-line” cups from Phaistos can not be dated any closer than MM II (Fase Ib), whereas those from Knossos were mainly found in the “West Polychrome Deposits” (MM IIB–IIIA). To summarize, then, it seems as if the repoussé designs on semi-globular cups began in MM IIB. It is possible that the “Wavy-line” design, which appeared in MM IIB continued, if the metal example with repoussé “tri-curved arch” design is any indication, into the Late Minoan period.

**SG CUP 5. Semi-globular cup with horizontal added bands**

**Description:** Semi-globular cup with off-set rim, one ribbon handle, and painted decoration that resembles added (or inlay) metal bands.

**Ceramic examples:** Only a few examples of semi-globular cups have painted bands that may be representing added metal bands (or inlaid bands). One cup from Knossos (MacGillivray 1998, pl. 14:372 [44:1]) has two orange bands superimposed with red dots. The bands, around the rim and lower section of the cup outline a foliate band. The same
kind of band occurs on some straight-sided cups (e.g., MacGillivray 1998, pls. 30:995 and 148:995 [48:17]; pls. 30:997 and 148:997 [48:16]) and bridge-spouted jars (MacGillivray 1998, pls. 28:947 and 139:947 [39:17], pls. 15:383 and 76:383 [39:15]). The use of orange and red on the bands recalls the Minoan practice of using copper reinforcements on precious metal vessels for strength and economy (Davis 1977:337), and, thus, in this context, may be representing metal bands that were added to the original metal cup (see 4.IV.1 Bands with Dots). The dots may have been rivets, or, more likely, imbedded cut-outs within the band. Similar kinds of cut-outs were likely part of the bands of linked dots seen on another semi-globular cup from Knossos (MacGillivray 1998, pl. 14:373 [44:2]), only, this time, a copper strip may have ran over the inlaid circles (see 4.IV Bands with Dots). Decorative bands may have also adorned the semi-globular cup with fine painted lines, also from Knossos (mentioned under SG CUP 3; Evans 1921, pl. IIb [44:3]; also MacGillivray 1998, pl. 103:619). The bands, around the rim and mid-point, are coated in a thick white paint and superimposed with interlocking S-shapes in red. The interlocking S-shapes are reminiscent of the detail on a gold flowerbed inlaid into the electrum goblet from Shaft Grave IV at Mycenae (Xenaki-Sakellariou and Chatziliou 1989, pl. XII:2 [26:3]). The S-shapes, in the case of the goblet, were highlighted by “niello,” but, in the case of the ceramic cup, the colors of the bands suggests a silver or gold band with inlaid copper S-shapes or copper bands covered in silver or gold with the S-shapes cut-away (or pushed out by repoussé) to reveal the copper underneath.

A few other semi-globular cups have horizontal decorations, including two with a ladder motif (bands of vertical fluting?) (Levi 1976, pl. 124b; MacGillivray 1998, pl. 14:371). Perhaps the ladder motif is analogous to the chevrons bands on some straight-sided cups (e.g., MacGillivray 1998, pls. 30:997 and 148:997 [48:17]) and bridge-spouted jars (e.g., Levi 1976, pls. 105d [40:5], 198d) (see 4.IV.2 Bands with Fluting). Another cup
has a simple red band set over four groups of large white circles (Evans 1921:187, fig. 136o; also MacGillivray 1998, pl. 5:126 and 44:126 [44:4]). If this cup were, in fact, copying a metal prototype, then one could very well imagine the large white circles as gold inlay pieces, which were held in place by an added metal band (see also below, SG CUP 6).

Date and Distribution: The earliest semi-globular cups with ornamental bands (Evans 1921, pl. IIb [45:3]; also MacGillivray 1998, pl. 103:619) are the cup with S-shape bands from the “Royal Pottery Stores” at Knossos (MM IB–MM IIA) and the cup with band superimposed on the white circles (MacGillivray 1998, pl. 5:126 and 44:126 [44:4]) from the “Early Chamber beneath the West Court,” which is dated to MM IB. All of the other examples of bowls from Knossos with bands were recovered from the “West Polychrome Deposits” (MM IIB–MM IIIA). The cup with ladder motif from Phaistos is MM II (Fase Ib).

Decorating semi-globular cups with added bands does not seem to be as popular a technique as fluting, repoussé work, and, perhaps, some inlaying. The technique appears to have begun as early as MM IB and continued possibly to the end of the MM period.

SG CUP 6. Semi-globular cup with inlay or enameling

Description: Semi-globular cup with off-set rim, one ribbon handle, and painted decoration that resembles inlaid (or enamel) motifs.

Ceramic examples: It is possible that some metal semi-globular cups were inlaid with cut-out motifs. One favored motif for enamel work was the rosette, especially rosettes executed in reserve (within a medallion; see 4.VII Inlay and Enameling). One globular cup with large rosettes on each side and on the base exemplifies the motif when rendered
in paint (Evans 1921:241, pl. IIa [44:5]; also MacGillivray 1998, pl. 103:617). The petals in reserve are simple, sharp, and “embedded” within a white ground.

Just like the possible candidates of inlay work on small carinated cups, the possible inlay motifs on semi-globular cups feature large, single figurative motifs or repetitive designs composed of simple, smaller parts (see under CS CUP 4). Semi-globular cups that fall under this category include one cup with a repeated rosette design (Evans 1921:241, pl. IIc [44:6]; also MacGillivray 1998, pl. 103:618) and another two cups with large, white dots (MacGillivray 1998, pls. 5:126 and 44:126 [44:4]; pl. 22:643 [44:7]). On one example (MacGillivray 1998, pls. 5:126 and 44:126 [44:4]), an orange band runs over the white circles. The color of the band is reminiscent of the linked dot band motif, as seen, for example, on another semi-globular cup from Knossos (MacGillivray 1998, pl. 44:373 [44:2]). On metal vessels, the bands in both cases may have proved useful in restraining the inlaid cut-outs from falling off the surface of the vessel.

*Date and Distribution:* All the examples of semi-globular cups possibly imitating inlay and enamel work mentioned above date to MM IB or within MM IB–MM IIA. Three of the cups—both of the examples with rosettes [44:5–6] and the example with the large, individual dots [44:7]—were found in the “Southwest room of the “Royal Pottery Stores” (MM IB–MM IIA; MacGillivray 1998:36–37). The cup with the groups of white circles (MacGillivray 1998, pls. 5:126 and 44:126 [44:4]) was recovered in the “Early Chamber beneath the West Court” from a (MM IB; MacGillivray 1998:24–27). All of these vessels were made in fine “Egg-shell” Ware. It is possible that semi-globular cups with inlay/enameling continued beyond MM IIA, but that it is difficult to determine at the moment what those inlay motifs would have looked like.
5.VI.2 ROUNDED CUPS (RD CUP)

In MacGillivray’s terminology of pottery shapes for the Middle Minoan period, his “rounded” cup category only includes the shapes here called “semi-globular cups” (SG CUP) (MacGillivray 1998:74–77, fig. 2.14 nos. 3–7) and “demitasses” (DT CUP) (MacGillivray 1998:74–77, fig. 2.14). The following group of vessels includes all the other rounded cups that do not fall within these two categories. The cups all have a rounded lower body and differ only in the form of the rim, base, or handle. Since each rounded cup is based on a different metallic prototype, metal parallels are discussed individually, under each type.

RD CUP 1. Rounded dup with added rims

Please see under Basins with high loop handle (BAS 1) for discussion of these cups.

RD CUP 2. Semi–hemispherical cup

Description: A semi-hemispherical cup with a round body. One wide handle is attached at the rim and mid-body. The diameter is approximately 9 cm wide at the rim, and the cup is approximately 4 cm tall. Even though the shape may appear to be similar, this type is different from the “one-handled” cups that begin in EM III and continue down to MM IA (Momigliano 1991:249–251, fig. 31 types 1–4), even into MM IB (MacGillivray 1998, fig. 2.14, type 1, called “rounded cups”). The semi-globular cup is wider, more shallow, and the decoration is very different from the earlier rounded cups. The flat ribbon handle is more sedate, not extending as far as on the one-handled cups, and the walls appear to be thinner.

Metal examples: Examples of plain, metal rounded cups have been found in contexts as early as the Early Bronze Age. Two gold and one silver (with gilded handle) cups were discovered in a cemetery at Alaca Höyük, in Central Anatolia, dating to the second half of
the third millennium (Toker 1992, figs. 16–18 [44:8]). These cups share a similar profile as a ceramic cup from Phaistos, including a side handle affixed to the side that does not raise much above the rim (Toker 1992, figs. 16–18 [44:8]). Even closer in date, however, are the series of plain, metal semi-globular cups/bowls from Tôd, Egypt (Bisson de la Roque 1950, pl. XII:70580 [44:9], 70581, pl. XIII:70584, 70585, 70586). Among the rounded cups from Tôd, those with handles (Bisson de la Roque et al. 1953, pl. XVI: 15147, 15149, and 15150) display wide and tight loop handles, a characteristic shared by the ceramic example. The profiles of the ceramic and metal cups are clearly very similar, and it is possible that the clay cup was an imitation of a similar-type metal prototype.

**Ceramic examples:** Only one complete example of this type of cup was reported, in the filling of the bench in room IL at Phaistos (Levi 1976, pl. 125c [44:10]). The cup has a rounded base—unusual for cups in Crete during the MM period—and has a tight, flat ribbon handle. Half of the vessel is painted black, whereas the other half has a light background. Regularly spaced oblong, black motifs cover the light side. Black and white lines bisect the cup in two. The regularly spaced black motifs on the light side of the cup calls to mind a regular denting pattern in metalwork or vertical fluting.

**Date and Distribution:** As belonging to the fill inside the bench of cultic room IL, the cup from Phaistos is dated to MM IIA (*Fase Ib iniziale*).

**RD CUP 3. Rounded cup with constricted neck**

**Description:** Unique cup with a high rounded shoulder, a constricted neck, an off-set rim, and a body that tapers down to a flat base. Handle is missing.

**Metallic examples:** The shape of the cup is more at home in Anatolia or North Syria. The high rounded carination and the S-shape profile of the cup seems indicative of metal prototypes. Consider the two bronze bowls that were found in a Middle Bronze context at
Kültepe (Emre 2008, figs. 3–4 [44:11]). They too have a high carinated shoulder, a raised flaring rim, and a lower body that tapers to a disc base. The profile of the ceramic cup is almost exactly the same as the metal examples. The only difference between the two is that the ceramic cup has a higher shoulder and a flat base. Even closer in profile is a bronze bowl with concave neck from Kültepe (Özgüç 1959:65, fig. 85–86 [44:12]; also Reeves 2003, cat. no. 229), dated to a MBA context. The bowl shares the same profile as a ceramic example from Knossos. The only difference is that, attached to the metal bowl in guise of a handle, is an anthropomorphic figure with arms outstretched.

**Ceramic examples:** Only one example of this type was published—from Knossos (MacGillivray 1998, pl. 24:659 [44:13]). It is painted a semi-lustrous gray-brown throughout and has a thick white band outlined in orange bands around the exterior rim and around the base. Perhaps the white and orange bands are meant to evoke a metallic band. The handle was not found with the rest of the vessel. It is unclear from the description of the piece (MacGillivray 1998:154) if the handle is presumed, or if there were signs to indicate the presence of a ceramic handle. Only the MBA metal parallel of this bowl has a handle, although it is of an unusual shape (see above). If the ceramic cup did, indeed, have a ribbon handle, the addition of this feature might suggest that this cup was an adaptation of the original form. The shape of the vessel is likely Anatolian or Northern Levantine.

**Date and Distribution:** The ceramic cup with a constricted neck from Knossos was found in the “Southwest room of the Royal Pottery Stores.” The date of this context has been attributed to between MM IB–MM IIA (MacGillivray 1998:36–37).

**RD CUP 4. Rounded cup with sharply carinated shoulder**

**Definition:** A rounded cup with sharply carinated shoulder, concave neck and flaring rim, and rounded lower half. Base is slightly convex on the inside. Handle missing.
**Metal examples:** The shape of the cup appears to be Anatolian. Two metallic cups, one bronze and the other silver, with similar rounded bases and carinated shoulders were found in Central Anatolia at Yeni Hayat Köyü (Müller-Karpe 1994, fig. 92.18; Reeves 2003, cat. 103 [44:14]) and, possibly, Horoztepe (Özgüç 1964:4–5, fig. 2a–b; Reeves 2003, cat. 123). They are thought to date to EBA III. The former example was better preserved. The handle on this vessel is attached to the rim, curves towards the shoulder, but is not attached to the body. The latter example does not seem to have a handle.31

**Ceramic examples:** Only one cup with this shape was reported, from Knossos (MacGillivray 1998, pl. 5:124 and 44:124 [44:15]). The vessel is coated a semi-lustrous brown throughout. The exterior has an orange line outlined by white lines at the shoulder and a white line at the base. The orange and white bands are reminiscent of the same painted feature on RD CUP 3. Perhaps they were meant to evoke similar strengthening metal bands. The interior has eight orange ovals surrounded by white lines (MacGillivray 1998:127, no. 124 [44:15]). The ovals are reminiscent in shape to the repoussé sections found on many *phiale* (shallow bowls with omphalos base), which is a type of bowl common in later periods in Anatolia (e.g., of bowl with repoussé “ovals:” Edgu 1983, A731; Özgen and Özgen 1988, fig. 36). Granted, even though the *phiale* proper is a shape that appears later than the MBA, one of the characteristic features of the *phiale*, the omphalos, is a feature that begins in Anatolia in EBA and continued all the way through to the Classical period. The ceramic bowl from Knossos appears to have an incipient omphalos base; the base curves inward more so than most other ceramic bowls on Crete

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31 Although it is possible that it could have had a handle. The cup was found in a crushed and fragmentary state, so the handle might have been lost to posterity.
in this period. Could the metallic bowls from EBA mentioned above have evolved into the *phiale* in later periods? One of the characteristics of the *phiale* is that the decoration inside the cup is clearly visible given the shallow nature of the bowl. The fact that decorative emphasis is on the inside of the ceramic cup may perhaps be an attempt to evoke the nature of these type of bowls.

**Date and Distribution:** The ceramic cup with sharply carinated shoulder was found in the “Early Chamber beneath the West Court” at Knossos. This context has been dated to MM IB (MacGillivray 1998:24–27).

**RD CUP 5. Rounded cup with spool handle**

**Description:** A cup with a rounded body that tapers to a presumed flat base. The flat rim extends outwards. Has a unique spool handle.

**Metal examples:** No exact metal equivalent of the ceramic cup has been found. Nevertheless, certain features of the cup lend itself to metal prototypes. The flat rim and overall S-profile of the cup is a “metallic” trait, reminiscent of the shape of the more popular semi-globular cups (SG CUP), which do have extant metal counterparts from Töd. Even more telling is the comparison between this ceramic example and four bronze bowls from the site of Kültepe in Anatolia, dating to the nineteenth and eighteenth centuries BCE, respectively (Emre 2008, figs. 3–4 [44:11]; Toker 1992, figs. 45–46). Two of the bowls (Emre 2008, figs. 3–4) have a flaring rim, whereas the other two have a

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32 Ceramic bowls with omphalos bases (called phiale) are known from EBA levels at Horoztepe, for example (Özgüç and Akok 1958:44 no. 9, pl. VI 6, fig. 18; Özgüc 1964:4–5, fig. 3), while a metal example was found at Eskiya, also from the same period (Özgüc and Temizer 1993, fig. 47, pl. 116:2; Maxwell-Hyslop 1995, fig.1:4). The shape continues through the MBA period (e.g., Kültepe: Özgüc 1959:109; Reeves 2003 cat. no. 256), down to the Iron Age, where it becomes an iconic shape of “Phrygian” metalwork (e.g. Özgen and Özgen 1988, figs. 36–39; Toker 1992:23 and 194–202 nos. 49–76). A ceramic bowl from Phaistos that looks like it has an omphalos base is reported in Pernier 1935, fig. 227.5. As it is difficult to judge whether this was a proper omphalos base, it is not included in the typology here.
rolled, thickened rim (Toker 1992, figs. 45–46). The ceramic example from Knossos has a flat extended rim, but, perhaps this rim was a just a variation on a theme. All the metal bowls have a wide mouth (one with a diameter of 24 cm), a short carinated shoulder, and a profile that tapers to a slightly raised ring base. Even though the metal examples are more sharply carinated, the overall profile is similar to the ceramic cup. Of course, the spool handle has also long been acknowledged as a metallic trait that was likely a feature imported from Anatolia as well (Davis 1977:43–50). It is possible that the spool handle was first imported to Crete on metallic bowls (see more under BWL 1 and 6.II.2 Origins. Anatolia and the Near East) and then later grafted onto straight-sided cups with ribbon handles. If this were the case, perhaps this ceramic cup was an imitation of one of the original metal bowls/cups with spool handle imported into Crete.

*Ceramic examples:* Only one example of this type of cup was reported, at Knossos (MacGillivray 1998, pls. 25:818 [44:16]). The cup is coated a lustrous metallic black and is speckled with white spots throughout. The spool handle was broken from the body of the cup, but it was recovered. Probably due to the weight of the spool and the thin attachments, the spool handle was not conducive to imitation in clay; the Knossian cup is the only local ceramic vessel with this feature, and the handle has apparently broken off in antiquity.

*Date and Distribution:* The cup from Knossos was found in the “Loomweight Basement” (MacGillivray 1998:39–42). The exact date of the pottery within the deposit is mixed, since the pottery from two different levels was boxed together (MacGillivray 1998:41). It seems that most of the pottery, including this cup, can be dated, based on typological and stylistic grounds, to MM IIB (MacGillivray 1998:41), but that a few sherds are more comfortably MM IIIA in style (see Warren and Hankey 1989:52–55 for a MM III date). Thus, it is possible that the “Loomweight Basement” was filled in early in the MM IIIA (MacGillivray 1998:41). This would fit nicely with the other evidence for
the presence of spool handles at Knossos and the white-speckled decoration on the cup. The earliest date for the import of spool handles would be MM IIB or early MM IIIA.

5.VI.3 CARINATED CUPS (CS/CM/CT CUP)

Carinated cups are small to medium-sized cups that are distinguished by an abrupt change in the direction of the vessel walls. On most carinated cups, the transition point is marked by a sharp ridge. A thin ribbon handle is attached below the rim. MacGillivray (1998:72–74, figs. 2.11, 2.12) differentiates between two types of carinated cups: smaller versions with sharp ridges, usually at the base of the cup, and high out-splayed rims (“Tall-rimmed Angular Cups,” fig. 2.11), and a taller and/or wider version, with a high carination point (mid-body or upper body), and a taller, tapering base (“Short-rimmed Angular Cups,” fig. 2.12; see also, Walberg 1987a:150–151, form 47). MacGillivray’s tall-rimmed cups (fig. 2.11 and fig. 2.12 type 1) are here called “small carinated cups” (CS CUP), and his “short-rimmed cups” are either called “medium carinated cups” (CM CUP) (fig. 2.12 type 2) and “tall carinated cups” (CT CUP) (fig. 2.12 type 3).

No extant examples of metal carinated cups with a single handle have yet been found in the Aegean. The closest parallels in body shape are to metal kantharoi. Metal (and ceramic kantharoi) come in various shapes and sizes, however. It may be that different types of kantharoi influenced the different types of carinated cups.

The small carinated cups share a similar body shape with the kantharoi that have a convex lower body, long neck, and slightly flaring rim. The gold kantharos from Shaft Grave IV at Mycenae is one such example (Karo 1930, pl. CVIII; also Davis 1977, no. 60, fig. 143 [45:1]). The metal kantharos from Mycenae is dated by its context to MH III–LH I (although the vessel itself could possibly be an heirloom), but ceramic versions of this type of kantharos do exist on the mainland in an earlier period, for example, the
Middle Helladic matt-painted kantharos from Lerna (Caskey 1958, pl. 43b; also Vermeule 1972, pl. IXa; also Davis 1977, fig. 25). The shape of the Lerna kantharos is more akin to the shape of some of the earliest ceramic carinated cups. The footed based is not problematic, as some of the ceramic carinated cups (MacGillivray 1998, fig. 2.11 type 1) have footed bases as well. Three early ceramic carinated cups were found in the area of the Koulouras at Knossos (Hogarth and Welch 1901, fig. 21 [45:2]; Momigliano 1991, fig. 28 nos. 7, 8 [45:3–4]). One of these cups is perhaps illustrative of the process of adaptation that led to the carinated cup. This cup is short, has a carinated body, a small base, and two handles (Hogarth and Welch 1901, fig. 21 [45:2]). The shape seems to be a smaller version of the ceramic kantharos at Lerna, but, in this case, the handles do not rise above the rim. This particular example may be a imitation or an early adaptation of a type of small metal cup/kantharos that made its way to Crete, perhaps from Anatolia, where the shape of the kantharos is thought to originate (see below, under 5.X Kantharoi for references). The two other carinated cups [45:3–4] found in the same general area as the two-handled carinated cup share the same shape as this latter cup, but only have one handle. The body is the same: the body above the carination is relatively straight, and the rim only flares out slightly, which is a feature of the gold kantharos from Shaft Grave IV

33 Momigliano (1991:236–238, fig. 28, pl. 55:7, 8) attributes these two carinated cups, found in the “Area encircling the Middle Kouloura,” to MM IIA based on stylistic grounds. The cups may be earlier, however, as she compares these examples to MacGillivray’s short-rimmed type 1 (1991:238). This type is thought to occur in the early part of MM IB into MM IIA (1998:72). As these cups were found in the Kouloura area in deposits containing MM IA pottery, and as examples from Phourni (Sakellarakis and Sapouna-Sakellaraki 1972, pl. 5b) and Gournes (Zois 1969, pl. 28) were from the early stages of MM IB (MacGillivray 1998:72), it may be that these two cups may also be early MM IB or, perhaps, even late MM IA. The two-handled carinated cup was also found in the same general area as the other two.

34 The fact that the small kantharoi were likely imported from Anatolia helps to explain why the kantharoi shape appears on the mainland, and, in a more limited capacity, on Crete. Whereas the Mycenaeans seem to have imitated the kantharos shape wholesale in the MH period and continued to produce variations, the Minoans may have chosen to adapt the shape for their own purposes, (although cf. the metal kantharos from Gournia and the ceramic imitation from Malia, a different type of kantharos [Boyd Hawes et al. 1908, col. pl. C.1; van Effenterre and van Effenterre 1963:109, pl. XLIV:7882]).
at Mycenae, the Lerna kantharos, and the two-handed carinated cup. A cup from Phaistos has the same shape (Levi 1976, pl. 31c [45:5]), which is dated to MM IB (Fase Ia). It is possible that the Minoans liked the shape of this type of carinated kantharoi, but adapted it for their own purposes by removing one handle to use it as a cup.

The inspiration for the medium and tall-sized cups are perhaps better understood when the carinated cups with lobed or crinkly rims are compared to some metal and ceramic kantharoi. A silver lobed kantharos was found at Gournia (Boyd Hawes et al. 1908, col. pl. C.1 [53:1]), and its counterpart, a ceramic kantharos that looks almost exactly alike, was found on the Isle of Christ, near Malia (van Effenterre and van Effenterre 1963:109, pl. XLIV:7882 [53:2]). These were not the only kantharoi recovered on Crete, however. Tall lobed kantharoi were found at Anemospilia (Sakellarakis and Sapouna-Sakkellarakis 1997, fig. 393B [53:5]) and Gournia (Boyd Hawes 1908, pl. C.2–3 [53:4]), and a shorter lobed kantharos was recovered from Myrtos Pyrgos (Cadogan 1977–1978:75, fig. 12 [53:6]), for example. When the medium and tall-sized carinated cups with lobes are compared to these Cretan examples of kantharoi, one sees similarities: the size and diameter of the body, the tapering sides, the footed base, the fineness of the walls, and the thin ribbon handles. The only apparent difference seems to be a difference in the construction of the lobes and the removal of one handle (compare Cadogan 1977–1978:75, fig. 12 [53:6] with Evans 1921, fig. 139d [4:13] or Levi 1976, pl. 30e [7:3], for example). One example of a tall carinated cup (which has lobes) has an extension from the lip, opposite of the handle (Levi 1976, pl. 123a). It is not clear if this represents another handle that was not preserved or another feature. If it was a handle, this would imply that some carinated cups had two handles. Since most cups only have
one handle, however, this suggests that two handles were not popular and one was probably removed to adapt to the local aesthetic taste.35

Comparison between kantharoi and carinated cups seems to suggest that, perhaps, these cups were inspired by carinated shapes (of which kantharoi are one type) that were once imported to Crete (perhaps from Anatolia, as metal carinated vessels and kantharoi do appear there). Even so, it does appear from the decoration of the extant ceramic cups that the Minoans did produce metal cups in this shape after they adapted it for their own means and adopted it into their repertoire.

SMALL CARINATED CUPS (CS CUP)

Definition: Small to medium-sized carinated cups with one ribbon handle. The smallest cups range in height from 4–5 cm and 6–8 cm in diameter, while the larger examples of this type can reach ca. 7 cm high and between 10–13 cm at the rim.

The small carinated cups first appear in the MM IB period (MacGillivray 1998:73–74), perhaps as early as MM IA (Betancourt 1985:75, 77, fig. 48; cf. Momigliano 1991, who assigns the carinated cups to MM IIA). At Knossos, these cups fall within the MM IB to MM IIA range, and do not appear to continue beyond MM IIA (MacGillivray 1998:73–74). At Phaistos, the carinated cups either date to MM IIA (Fase Ib iniziale) or fall within MM II (Fase Ib). Perhaps, considering the date of the carinated cups at Knossos and the early MM IIA cups, these Fase Ib cups should also be dated to within MM IIA rather than MM IIB.

35 A gold carinated cup at the MET Museum in New York is similar in shape to the tall carinated cups. It has a high carination, tapering body, and ring base. The cup does not appear to have handles, however. The vessel was donated to the Museum, and, it is reported, that it came from Mycenae (Davis 1977:326, no. 149, fig. 266). The cup is unlike anything found at Mycenae to date, although it, apparently, has parallels in ceramic in the Cyclades and the mainland (Buck 1964, pl. 39:A7; Caskey 1972, pl. 83:D125). It is perhaps another type of carinated cup coming from the East (Anatolia, the Near East), but one can’t be sure due to its lack of provenience.
With some exceptions, most of the painted cups come from Phaistos. The decoration on the small ceramic carinated cups differs markedly from the decoration of the straight-sided cups. Whereas the decoration on the latter seems to be, on the main, variations of linear bands and repoussé work (see SS CUP 1, SS CUP 5, SS CUP 6), carinated cups are decorated in diverse motifs. Some of the metallic-inspired decorations that can be recognized include vertical and horizontal fluting, banding, as well as, perhaps, enameling/inlay work. If some of these cups were, in fact, inlaid, perhaps Phaistos was a center for this type of metalwork at this time (see CS CUP 4).

**CS CUP 1. Small carinated cup with horizontal fluting**

*Description:* Carinated cup with either horizontal grooves or painted horizontal lines. The incised grooves occur mainly around the mid-point or upper part of the body. The painted lines extend below the carination.

*Ceramic examples:* All the carinated cups with ridged grooves are in monochrome (mainly black).\textsuperscript{36} This slip is very often lustrous (Knappett 2005:145). This is a popular type of carinated cup. The grooves are, generally, closely spaced together and numerous, as opposed to the grooves on the straight-sided cups, which are few and widely-spaced (see SS CUP 4). The best examples (most closely resembling metal; grooves regularly-spaced) are thin-walled cups from Malia (Poursat and Knappett 2005, fig. 19 types 2, 3, pl. 27:769 and 772 \textsuperscript{[45:6]} and Knossos (MacGillivray 1998, pls. 3:95, 96 and 40:95, 96 \textsuperscript{[45:7–8]}). On the examples from Phaistos (Levi 1976, pls. 31c, 130p, 130s \textsuperscript{[45:9]}, 134e \textsuperscript{[45:10]}, 134h, 134i), the grooves are irregular and shallow or the lines are painted in (Levi 1976, pl. 134f \textsuperscript{[45:11]}, 134l \textsuperscript{[45:12]}), perhaps denoting a derived stage. Two examples of

\textsuperscript{36} The exception to this might be MacGillivray 1998, pl. 50:169. He calls this vessel a “tumbler,” although, in the description of the piece (1998:130) he mentions a “complete handle.” If the piece has a handle (not in illustration), this may be a carinated cup. The vessel has thick white horizontal bands outlined with black bands. The surface is ridged, like the other carinated cups of this group.
grooved vessels in a Fine Red fabric (a carinated cup: MacGillivray 1998, pls. 6:142 and 46:142; and the base of a grooved cup or tumbler: MacGillivray 1998, pls. 6:141 and 46:141) are thought to have been imported to Knossos from the Pediada region (MacGillivray 1998:88–89). The fact that the cups with the “sharpest” and best-defined grooves were found in East Crete (Malia, Pediada, Knossos) may perhaps suggest that the metal antecedents of these ceramic cups were originally made (or imported) in this region. This corroborates the evidence for the horizontal grooved straight-sided cups as well, which were only found in East Crete. With the exception of one demitasse cup (see MacGillivray 1998:57, pl. 3:106 and 44:106) with purported faint ridges around the rim, MacGillivray’s “Shallow Grooved Ware” (1998:56–57) would be entirely composed of carinated cups with horizontal grooves (if the painted “tumbler” from Knossos is included [see fn. 36]); thus, it is less a ware than a typological group reflecting the close imitation and derivation of a grooved metal vessel type.

*Date and Distribution:* All of the examples of cups with fine horizontal ridging from Knossos were found in the “Early Chamber beneath the West Court,” which suggests that the form began in MM IB (MacGillivray 1998:24–27). The cups from this context had well defined, well spaced, deep grooves. The ridging on the cups from Phaistos seem to have been less well executed: either shallower, not as well-spaced out, or painted on. All of these cups were found in MM II contexts (*Fase* Ib). They might be a more derivative form than the East Cretan examples. Cups were found in various contexts within the palace and without.

**CS CUP 2. Small carinated cup with vertical fluting**

*Description:* Small carinated cup with painted vertical lines. No ceramic examples have been found with incised or grooved vertical lines. The vertical ridging is expressed with paint.
Ceramic examples: Ceramic examples of carinated cups with vertical lines were found at Phaistos, but not at Knossos (Levi 1952–1954, fig. 110d; 1957–1958, fig. 160e [45:13]; 1976, pls. 133f [45:14]; 134a, 134b [45:16], 134d [45:15]). Some of the painted designs on these cups are similar to the fluting designs on other ceramic types. For example, the thin, spaced-out lines on one cup (Levi 1957–1958, fig. 160e [45:13]) is similar to the “fluting” seen on a semi-globular cup from the “Royal Pottery Stores” at Knossos (Evans 1921, pl. IIb [16:15]; also MacGillivray 1998, pl. 103:619); the design on another carinated cup (Levi 1976, pl. 133f [45:14]) is akin to that on another semi-globular cup of “egg-shell” thinness from Phaistos (Levi 1976, pl. XLVIIa [16:14]); and the thick, blunt lines of three other carinated cups (Levi 1952–1954, fig. 110d; Levi 1976, pl. 134b, 134d [45:15–16]) share similarities with the design on some bridge-spouted jars (Levi 1957–1958, fig. 153e [39:8]; 1965–1966, fig. 55c [39:7]; 1976, pl. 104a [39:6]) and other cups (MacGillivray 1998, pl. 14:375 [42:8]). Even though no molded, or two-dimensional, examples of carinated cups with grooved vertical lines exist, the painted designs of these cups suggest the possibility that metal cups with vertical grooves also once existed. Vertical grooves were very popular on the semi-globular silver cups at Tôd, and it would not be surprising if this technique was not employed on other types of cups as well.

Date and Distribution: The earliest cups at Phaistos with painted vertical lines were found in MM IIA (Fase Ib iniziale) contexts, including two from the bench in room IL (Levi 1976, pl. 134a, 134d [45:13]) and one from “Bastione II” (Levi 1957–1958, fig. 160e [45:13]). The rest of the examples, from various palatial (rooms LII, 11) and domestic contexts (House C), are dated to MM II (Fase Ib).

CS CUP 3. Small carinated cup with torsional fluting

Description: Small carinated cup painted in such a way that resembles torsional fluting. Handle is missing (?).
Ceramic examples: Only one example of a carinated cup with paint resembling torsional fluting was reported, at Phaistos (Pernier 1935, fig. 146 [45:17]). The large, white “triangular” features running around the cup, in combination with the alternating black spaces in between them, give the impression of the effect of light hitting torsional flutes. The motif is reminiscent of the decoration on a pyxis (PYX 2) found in the bench of room IL (Levi 1976, pl. 117l [53:7]) and on a straight-sided cup (SS CUP 2) from room XIII (Pernier 1935, fig. 136 [48:1]).

Date and Distribution: The cup from Phaistos with painted torsional flutes was found in room XIV of the Northwest Quarter of the palace. Pernier attributed the deposit to his Phase II, which would equate to Levi and Carinci’s MM II. The pyxis with the look-alike “triangular” motifs dated to MM IIA (Fase Ib iniziale); therefore, it is possible that this cup was also as early.

CS CUP 4. Small carinated cup with added bands

Description: Small carinated cup painted in such a way that the main element is a horizontal band that traverses much of the body. Band can be adorned with circles or other elements (as defined under 4.IV Ornamental Bands).

Ceramic examples: A handful of carinated cups display the same types of bands that appear on some straight-sided cups (see 4.IV Ornamental Bands and SS CUP 1). Two cups have linked dots, one with a single thin orange line running through it (Levi 1976, pl. 132k [45:18]) and the other with two (Levi 1976, pl. LIIIa [45:19]). If these are, in fact, representing metal bands, this would suggest that the dots were metal cut-out circles

37 A number of fragments from Knossos also show bands of linked dots (MacGillivray 1998, pl. 52). MacGillivray has included them in his short-rimmed carinated cup type 2 group (1998:74), but none of the other cups in this group are decorated. As these are just fragments (perhaps some part of the same cup?) and as the decoration is more suited to his tall-rimmed group (here called small carinated cups), they probably belong here.
that were held in place by one (or two) thin copper wire(s) (see 4.IV.1 Bands with Dots).
A cup with a criss-cross of two white bands overlaid by two thin orange strips may be
referencing a similar technique (Pernier 1935, fig. 227:3). To other cups (Levi 1976, pls.
132i [45:20]; LIIc [45:21.],) have an orange (or dark) band with white (and red) dots
running along it. The bands are outlined by pendant semi-circles, which are reminiscent
of the semi-circular cut-outs as seen on the gold hilt of a MM dagger from Malia
(Detournay 1980, 147–148, fig. 219). The dots may be representing inlays, repoussé dots,
embossed circles, or rivets.

The band motifs that were not found on the straight-sided cups (SS CUPs) but on
carinated cups include a band composed of “chevrons” rendered in reserve (the “negative
space” forming the design; Levi 1976, pl. LIIId [45:22]), a band of vertical fluting (or
chasing?) (Levi 1976, pl. 131p), and two cups with similar “checker board” bands (Levi
1976, pls. 131d [45:23], 133g), which parallel the same motif on the stand with appliqué
flowers (Levi 1976, pl. XXVIIa [55:3]) and a ewer painted in the same manner as the
stand (Levi 1976, pl. XXVIIb [55:4]). Both the chalice and the ewer display many
metallic traits. The checker board motif may be an exaggerated version of the “raised
square” design on an added band on a later jar from Zapher Papoura, near Knossos
(Matthäus 1980, pl. 36:303 [21:10]). It is likely that the two carinated cups, the chalice,
and the ewer were meant as a set (see 6.III.1 Ceramic Vessel Sets).

The motifs represented here (circles, dots, reserve chevrons, checkerboard) are
features that, if they were made in metal, could just as likely have been added bands or
inlay work, such as, for example, the inlay dots/circles on the electrum goblet from Shaft
Grave IV at Mycenae (Xenaki-Sakellariou and Chatziliou 1989, pl. XII:1 [23:8]).
Considering the fact that much of the decoration on the carinated cups seems to be
imitating inlay work (see CS CUP 4), then it is also possible that the “bands” were also
embedded within the surface of the vessel as inlays.
Date and Distribution: With the exception of a number of sherds from Knossos (see fn. 37), it appears as if small carinated cups with painted bands were mainly found at Phaistos. The earliest dated cup of this type is the example from the bench of room IL with a band of “reserved” designs (Levi 1976, pl. LIIIId [45:22]), dated to MM IIA (Fase Ib iniziale). All of the other cups mentioned here cannot be more accurately dated than to MM II (Fase Ib). The cups were found in various palatial and domestic (House C) contexts.

CS CUP 5. Small carinated cup with enameling or inlay work

Description: Small carinated cups with one ribbon handle. Decorated in motifs that may represent inlay work on metal originals.

Ceramic examples: Some of the possible means of discerning inlay/enamel work on metal vessels, and, hence, on ceramic vessels that may be imitating this technique, is to look for static motifs that repeat around a vessel, for single motifs, especially those that are figurative or symmetrical, for motifs in reserve, especially those contained within a “medallion,” or to motifs that resemble inlay pieces in other media (see discussion under 4.VII Inlay and Enameling).

Many small decorated carinated cups—if not slipped in one color—feature large symmetrical designs that run around the cup or, presumably, only face one side of the cup. The emphasis is on a vertical presentation of the design, as opposed to the motifs on most straight-sided cups, which seem to emphasize a horizontal or banded approach to decoration. It is difficult to find a motif that, besides the rosette or the spiral, is repeated more than once on carinated cups. Nevertheless, there are some similarities in execution.

38 Hard to tell just from the illustrations whether the designs on some cups repeat themselves on the other side of the cup. But, as the main design is opposite the handle and takes up much space, it is difficult to imagine how the same design can feature on the handle-side if the handle is in the way.
Besides a few examples of semi-globular cups (and, perhaps, some straight-sided cups\(^{39}\)), carinated cups are the only type of cup that feature motifs contained within “medallions.” The motif within the medallions is either a rosette (Levi 1976, pl. 131n [46:1], 133m [46:2], 133n [46:3]), a symmetrical flower-cross (Levi 1976, pl. 131f [46:4]), or a trefoil motif on a white ground (Levi 1957–1958, fig. 9 middle [47:2] see CM CUP 2). The three cups with rosette medallions share similarities. The single motif figures prominently and extends even below the carination. A band composed of two sets of pendant semi-circles strips facing each other runs around the cup, joining the medallion. The same semi-pendant circle design runs around the rim and the medallion of the cup with the cross [46:4]. In metal, this could represent a band of gold cut-outs in the shape of semi-circles. The shape of the petals—set on an orange background—on the rosette of two cups (Levi 1976, figs. 133m [46:2], 133n [46:3]) is very like the rosette on an inlaid stone libation table (Warren 1969:63, P328; Davis 1977:119 [34:7]), the inlaid rosettes on the so-called “Royal Draught-board” from Knossos (Evans 1921:387, 471–477 col. pl. V, figs. 338–340 [32:2]), the faience rosettes on an ivory lid from Tylissos (Evans 1921:482, fig. 345 [32:4]), the Minoan gaming board with inlaid faience rosettes found in Shaft Grave IV at Mycenae (Evans 1921:483, fig. 346; also Karo 1930, nos. 555–556, 558, pls. CLI, CLII [32:5]), and the inlaid silver rosette on the base of the Vapheio cup from Midea (Davis 1977, fig. 97). The use of the medallion may perhaps reflect the use of a primitive kind of enamel to contain the cut-out inlays within the circle.

Of course, inlays embedded by cold-hammering on metal vessels do not necessarily need to be contained within a medallion. Examples of later pieces with cold-hammering work or inlay with “niello” (see Xenaki-Sakellariou and Chatziliou 1989)

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\(^{39}\) There is a group of straight-sided cups with “Starburst” (rosette) and “Sunrise” (half a rosette) motifs (MacGillivray 1998:59–62). It is not clear whether they may be imitating inlay work, but it is not unlikely given the preference for the rosette in inlay work (game boards, stone, and metal) and the frequency of the rosette in “medallions,” a possible sign on inlay work.
show that the inlay cut-outs can be flush with the surface of the vessel. In theory, any design or motif can be cut out of gold or silver and embedded within a metal vessel. Without any extant examples from the MM period, this makes it more difficult to identify those designs that may have been inlaid or those that were derived from the imagination of the potter. There are some hints, however. One of the characteristics of the metal vessels with inlay from later periods is a “static repetition of forms…and a division into parts,” perhaps a result of the “necessity of having pieces small enough to adhere by the occasional overlaps at the edges produced by hammering” (Davis 1977:122). As with other metallic decorations, one can also expect symmetry in the repeated designs. On the other hand, as the electrum goblet from Shaft Grave IV demonstrates (Davis 1977:208–220, no. 83, figs. 172, 173; also Xenaki-Sakellariou and Chatziliou 1989, pl. XII:1 [23:8]), if the design on the vessel is more elaborate (and composed of smaller parts), then a larger design (at times, figurative) may be highlighted in isolation. The electrum goblet had three inlaid flowerpots, one in the front and back, and one opposite the handle. From every side of the cup, one would only see the one figurative motif at the center. This is a characteristic of some of the carinated cups—the isolation of one or two large symmetrical designs. Consider one cup with a white “cross” figure (Pernier 1935, pl. XXIVb [46:5]). The motif is large, relatively simple, and symmetrical. One could imagine gold cut-outs shaped into this form and embedded within the surface of the cup. The red dot at the center may have been an affixing rivet. Similar in conception but more ornate are a number of other cups with “flower-crosses” (Walberg 1987a:54–57, figs. 40, 42, calls them “crossing radiating motifs,” motif 10.i, or motif 11.iii, “vierpass whirling motifs”—although, really, the motifs are scattered in different categories as well) (Levi 1952–1954, fig. 109a; Levi 1961–1962a, fig. 27b upper right; Levi 1976, pls. 131k [46:6], 131m, 132a [46:7], 132b; MacGillivray 1998, pls. 7:170 and 50:170). Still others have single circles with dots (Levi 1976, pl. 132e [46:8]) or simple, large swirls (Levi 1976, pl. LIIb, 133o; MacGillivray 1998, pls. 24:657 and 108:657). They may have been
embellished with flourishes on the ceramic cup, but the essence remains a symmetrical design composed of simple parts. Another cup (Levi 1976, pl. LIId [46:9]) is unusual in depicting a primitive octopus (?) with an orange body and six simple, white “legs.” It is unusual in that figural motifs are rare on Middle Minoan pottery. Perhaps this was an early attempt at inlaying a figurative design.

Rather than one large motif, a few of the carinated cups have large, repeated designs composed of smaller parts. The rosette is a popular motif for inlay and it figures on two cups (Levi 1976, pl. 131c [46:10], 132l). They are executed in the same manner as the rosettes on the carinated cup with rosette and medallion (Levi 1976, pl. 131n [46:1]), a semi-globular cup made from “Egg-shell Ware” (Evans 1921:241, pl. IIc [44:6]; also MacGillivray 1998, pl. 103:618), and a straight-sided cup with rosette and dotted bands (MacGillivray 1998:62, fig. 2.4), which may also potentially be imitating inlay work as well. The repeated rosette motif seen on these particular carinated cups is also seen on one bridge-spouted jar from Phaistos (Banti 1939–1940, fig. 9b) and a demitasse from Knossos (McGillivray 1998, pl. 51:227), perhaps themselves emulating inlay work. Other cups with repeated, almost geometric, designs, include a cup with ivy motifs (Pernier 1935, pl. XXIb [46:11]), a cup with double “triangles” in reserve (Levi 1976, pl. 133c [46:12]), cups with swirling designs (e.g., Levi 1976, 132h, 132m, 132o), and more.

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40 The bottom half of the cup has S-shape loops. These resemble the “cloison” wires on the “Royal Draught-board” medallions (Evans 1921:474, fig. 338, ) and the loops on the straight-sided cup with imitative ajouré work (Evans 1921, fig. 186e). Other cups that have the same design include a carinated cup from Phaistos (Levi 1976, pl. 131l) and two other straight-sided cups, also from Phaistos (Banti 1939–1940, fig. 27; Levi 1976, pl. LIVb). The last two have additional flourishes of dots or floral sprays. It is possible that this looped motif represents filigree wire on metal cups.

41 Although inlay pieces tend to be simple and somewhat staid, it is possible that strips of gold were cut out to form spirals as well. It is my opinion that the decoration on a ceramic stand from Phaistos (Levi 1976, pl. LXXIV) is imitating gold inlay work. The first tier is decorated with spirals, linked dot bands, and red dots. The second tier has repeated “moaning faces,” tear drops and dots, while the third has pendant rosettes—the same motif that appears on some straight-sided cups (MacGillivray’s “Sunrise Style” motif; 1998:59).
Finally, two cups with “coffee bean” shapes (Levi 1976, pls. 133i [46:13] and 133h [46:14]), and perhaps a third drawing inspiration from these (Mackenzie 1903, pl. IV:6 [33:4]), are probably imitating the “coffee bean” shapes found on a very metallic-looking jug (Levi 1976, pl. XLIVa [33:1]).

In addition to the large centralized motif on carinated cups, some cups display decoration that is reminiscent of ajouré work, that is to say of metal cut into an openwork pattern. A good example of this decorative technique is seen on a straight-sided cup from Knossos (Evans 1921, fig. 186e [46:15]). One can imagine that if this cup were emulating a metal model, then the “loops” and flower-like motifs on the cup could very well have been cut out of one sheet of metal. The red dots interspersed between the “loops” would then represent the location where small copper rivets were added to adhere the ajouré work to the surface of the cup. In execution, the “loops” are reminiscent of the “cloisons” on the “Royal Draught-board” medallions [32:2 top], themselves inlaid with faience pieces and made to look like metallic wires (Evans 1921:474, fig. 338, col. pl. V). An example of a carinated cup with possible ajouré decoration is a cup from Phaistos with large circles enclosing lozenges (Levi 1976, pl. 133p [46:16]). It has red “rivets” in between the circles.

*Date and Distribution:* If the cups mentioned above from Knossos were indeed examples of copies of inlaid and enameled carinated cups, then the earliest cups with this decorative design would date to MM IIa (e.g., MacGillivray 1998, pl. 7:170 and 50:170, from the “Porcelain Deposit;” MacGillivray 1998, pl. 24:657 and 108:657 from the “Southwest room of the Royal Pottery Stores,” MM IIB–MM IIa). The large majority of carinated cups with possible enamel or inlay motifs from Phaistos can not be dated closer than MM II (Fase Ib), although one example from the room IL bench in the Southwest Quarter of the palace (Levi 1976, pl. 133c) is dated to MM IIa (Fase Ib iniziale). As the shape of the carinated cup does not extend much beyond MM IIa (MacGillivray
1998:73–74), perhaps the cups from Phaistos should be dated to this period as well. The cups from Phaistos were found in various contexts within the palace and House C.

**CS CUP 6. Small carinated cup with crinkled rim**

*Description:* Small carinated cups with one ribbon handle. Rim is pinched to form crinkles.

*Ceramic example:* Only one example of a small carinated cup with crinkled rim has been found, at Knossos (MacGillivray 1998, pl. 151:1032 and 154:1032 [46:17]). Large white sponge patterns were applied to a dark background. The decoration is not very reminiscent of metal decorative techniques, but the crinkled rim lends a “metallic” air.

*Date and Distribution:* The ceramic example from Knossos was found in the “Town Drain,” which is dated to MM IB (MacGillivray 1998:49–50). As other lobed and crinkled vessels are also dated to within MM IB–IIA (see CM CUP 2, CT CUP 2), it seems as if experimentation with these types of rims was a characteristic of this period. This cup, as it has a “crinkled” rim may be a derivative of carinated cups with lobes.

**MEDIUM CARINATED CUPS (CM CUP)**

Carinated cups that have a wide mouth, a high carination, and a tapering base, sometimes leading to a footed base. The height varies from ca. 4.5–8.0 cm tall and the diameter of the mouth falls within a range of ca. 7.0–17.0 cm wide (MacGillivray 1998:73–74, fig. 2.12 short-rimmed angular cup type 2).

**CM CUP 1. Medium carinated cup—plain rim**

*Description:* Carinated cup with wide mouth, medium size, tapering body, relatively high carination, one ribbon handle, and, occasionally, a footed base.
Ceramic examples: Most medium-sized carinated cups are either buff-reserved or monochrome coated (MacGillivray 1998:74). Three exceptions to this include a cup with barbotine decoration from Knossos (Evans 1935, pl. XXVIII:C1; also MacGillivray 1998, pls. 151:1033 and 154:1033), a dark cup with white pointillé designs running around it (Levi 1976, pl. 133q [46:18]), and a finely-made cup from Phaistos with spirals running around the upper body and floral patterns, interspersed with white hatched filling and orange and red dots, running around the lower body (Pernier 1935, pl. XXVI [46:19]). The lines of decoration converge to a red point on the base. The thin walls and the decoration is highly evocative of metal. The best examples of monochrome medium carinated cups come from Knossos (e.g., MacGillivray 1998, pls. 3:100 and 41:100 [46:20], pls. 27:909 and 134:909, pls. 910, 913). There are carinated cups of roughly the same size at Phaistos (Levi 1976, pls. 130n [46:21]), but they seem to be less common.

Date and Distribution: Medium-sized carinated cups with plain rims begin in MM IB and continue until MM IIA. The examples from Knossos come from Groups A, G, J, L and O (MacGillivray 1998:74) and the examples from Phaistos cited here are from the Northwest Quarter of the palace and the bench of room IL in the Southwest Quarter.

CM CUP 2. Medium carinated cup—lobed or crinkled rim

Description: Carinated cup with wide mouth, medium size, tapering body, one ribbon handle, and, occasionally, a footed base. Rim is pinched to form lobes or crinkles (many small pinches).

Ceramic examples: Only one complete example of a medium-sized carinated cup has true lobes (MacGillivray 1998, pls. 151:1030 and 153:1030 [47:1]). This cup, from Knossos,

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42 MacGillivray (1998:74, pl. 52) has included a number of painted sherds into this group of carinated cups. As the decoration on them (bands of linked dots) is more suited to the small carinated cup group, and as he himself says that his short-rimmed angular type 2 cups are not painted (1998:74), they should probably be considered CS CUP 3, see fn. 37.
has six lobes, similar in shape and number to the medium-sized kantharos from Myrtos Pyrgos (Cadogan 1977–1978:75, fig. 12 [53:6]). It may have been a imitation or close adaptation. Another lobed example was found at Malia, although it is not clear if this is a carinated cup or a kantharos (Poursat and Knappett 2005, fig. 19 type 9, pls. 35:808 and 50:808). If a cup, then, it too, would be a close adaptation. And finally, another fragmented cup from Phaistos was found, which was decorated with a repeated “three-leaf clover” pattern in a medallion surrounded by white “notches” in rows (Levi 1957–1958, fig. 9 middle [47:2]). Motifs in medallions are thought to suggest the possibility of inlay or enamel work in metal (see 4.VII Inlay and Enameling). If this example, which was made from a fine egg-shell ware, was indeed imitating a metal prototype, this would be one of the few cups with lobes that was decorated with inlay or enamel work.

Three cups, with footed bases, share some similarities. One is from Vasiliki (Seager 1907, pl. XXXI, figs. 1, 2; also Evans 1921:186, fig. 134d), while the other two from are Phaistos (Levi 1976, pls. 30e [47:3], 123e [47:4]). The rim is more crinkled in these cases. The spacing of the “crinkles” is the most even on the one from Vasiliki, as the other two seem to have an additional spout to interfere in the symmetry (see 3.II.3 Multiple-Lobed and “Crinkly” Rims for a discussion on how to differentiate a lobed rim and a crinkled rim). All three are painted with red, white, and orange designs, and one has three-dimensional ridging around the shoulder. The designs are relatively simple. While the example from Vasiliki still retains some fineness, the other two examples seem to have lost some “sharpness” and attention to detail, which may indicate that they are more derivative that the other examples. At the same time, one example from Phaistos (Levi 1976, pls. 30e [47:3]) still retains a high, up-swung handle characteristic of kantharos-

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43 On pls. 35 and 50 in Poursat and Knappett 2005, the vessel is shown as broken with only one side (and one handle) preserved. The assumed reconstructed version in fig. 19 shows two handles and a lobed rim. The shape could be just as readily a kantharos or a carinated cup of this type (which further demonstrates the relationship between these two types of vessels).
type vessels. This is perhaps another clue to the origin of the carinated cup. (Taller examples of carinated cups with lobed or crinkled rims are discussed under CT CUP 2).

*Date and Discussion:* The earliest lobed medium carinated cups are MM IB in date, and the latest are MM IIA (*Fase Ia/Ib iniziale* and *Ib iniziale*). One cup from Phaistos was found in the bench of room IL ([47:3]), whereas the other was found in the town of Chalara Sud, room iota ([47:4]).

The sharp profile of the cups at sites at Knossos and Eastern Crete (Myrtos, Malia, Vasiliki) and the relative derivation of the cups at Phaistos may indicate that metal medium (and tall-sized) carinated cups were originally found in Eastern Crete. This suggestion matches the observation that ceramic kantharoi seem to be an Eastern Cretan phenomenon as well (see 5.X Kantharoi).

**TALL CARINATED CUPS (CT CUP)**

Carinated cups that have a wide mouth, a high carination, and a sharply tapering base, sometimes leading to a footed base. The height varies from ca. 8.5–10 cm tall and the diameter of the mouth falls within a range of ca. 10–13.5 cm wide (MacGillivray 1998:74, fig. 2.12, short rimmed angular cup type 3).

**CT CUP 1. Tall carinated cup—plain rim**

*Description:* Tall carinated cup with a high, shallow carination. The body tapers markedly to a footed base. Most of the cups of this type are coated in a dark-grey brown to a lustrous black slip. Many either have, or are assumed to have, white spotting on the interior.\(^\text{44}\)

\(^{44}\) The catalog description for MacGillivray 1998, no. 992 is said to have white spots on the interior (1998: 168), but the illustration on pl. 30 does not show the spots. In other catalog entries, the spots are assumed. It is not clear if the Phaistian examples have white spots on the interior.
Ceramic examples: Three carinated cups were found at Phaistos (Levi 1976, pl. 134n, 134r [47:5]; Levi and Carinci 1988, pl. 83f) that resemble the tall carinated cups from Knossos (MacGillivray 1998, pls. 17:409 and 80:409 [47:7]; pls. 17:410 and 80:410; pls. 17:411 and 80:411 [47:8]; pls. 17:412 and 80:412; pls. 30:991–992 and 148:991–992; pls. 155:1038 and 156:1038). The decoration on some of the tall carinated cups from Knossos consists of two series of incised lines running horizontally around the upper and lower part of the body. The incisions are reminiscent of the decoration on the silver Vapheio cups from the eponymous site itself (Karo 1930, pl. CXXIII; also Davis 1977, nos. 39–40, figs. 116–117) and a stone imitation of these cups from Knossos (Warren 1969:40, P236; Davis 1977, fig. 38). In some sense, these carinated cups look like overgrown versions of the Vapheio cups. As with the Vapheio cups, the metal antecedents of these carinated cups may have had thick walls in order to support the structure of the vessel (other versions of straight-sided cups had mid-ribs to keep support the vessel). Also, like Vapheio cups, the date of these cups should probably be seen as MM IIIB–IIIA as well. MacGillivray (1998:74) states that the tall carinated cup (see his short-rimmed angular cup, type 3) was probably the latest version of the carinated form, which were shorter in MM IB and MM IIA (see CS CUPs and CM CUP 1). Thus, perhaps the Phaistian examples of “tall carinated cups,” which are dated to MM IIA (Fase Ib iniziale) and MM II (Fase Ib), could be tall versions of the medium carinated cup (CM CUP 1) or two early tall examples along a spectrum of carinated cup forms in the MM period.45

Date and Description: One of the Phaistian cups was found within the bench of room IL of the Southwest Quarter of the palace, which dates the vessel to MM IIA (Fase Ib iniziale). The others are also from MM II contexts (Fase Ib). The differs from the dates of

45 The examples cited by MacGillivray (1998:74) from Phaistos of “late” tall carinated cups (F. 534, F. 4687) are dated by Levi and Carinci (1988, pl. 83f, 83g) to Fase Ib, thus, MM II and not necessarily MM IIIB–MM IIIA. These strongly resemble F. 95, which is dated to Fase Ib iniziale, thus, MM IIA (Levi and Carinci 1988, pl. 83e and Levi 1976, pl. 134n).
the tall carinated cups from Knossos, which are mainly from the “West” and “South” “Polychrome Deposits,” and, thus, mainly dated to MM IIB–MM IIIA (MacGillivray 1998:33–34, 46–49), even though earlier, MM IIA, material has also been recognized in the “South Polychrome Deposit” (MacGillivray 1998:48). As mentioned above, the “early” cups from Phaistos might be taller versions of medium cups (CM CUP).

CT CUP 2. Tall carinated cup—lobed or crinkled rim

Description: Carinated cup with wide mouth, tapering body, and, occasionally, a footed base. Rim is pinched to form lobes or crinkles (many small pinches). The number of handles is variable (none to three).

Ceramic examples: The lobed or crinkled tall carinated cups are comparable to the medium-sized carinated cups with lobes (CM CUP 2), except that the foot is taller and the overall shape is more conical. One can also say that the shape is also similar to the kantharos, except that the mouth seems wider, and the body is shorter and less pinched. One example, a spouted and lobed carinated cup from Pseira (Evans 1921:192, fig. 139d [47:9]; also Seager 1910:19–20, fig. 5; also Betancourt 1999:113–114, ill. 37, fig. 12, pl. 17A) has three handles, one of which has a clay rivet at the join with the rim. The eight lobes are symmetrical and well executed. If, as Davis (1977:93–94) believes, it is a form that “merges the lobed kantharos with the typical Minoan bridge-spouted vessel,” this

46 Still another cup from Phaistos (Levi 1976, pl. 123a) might belong to this group, but the shape is a little unusual. This vessel is reminiscent of the rim sherd found at Knossos (MacGillivray 1998, pl. 22:647 and pl. 107:647; also Evans 1921, fig. 127f), although the shoulder on the Knossian vessel appears to be more shallow than the example from Phaistos. MacGillivray (1998:153, no. 647) calls the Knossos vessel a “pedestalled bowl,” but Evans’ reconstruction (1921:86, fig. 55c) suggests the vessel was a bowl, in the style of an imported Egyptian obsidian bowl (Evans 1921:178, fig. 127e; also Warren 1969:75, D228, P409). If MacGillivray’s reconstruction of this sherd is correct, and if the base tapered to a flat base, then the Knossian vessel might resemble this tall carinated cup from Phaistos (Levi 1976, pl. 123a). Both vessels are also speckled in white dots. The Phaistos cup only has one “lobe” for pouring, therefore, it is not a true tall carinated cup with lobes, but it also doesn’t resemble the other typical CT CUP 1. Perhaps it is a variation of CT CUP 2 or perhaps it was inspired by another metal/stone prototype.
would make it a *close adaptation* of two metal shapes. Another cup from Phaistos (Levi 1976, pl. 123d *[47:11]*)*, apparently, without handles, is of the same general size as the Pseira vessel, but the “lobes” or crinkles on the rim are haphazard and folded in on themselves. It seems further removed from any potential metal antecedent.

*Date and Description:* The tall carinated cup with crinkled from Phaistos *[47:11]* is dated to MM IIA (*Fase Ib iniziale*). The cup was found in Chalara Nord (room ζ2). Given the date of other lobed carinated vessels (CS CUP 5, CM CUP 2) and the other examples of the same type of vessel from Phaistos, the Pseira cup is also likely of this date.47

5.VI.4 STRAIGHT-SIDED CUPS (SS CUP)

The straight-sided cup is a medium-sized cup (usually ca. 3–7 cm high; diameter ca. 5–10 cm, although larger examples can go up to ca. 6–9 cm high and 12–15 cm wide in diameter) with straight sides and a flat base. The profile of the cup can range from short with vertical sides and a wide base (Walberg 1987a:148–149, form 45, nos. 201, 202, 204, 205; MacGillivray 1998:69, straight-sided cup, types 3 and 7, fig. 2.10:3 and 7) to the more usual, tapered and slightly convex profile (Walberg 1987a:148–149, form 45, nos. 203, 206, 207; MacGillivray 1998:69–71, fig. 2.10:1–2, 4–6, and 8–10). The cup is usually equipped with one vertical handle, which is attached under the rim and mid-body. One variation with a spool handle has been dubbed the “Vapheio cup” after the site it was first found.

The earliest straight-sided cups are found in contexts dating to MM IA (Momigliano 1991:97, fig. 3.14:6–7). This shape, along with handmade carinated cups, cylindrical cups, and new types of jugs and goblets (Betancourt 1985:71; Momigliano

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47 Seager (1910:19–20) did note that the deposit in which the vessel was found contained mainly MM I sherds. Perhaps this vessel, with its well-defined lobes and rivet should be seen as MM IB in date (cf. Betancourt 1999:113–114).
1991:97), is one of the few new shapes to appear in this period. In MM IA, these cups are handmade, (MacGillivray 1998:69, types 1 and 2), but in MM IB they begin to be made on the wheel (MacGillivray 1998:68–72), producing finer and thinner cups. The type continues down into the Late Minoan period (Betancourt 1985, fig. 93).

At first, the ceramic MM IA straight-sided cups do not appear overtly “metallic.” The straight-sided cup is a relatively easy shape to produce in ceramic, and the decoration of the MM IA straight-sided cups is similar to other pottery of the same time period. It is only through the later examples of straight-sided cups, which more closely resemble extant metal cups of this type, that one is able to posit metal prototypes for this shape, and, hence, to trace its evolution back to its first appearance. Nevertheless, even in MM IA, certain “metallic features” are in evidence: from the first, the straight-sided cup displays thin strap handles, a feature that is new in the Cretan ceramic repertoire (Momigliano 1991:97, fig. 3.14:6–7); the straight-sided cups appears alongside other new shapes, which can also be said to be metal-inspired, and some examples are painted with thin horizontal lines, a feature that foreshadows horizontal fluting and the emphasis on the mid-rib of later examples. Even so, this evidence is circumstantial compared to the “metallic” features evident in the straight-sided cups from MM IB, MM II, and MM III. Besides retaining the strap handle, various straight-sided cups are painted to resemble metal examples or plastically modeled to resemble the effects of metal decorative techniques, such as horizontal flutes or repoussé work (mid-ribs). These features are known to be “metallic” as a relatively large number of extant metal straight-sided cups have been found, albeit in later contexts, with these features. The variations of straight-sided cups are sorted here according to the manner in which the metal cup was decorated: with horizontal ridges, vertical flutes, foliate bands, a mid-rib, spirals, a Vapheio spool handle, etc. The ceramic imitations of one variant may differ slightly from one another, as there may be different ways of portraying a “metallic” feature (paint, clay, grooves, etc.).
but it is likely that the emulations were once copying the same metal prototype. At the end of the discussions about individual cups, there is a summary of straight-sided cups as a whole.

SS CUP 1. Straight-sided cups with ornamental bands

Definition: Cup with straight-sides, flat base, and one vertical handle attached at the rim. Decoration is evocative of ornamental bands.

Ceramic examples: To date, no extant metal straight-sided cup has been found with an ornamental band. Rather, many of the metal straight-sided cups from the Shaft Graves at Mycenae and mainland Greece have a repoussé mid-rib around the mid-section of the vessel (see, e.g., Karo 1930, pls. CVII, CVIII; also Davis 1977, 172, no. 55, figs. 136, 137). The mid-rib may have been a means of strengthening the thin walls of the metal vessel at a location of weakness. The mid-rib on ceramic vessels does not appear until the end of the MM period (see below, under SS CUP 7). Prior to MM IIB–IIIA, it is argued here that some metal straight-sided cups may have been strengthened by the addition of a metal bands. Although some bands do appear around the rim of some vessels, or, occasionally, elsewhere (e.g., Pernier 1935, pl. XX [47:15]), on the majority of MM straight-sided cups, painted bands occur around the mid-section of the body (e.g., [47:11–13, 47:16–18, 48:1–2, 6–7, 16–19], lending support to the notion that metal bands were the predecessors of the mid-rib. The focus on the mid-section of the straight-sided cup already begins in MM IA, a period when straight-sided cups also acquire ribbon handles—a novel feature at this time (Momigliano 1991:97, fig. 3.14:6–7). Some examples of these straight-sided cups in MM IB contexts still retain the simple white band around the middle (e.g., MacGillivray 1998, pl. 4:212 and 42:112 [47:11]).

The ornamental band on straight-sided cups begins in MM IA and, apparently, continues down to the end of the Middle Minoan period. The bands share the same

Date and Distribution: Straight-sided cups with ornamental bands occur throughout the Middle Minoan period. There appears to be a tendency for straight-sided cups in the first half of the Middle Minoan period (MM IB, MM IIA, MM II) to feature the ornamental band prominently (e.g., [47:11–17, 48:1–4, 6–7]), whereas, towards the end of the period (MM IIB–IIIA), the use the ornamental bands appears to be just one of a number of repeated motifs (foliate band, spirals, “chevrons”) on straight-sided cups (e.g., [47:18, 48:15–19, 49:6–9]). See SS CUP 5, SS CUP 6. Some of the early contexts (MM IB–MM IIA) at Knossos in which straight-sided cups with ornamental bands were found include the “Early Chamber beneath the West Court” [47:11–12], the “Northwest Pit,” the “Southwest room of the Royal Pottery Stores,” and the “South Polychrome
Deposit” [47:17]. The later straight-sided cups were mainly found in the “West Polychrome Deposit,” which has a MM IIB–IIIA date. The majority of straight-sided cups with ornamental bands from Phaistos were found in MM II contexts (Fase Ib).

SS CUP 2. Straight-sided cups with torsional flutes

Description: Cup with straight-sides, flat base, and one vertical handle attached at the rim. The decoration on the ceramic examples implies that a mid-rib or added band surrounded the center of the body and the rest of the vessel was decorated with torsional flutes.

Metal examples: No examples of straight-sided metal cups with torsional or slanted flutes have been found. Torsional flutes, however, have been found on conical silver cups at Tôd (e.g., Bisson de la Roque 1950, pl. XVI:70606 [14:5], 70618 [14:8]), suggesting the possibility that this decorative technique was used on metal vessels of this general shape.

Ceramic examples: Three straight-sided cups from Phaistos (Levi 1957–1958, fig. 153b [48:2]; Pernier 1935, fig. 135 [48:3], fig. 136 [48:1]) and one from Knossos (MacGillivray 1998, pls. 7:229 and 57:229 [48:4]) are painted in a way that is evocative of torsional fluting. Just like the white painted decoration on a pyxis (PYX 2; Levi 1976, pls. 117k [53:7]), a couple of bowls with two handles (Levi 1976, pl. 122b-c [37:4–5]), an angular cup (Banti 1939–1940, fig. 25 right), and three conical cups (Levi 1976, pl. 145q’–w’), the large, broad crescent shapes seem to mimic the effect of light and shadow on torsional metal flutes. On two examples (Levi 1957–1958, fig. 153b [48:2]; Pernier 1935, fig. 136 [48:1]), the cups have a painted band around the mid-section, which is evocative of the later repoussé mid-ribs. In fact, the band on one cup [48:2] appears slightly pushed out of

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48 This straight-sided cup has the same decorative treatment as a jug that was found in the “Room of the Olive Press” dated to MM IB–IIA. Therefore, it is likely that this SS CUP with the same decoration was a MM IIA hold-over in the South Polychrome Deposit.
the side of the vessel. Perhaps this was done in repoussé on the ceramic cup or perhaps a strip of clay was added to the surface of the vessel. If the latter, this cup would be the best evidence for the practice of added ornamental bands to the mid-section of metal straight-sided cups. On this cup, the painted fluting occurs above and below the band. The same applies to one of the other cups [48:1]. On the other two cups, it seems as if the fluting design was done in “reverse” of the other two: the fluting occurs as the main decorative element at the centers of the cups [48:3–4]. Perhaps the cups were meant to be complimentary. This is particularly evident by the exactly-similar bands that circle the mid-section of one cup (Pernier 1935, fig. 136 [48:1]) but the rim and base of the other (Pernier 1935, fig. 135 [48:3]).

Date and Distribution: Two of the straight-sided cups with painted torsional flutes from Phaistos were found in room XIII of the Northwest Quarter of the palace, dated to MM II (Pernier’s Fase II). These happen to be the “complimentary” pair featuring the same exact bands [48:1, 48:3]. The third was recovered in “Bastione II,” dated to MM IIA (Fase Ia/Ib iniziale). The cup from Knossos was found in the “Northwest Pit,” which contained much MM IB and MM IIA material. This group, then, should probably be dated to MM IIA.

SS CUP 3. Straight-sided cups with vertical flutes

Description: Cup with straight-sides, flat base, and one vertical handle attached at the rim. Relatively large vertical flutes run around the body; flutes are rounded at the edges.

Metal examples: Five metal examples of straight-sided cups with vertical flutes were found in the Grave Circles at Mycenae; two from Circle B and three from Circle A. A gold cup with flutes were found in Grave Nu (Mylonas 1972–1973, pl. 152; also Davis 1977:125–129, no. 25, figs. 98, 99), whereas Grave Iota produced a silver cup (Mylonas 1972–1973, pl. 101b; also Davis 1977:133–134, no. 28, fig. 104 [48:5]). Two metal vessels
were found in Shaft Grave V—one in gold (Karo 1930, pl. CXXIII; also Davis 1977: 143–144, no. 37, fig. 114) and another in silver (Karo 1930, fig. 72; also Davis 1977: 155–156, no. 44, fig. 119)—and a gold fluted cup was recovered from Shaft Grave IV (Karo 1930, pls. CVI, CVIII; also Davis 1977:172–173, no. 56, figs. 138–139). According to Davis (1977:156), only the silver cup from Shaft Grave V was Minoan-made, whereas the others were locally manufactured. This was the most fragmentary of the recovered cups, perhaps indicating its long use at the time of its deposition. The silver cup from Grave Iota [48:5] strongly resembled the Minoan cup, indicating the conscious effort to imitate Minoan metalwork (Davis 1977:134). Perhaps not coincidentally, these are the only two silver fluted cups in the tombs (Davis 1977 for predilection for use of silver by the Minoans). Grave Iota is considered one of the earliest in the sequence of burials at Mycenae (Graziadio 1991:406, table 1), thus the artisan’s emulation of the Minoan model “may be responsible for the success of the cup” (Davis 1977:134). The cup found in Shaft Grave V may be an antique at the time of deposition (see more under 6.II.3 Origins. Shaft Graves at Mycenae).

Ceramic examples: Ceramic straight-sided cups with painted vertical flutes as the main design on the vessel is rarely found at Knossos and Phaistos. One unique cup with three-dimensional vertical flutes (Pernier 1935, pl. XXVII [48:7]) and another straight-sided cup with what appears to be a crinkled rim, from Phaistos, are the closest representations to the Minoan metal cup (Levi 1976, pl. 123f [48:6]). The first cup is painted all white with an orange band. Red dots are superimposed on the band, and on the handle is a clay rivet (Pernier 1935, pl. XXVII [48:7]). One (or more?) red flowers are painted on the upper shoulder. The white color of the cup evokes silver prototypes, whereas the orange band and red dots is evocative of copper inlaid bands. The “crinkled” body evokes three-dimensional fluting. The second cup looks like a taller version of the first cup (Levi 1976, pl. 123f [48:6]). This cup is painted with an arcade pattern on the lower register and white...
vertical lines around the rim, evoking vertical fluting. The crinkled rim may be an attempt to imitate the arched ends of the flutes as they reach the rim of the metal cup. The one glaring difference between the metal cups in the Shaft Graves and the ceramic ones is the addition of an ornamental band (orange with dots) on the ceramic examples. Perhaps some Middle Minoan fluted straight-sided cups had added bands, which may have fell out of favor by the end of the period.

That not all Middle Minoan straight-sided cups with vertical fluting necessarily had ornamental bands is suggested by a couple of cups from Malia (Poursat and Knappett 2005, pl. 28:814, 819 [48:8]). The two cups have broad, alternating vertical bands of white and dark. These cups, dating to MM II, with their short stature, broad “flutes,” and straight walls, are quite reminiscent of the metal examples from Grave Gamma (Mylonas 1972–1973, pl. 58b2 and pl. 58c; also Davis 1977:129–130, no. 26, figs. 100, 101) and Shaft Grave IV (Karo 1930, pls. CVII, CVIII; Davis 1977: 172–173, no. 56, figs. 138, 139) at Mycenae. This lends credence to the idea that earlier metal Minoan cups were the models for these later Mycenaean examples.

Date and Distribution: One ceramic cups from Phaistos with crinkled rim (Levi 1976, pl. 123f [48:6]) was found in room LVIII the Southwest Quarter of the palace, whereas the other (Pernier 1935, pl. XXVII [48:7]) was found in room XIV of the Northwest Quarter. The Malia cups were found in Quartier Mu. All were dated to MM II.

SS CUP 4. Straight-sided cups with horizontal flutes

Description: Cup with straight-sides, flat base, and one vertical handle attached at the rim. The body is decorated in horizontal grooves (flutes) from the top to the bottom.

Metal examples: Two gold cups with horizontal grooves were found in Shaft Grave IV at Mycenae (Karo 1930, pls. CX, CIV; also Davis 1977:173–175, nos. 58, 59, figs. 140, 141
The objects apparently follow the Minoan fashion of decorating metal vessels with horizontal grooves, such as, for example, on the silver jar from Shaft Grave IV (Karo 1930, pl. CXXXIV; also Davis 1977:149–155, no. 43, fig. 120) and the bronze jar from Knossos (Evans 1928:645, figs. 402, 410, 411a; also Davis 1977, fig. 121). The handles are thought to have been manufactured on the mainland, however (Davis 1977:174–175). It is possible that the original handles of the Minoan-made vessels had broken off and were replaced with locally-made handles. In this case, these vessels should probably be thought as Minoan-made (see more under 6.II.3 Origins. Shaft Graves at Mycenae).

Ceramic examples: It appears that preferred method of imitating metal straight-sided cups with horizontal grooves was to render the ceramic cup with three-dimensional grooves. This cup appears at Knossos in two shapes. The taller version with regularly spaced grooves (MacGillivray 1998, fig. 2.10 type 12) is mainly painted in monochrome, with or without “white spotting” around the rim (MacGillivray 1998:143, pls. 17:404–407 and 79:404–407 [48:10–13]; pl. 154:1037; pl. 156:1044). The shorter version (MacGillivray 1998, fig. 2.10 type 11, pls. 18:423, 18:426) has only a few grooves around the upper register. They are coated dark-brown throughout, with “white spots” around the rim and a thick band of orange around the lower body with added white S-pattern on top. Two cups that belong to the last type (Levi 1976:477, fig. 730; Levi 1976, pl. 209p) and one with fine grooves (Levi 1976, pl. 129s [48:14]) was found at Phaistos, although straight-sided cups with horizontal grooves apparently doesn’t seem to have been very popular shape in the Mesara (McGillivray 1998:71). Ceramic cups with horizontal grooves found at Gournia (Boyd Hawes et al. 1908, 38, pl. VI:3), Anesmopilia (Sakellarakis and Sapouna-Sakellarakis 1997, figs. 385b, c), and the Trapeza Cave (Pendlebury et al. 1936, fig. 14:531, 536, 547, 548) suggest that the type of cup was manufactured in Eastern Crete. The same distribution pattern also appears to be the case,
for small carinated cups with horizontal grooves (CS CUP 1), which may have been the predecessor of the straight-sided cup with horizontal grooves.

A number of straight-sided cups with horizontal grooves (MacGillivray 1998:143, pls. 17:404–407 and 79:404–407) were decorated in the “white-spotted” technique. As the shape of this ceramic cup type is clearly metallic, then, perhaps this “white-spotted” technique was also referencing metallic decorative techniques (see pp. 443–444). Just like on the metal fragment found in Shaft Gave V at Mycenae (Davis 1977:168–170, no. 54, figs. 134–135), the white spots appear exclusively on the interior of some of these ceramic cups.

Date and Distribution: Many of the cups with horizontal grooves from Knossos come from the “West Polychrome Deposits” (MacGillivray 1998:33). A couple were found in the “Early Town House” Deposit (MacGillivray 1998:50–51). This is a mixed context, but due to the white spotting on some cups, it is more likely that these can be dated to end of MM IIB, early in MM IIIA. Similar cups were found in the “Knossos North House,” however, indicating that at least some examples of these cups were first produced before the end of MM IIB (Catling 1982:53, fig. 116; Warren and Hankey 1989:57). The cup with fine ridging from from Phaistos was found in room LIV of the Southwest Quarter of the palace dating to a MM II context.

Discussion: It seems that the straight-sided cup with horizontal grooves was more popular in Eastern Crete than in the Mesara. Poursat and Knappett (2005:114) say that ceramic rivets on straight-sided cups are rare, except on the ones with horizontal ridges, and that maybe these types of cups are in a decline in the period of Quartier Mu (MM II). Given the date of straight-sided cups with horizontal grooves may only begin in MM IIB into MM IIIA, it is more likely that these types of cups were only just beginning to be produced at Malia. As ceramic carinated cups with horizontal ridges (CS CUP 1) and
straight-sided cups with horizontal flutes (SS CUP 4) look the “sharpest” at Malia (and Knossos), and, especially if ceramic rivets were found on these types of cups, it is possible that the center of production of the “ridged” cups was Malia.

**SS CUP 5. Straight-sided cup with repoussé**

*Description:* Cup with straight-sides, flat base, and one vertical handle attached at the rim. The decoration evokes repoussé work.

*Metal examples:* Five metal straight-sided cups with repoussé mid-rib and spirals were found in Shaft Grave V and at Peristeria, near Pylos. The handles are all ribbon handles. From Shaft Grave V comes one silver cup (Karo 1930, fig. 66; also Davis 1977:156, no. 45, fig. 123 [48:15]), one gold cup with pronounced mid-rib (Karo 1930, pl. CXXV; also Davis 1977:141–142, no. 35, fig. 112), and fragments of one (or more?) silver cups (Karo 1930, fig. 66; also Davis 1977:142–143, no. 36, fig. 113). The Peristeria tholos tomb III yielded two gold straight-sided cups, one with a spiral net (Marinatos 1965:117, pls. 135a, 135b, 138a, 138b; also Davis 1977:251–252, no. 99, fig. 196) and the other with only one row of spirals above and below the mid-rib (Marinatos 1965, pls. 136b, 139a, 139b; also Davis 1977: 252–253, no. 100, fig. 197). According to Davis (1977:42, 144, 156, 252, 253), one silver cup from Shaft Grave V (Karo 1930, fig. 66; also Davis 1977:156, no. 45, fig. 123 [49:15]) was of Minoan manufacture, whereas the others seem to have been mainland products. The two straight-sided cups from Peristeria may be contemporary or slightly later than the three cups from Shaft Grave V (Pelon 1974:40, 42; Davis 1977:251). No metal straight-sided cups have been found with repoussé designs of shells.

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49 The handle on the “Minoan” cup from Shaft Grave V (Karo 1930, fig. 66; also Davis 1977:156–157, no. 44, fig. 123) was not recovered, and thus, it is not known whether the original handle was of the “Vapheio” type or another ribbon handle.
Ceramic examples: No examples of ceramic straight-sided cup with repoussé mid-ribs and painted spirals have been found on Crete for the MM period. In Crete, during the MM period, a series of ceramic cups do display spirals in combination with painted horizontal bands, however. These may be earlier version of the cup with repoussé mid-ribs. Some of these cups were found at Knossos (MacGillivray 1998, pls. 10:309–311 and 72:310–311; pls. 11:327 and 72:327 [48:20]; pls. 11:330 and 73:330 [46:18]; pls. 11:331–334 and 73:331–334; pls. 30:997 and 148:997 [48:17]) and others at Phaistos (Pernier 1935, fig. 237 right; Levi 1976, pl. 128g [48:19]; Levi 1976, pl. 128i). These cups generally have a painted band around the center of the cup (plain orange band, orange band with dots, or slanted “chevron” patterns) and large painted spirals. Occasionally, the large band of spirals runs around the center of the vessel (e.g., [48:20]). In addition to the repoussé spirals on the straight-sided cup from Shaft Grave V (e.g., [48:15]), large repoussé spirals occur on metal jars (e.g., Matthäus 1980, pls. 32:259, 32:261e [reconstructions from pieces]), bowls (e.g., Higgins 1997, fig. 181; also Davis 1977:109–110, no. 19, figs. 87, 88), and jugs (e.g., Karo 1930, pl. CIII; also Davis 1977:237–238, no. 91, fig. 186) from the Shaft Graves as well. It is a relatively common motif in repoussé. It is for this reason that the large white spirals on the ceramic cups are thought to represent repoussé as opposed to any other metallic technique. Another reason is the discovery of a ceramic cup with large stamped spirals from Knossos (MacGillivray 1998, pls. 19:434 and 82:434 [48:16]). The spirals are almost the exact copies in style and size as the ones seen on the Minoan cup from Shaft Grave V [48:15]. The spirals on the ceramic cup are even painted a thick white paint, perhaps as a way to evoke the silver color of the original. The chevrons also tie this cup to the other ceramic examples (e.g., [48:17, 48:19, 48:20]). This cup with three-dimensional spirals suggests metallic cups with similar repoussé features probably existed, and were emulated in painted form.
The only other motif that can be identified as likely imitating repoussé work on straight-sided cups is the shell. One cup with repoussé shells was found at Phaistos (Pernier 1935, pl. XXXb [48:21]) and another was recovered from Knossos (MacGillivray 1998, pl. 19:433 and 82:433 [48:22]). The entire lower body of the cup from Phaistos was covered in tightly-packed shells, which were likely made from pushing out of the surface of the vessel from the inside with a die (or even an actual Pecten shell). The same applies to the cup from Knossos, but it appears as if the species of “shell” was different than the one from Phaistos.

Date and Distribution: The ceramic straight-sided cups with spirals and bands from Knossos were all found in the “West” and “South” Polychrome Deposits, which is mainly composed of MM IIB–MM IIIA material, although some earlier vessels were recognized in the “South Polychrome Deposit.” The cup with stamped spirals [48:16] was found in the “West Polychrome Deposit.” The cups from Phaistos were found in the palace in Fase Ib contexts (MM II), in rooms XXVII–XXVIII, LIV, LVIII, for example.

SS CUP 6. Straight-sided cup with foliate bands

Description: Cup with straight-sides, flat base, and one vertical handle attached at the rim. Vertical and horizontal repoussé foliate bands decorate the body of the vessel.

Metal examples: One gold cup from Shaft Grave IV at Mycenae (Karo 1930, pl. CX; also Davis 1977:173–174, no. 57, fig. 142 [49:2]; also Matthäus 1980, pl. 75:10) and fragments of one or more silver cups from Shaft Grave V (Karo 1930, fig. 65; Davis 1977:164–165, no. 51, fig. 131 [49:1]) were decorated in repoussé plants. The plants—a repeated pattern of rounded leaves extending from a single stem—are executed vertically around the body of the gold cup. It is difficult to determine whether all the fragments of the silver cup belong to one single vessel. Karo (1930:150) suggested that at least some of the fragments are from a straight-sided cup. One fragment (Davis 1977, fig. 131
bottom right [49:1 bottom right]) indicates that some of the repoussé plants/foliate bands were horizontally positioned around the rim of the cup. On these fragments, the foliate branches have extra loops in the center of the leaves, given depth to the motif. One rim fragment still had gold leaf adhering to it (Davis 1977:164). The foliate bands are reminiscent of the foliate design on some bronze vessels, such as the added rim (probably gilded) on a basin from Knossos (Evans 1928, fig. 402; also Matthäus 1980, pl. 39:325 [8:4]) and the band on the shoulder of a bronze jar from Asine (Matthäus 1980:189, pl. 33:283 [21:9]). The silver cup(s) was apparently a Minoan product, whereas, the gold cup with repoussé plants seems to have been a local product (Davis 1977:165, 174). The fact that the silver cup was in fragments—like the Minoan straight-sided cup with vertical flutes from Shaft Grave V—may perhaps be indicative of the old age of the piece at the time of deposition.

Ceramic examples: A number of straight-sided cups were decorated with plants/foliate bands. The decorative band on one cup is particularly evocative of the rounded repoussé leaves on the gold cup from Mycenae (MacGillivray 1998, pls. 30:1007 and 149:1007 [49:3]), although on this ceramic cup, the foliate band is horizontal, around the rim. On two other ceramic cups, one from Phaistos (e.g., Levi 1976, pl. 127h [49:4]) and the other from Knossos (MacGillivray 1998, pl. 9:273 [49:5]), the “foliate bands” are vertical and a little less precise.

A group of ceramic straight-sided cups have “foliate bands” that are quite derivative in that they appear as linear sprays (e.g., MacGillivray 1998, pls. 10:312 [49:7]; 10:314 [49:8]; 10:320 and 72:320; 10:323 and 72:323 [49:9]; 10:325 and 72:325 [49:6]). It is possible, as Evans suggests (1921:269–270) that this type of “foliate band” may have have originated as dentate bands made from simple cut-out triangle leaves in the early half of the Middle Minoan period (see [26:8–9]), but by the later period (see [26:11–12], they may have become conflated with more realistic representations of foliate
bands on other media and/or repoussé foliate bands, as seen on the metal silver cup from Mycenae (see also 4.IV.4 Bands with Foliate Designs). This may help to explain the presence of these “foliate sprays” \[49:6–9\] as well as more accurate foliate bands \[49:3–5\] on straight-sided cups found in the same types of contexts (“South” and “West” “Polychrome Deposits”).

**Date and Distribution:** The cup with rounded foliate band around the rim from Knossos (MacGillivray 1998, pls. 30:1007 and 149:1007 \[49:3\]) was found in the “South Polychrome Deposit” (MacGillivray 1998:46), which is a context with mixed pottery. The pottery is mainly MM IIB, although earlier (MM IIA) and later (MM IIIA) were also found. Given the resemblance of the foliate band on this cup to the one on the gold cup from Mycenae, the ceramic cup is likely of a later date. The other Knossos vessels were all found in the “West Polychrome Deposit,” dating to MM IIB–IIIA. The cup from Phaistos with vertical foliate band (Levi 1976, pl. 127h \[49:4\]) can not be dated closer than MM II (Fase Ib), although, given the date of the other ceramic examples, perhaps this cup should be dated to MM IIB. This cup was found in room LIII of the Southwest Quarter of the palace.

**SS CUP 7. Straight-sided cup with mid-rib**

**Description:** Cup with straight-sides, flat base, and one vertical handle attached at the rim. It is distinguished by the rounded horizontal bulge in the middle of the body (the mid-rib) (MacGillivray 1998:72, type 13, fig. 2.10:13). The walls are left plain, without any repoussé or engraved decoration on the body.
*Metal examples:* Only one plain metal straight-sided cup with mid-rib, made from gold, was found in Shaft Grave IV at Mycenae50 (Karo 1930, pls. CVII, CVIII; also Davis 1977: 177, no. 55, figs. 136, 137 [49:10]). The horizontal rib was executed in repoussé.

*Ceramic examples:* Replicas of the plain straight-sided cup with mid-rib in metal were found at Knossos, Phaistos, and Kamilari. These ceramic cups were mainly found in MM IIIA contexts. A couple of cups with mid-ribs were found in contexts potentially earlier than MM IIIA. One cup from Knossos (MacGillivray 1998, fig. 2.10 type 13, pls. 17:403 and 79:403 [49:11]) was found in the “West Polychrome Deposit,” which is dated to MM IIB–IIIA (MacGillivray 1998:33). The context very likely represents the filling in of the Kouloura of material after an earthquake and the remodeling of the area prior to the construction of the Neopalatial Palace in MM IIIA (MacGillivray 1998:34). The pottery from this context is mainly MM IIB in nature with some sherds dated to MM IIIA based on stylistic grounds (MacGillivray 1998:33). The cup potentially could have been deposited at the end of the Middle Minoan period. The vessel is coated a semi-lustrous black throughout with some traces of white spotting below the rim and in the interior (MacGillivray 1998:79, no. 403).

Potentially earlier in date than the Knossos cup is an example of a ceramic straight-sided cup with a double repoussé mid-rib from Phaistos (Levi 1976, pl. 129o [49:13]). This cup is said to come from room XCIV of House C, and is dated to MM II (Fase Ib). It is somewhat different from the typical straight-sided cup with mid-rib in that the center mid-rib appears to have been split in two by an indented canal running around the vessel. The effect is that the vessel appears to have a “double” mid-rib, reminiscent of the metal straight-sided cup with “double mid-rib” from Shaft Grave VI (Karo 1930, fig.

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50 A bronze cup with a repoussé rib was found in Grave Gamma at Mycenae (Mylonas 1972–1973, pl. 59b; Matthäus 1980, pl. 42:355). However, this conical cup does not seem to conform to the shape, decoration, and handle attachment as the other straight-sided cups in the Shaft Graves. Perhaps it is local hybrid shape.
That the mid-rib may have begun sometime during the Protopalatial period is also supported by the example of a basin-like vessel with mid-rib and two horizontal handles, also found in a *Fase* Ib (MM II) context (Levi 1976, pl. 117h [13:9]), and the example of a bucket-jar (Levi 1976, pl. 27b [41:9]) with incipient mid-rib from a MM IB (*Fase* Ia) context. Still earlier than these is the example of a straight-sided cup with what appears to be an added strip of clay around the center of the cup (Levi 1957–1958, fig. 153b). It is dated to MM IIA (*Fase* Ia/Ib *iniziale*). This cup suggests then that the practice of adding a mid-rib may have grown out of the practice of adding a strengthening band on most straight-sided cups.

*Date and Distribution:* The contextual dates of these cups seem to point to the practice of adding repoussé ribs to straight-sided cups during MM IIB and MM IIB–MM IIIA. That the mid-rib (or at least an added band at the mid-point of the cup) may have been a popular feature of metal straight-sided cups is suggested by the large number of straight-sided cups that have painted horizontal bands around the middle of the body. The emphasis on this part of the body with horizontal bands begins as earlier as MM IA (see Momigliano 1991) and continues down to into the LM period.

**SS CUP 8. Straight-sided cups with inlay work**

*Description:* Cup with straight-sides, flat base, and one vertical handle. Decoration possibly emulates inlay or enamel work.

*Metal examples:* A number of metal straight-sided cups with inlay work have been found at sites on the Greek mainland (e.g., Verdelis 1967, pl. 30–31.1; also Davis 1977, 263–267, no. 109, pls. 210–213 [49:14]). These are mainly dated to LH II–IIIA. Some of the inlay motifs on straight-sided cups (mainly of the Vapheio cup variety) include double axes, rosettes, bulls horns and, perhaps, ivies, circles, and nautili (Xenaki-Sakellariou and Chatziliou 1989 see pl. [31]). Closer in date than these examples is an inlaid electrum
goblet, which was found in Shaft Grave IV at Mycenae (Davis 1977, 208–220, no. 83, figs. 172–173; also Xenaki-Sakellariou and Chatziliou 1989, no. 18, pl. XII [31:9]). This goblet featured three isolated flower beds composed of many smaller cut-out pieces [31:9]. The inlay work on this piece is sophisticated and precise. One expects it took the Minoan metalworkers sometime to perfect the technique to reach this level of finesse. Therefore, if the goblet is dated by its context to roughly MH III–LH I (or earlier), it stands to reason that the Minoans were practicing their inlay techniques at an earlier time, that is, in the Middle Minoan period.

Ceramic examples: In theory, inlay cut-outs could take the form of any motif. Therefore, it is difficult to ascertain with certainty whether any particular painted motifs on straight-sided cups, besides ornamental bands, are emulating inlay work. Some of the characteristics of metal inlay and enamel work is the repetition of the same motif, an enclosed “medallion,” a “reverse” motif, or the isolation of one single, large motif (see V.II Inlay and Enameling for more). The rosette has proven to be a popular inlay motif on other vessel types (see, for example, SG CUP 6 [44:5–6], CS CUP 5 [46:1–4], BSJ 8 [41:1–3]). The isolated rosette also appears on some ceramic straight-sided cups from Knossos and Phaistos (e.g., Pernier 1935, figs. 150, 228 right; Banti 1939–1940, figs. 20, 41; Levi 1965–1965, fig. 56a; Levi 1976, pl. 126g; MacGillivray 1998, pls. 9:276 and 69:279 [49:17]; pls. 11:338 and 71:338 [49:16]), and, perhaps, it too represents the emulation of an inlaid rosette. Another inlay candidate is the motif of a presumed “sacred ewer” on a cup from Knossos (MacGillivray 1998, pls. 9:278 and 69:278 [49:18]). For the significance of this type of vessel, please see under JUG 1. It is a candidate as it is a simple, meaningful, and isolated motif. Also, the semi-circle pendants at the rim and base evoke the gold semi-circle cut-outs at the base of a dagger found at Malia (Detournay 1980, fig. 219:5).
In a different style altogether is the possible emulation of a number of repeated rosettes and lines (MacGillivray 1998, pl. 7:190 [49:15]). Here, the rosette is not featured in isolation, but it is repeated around the cup. The rosette is composed of a series of radiating lines terminating in dots. In between the swathes of rosettes are bands of chevron motifs. Here, too, the chevrons are composed of lines terminating in dots. If one imagines the dots as circular cut-outs similar in kind to the row of gold circles seen on the electrum goblet from Shaft Grave IV at Mycenae (Davis 1977, 208–220, no. 83, figs. 172–173; also Xenaki-Sakellariou and Chatziliou 1989, no. 18, pl. XII [31:9]), it is possible to see the design on this cup as inspired by simple inlaid gold lines and circles. The cup comes from the “Northwest Pit” deposit at Knossos, which was mainly filled with MM IB and MM IIA pottery. Given the early date of the cup and the simple design on the cup, perhaps this cup reflects some of the earliest kinds of inlay work, if indeed, the cup is emulating this metallic technique.

*Date and Distribution:* The straight-sided cups with possible inlay work emulation were found in different time periods. As mentioned above, the cup from the “Northwest Pit” [49:15] was likely MM IB–IIA in date. The cups with isolated rosettes from Knossos were found in the “West Polychrome Deposit,” which is dated to MM IIB–IIIA. The cups with the same motif from Phaistos were found in various MM II contexts (Fase Ib) from the Northwest and Southwest Quarters of the palace.

*Overall Discussion of Straight-sided Cups*

Straight-sided cups appear in MM IA (Momigliano 1991). At the very beginning, even though the decoration is not particularly “metallic,” they do feature thin strap handles, a feature that is new in the Cretan ceramics repertoire (Momigliano 1991, 97, fig. 3.14, 6–7). This indicates that perhaps the earliest ceramic straight-sided cups were modeled on metal examples, although it is difficult to say at present, since the shape is a relatively
easy one to produce in ceramic. By MM IIA, ceramic straight-sided cups were likely imitating metal straight-sided cups that featured torsional (and maybe other types of) fluting) and perhaps featured added metal strips of embossed/indented or fluted bands. The central band was a feature that was very frequently emphasized, from MM IA down to MM IIIA, in the ceramic repertoire. Perhaps the central band was a necessary feature on thin-walled metal cups to strengthen the vessel. By the end of MM IIB and continuing into the LM period, the central band was replaced by a repoussé mid-rib (except for those vessels with vertical repoussé work) on metal cups with ribbon handles. Also, by the end of the period, straight-sided cups with repoussé work (spirals, shells, foliate bands) were being manufactured.

As the spool handle appears on vessels found in MM IIB–IIIA contexts at Knossos—on a jug rim from the “Royal Pottery Stores” at Knossos (Evans 1921:245, fig. 183b.1; 1928, fig. 121; also Davis 1977:46, fig. 35 [10:10] and a rounded cup (RD CUP 5) from the “Loomweight Basement at Knossos” (MacGillivray 1998, pl. 25:818 [10:12])—a note on Vapheio cups (straight-sided cups with spool handle) is warranted here. The spool handle (Vapheio type) appears to have been imported into Crete from Anatolia, perhaps as early as MM IIB (see 3.II.5 under Vapheio handle and 6.II.1 Origins. Anatolia and the Near East). This feature may have first appeared on imported bowl types, according to the ceramic imitations. It is possible that the spool handle was then grafted to the local straight-sided cup in order to become the Vapheio-style cup. This cup type took on a life of its own as a popular shape in the MM IIIA and LM periods. There is some chronological overlap between Vapheio cups and the straight-sided cups with ribbon handles and repoussé work. Plain (or slightly incised) Vapheio cups (Davis 1977:147–149, 194–195, nos. 39, 40, 70) occur in Shaft Graves IV and V along side the other types of straight-sided cups. By LH II, however, it appears like the straight-sided cup with repoussé work and ribbon handle is no longer manufactured. Only Vapheio cups
appear in tombs of a later date. Plain Vapheio-style cups appear to be the earliest and those inlaid with figural motifs were the latest in the series of Vapheio cups, beginning from LH II–LH III. Thus, what began as the simple straight-sided cup with ribbon handle was overtaken by the more popular Vapheio cup, but only sometime in LH II.

5.VI.5 DEMITASSES (DT CUP)

In MacGillivray’s terminology of pottery shapes for the Middle Minoan period, his “rounded” cup category groups together shapes here called “semi-globular cups” (SG CUP; MacGillivray 1998:74–77, fig. 2.14 nos. 3–7) as well as other smaller round cups that do not share the semi-globular shape (MacGillivray 1998:74–77, figs. 2.13, 2.14, no. 1). At the same time, another group of “rounded” cups are not mentioned in MacGillivray’s terminology. In order to avoid any confusion, these three “rounded” or globular cup shapes have been divided here into three different cup classes. The unique rounded cups are listed under 5.VI.2 Rounded cups (RD CUP), the semi-globular cups are discussed under 5.VI.1 Semi-globular cups (SG CUP), while the remaining cup types are hereby referred to as Demitasses (DT CUP). The demitasse (at least on Crete) is a relatively small cup with a round or globular profile. The maximal width of the cup is usually near the base. At times, the demitasse may have a slight carination at the neck and a flaring rim. Many examples have thin, even egg-shell thin, walls. Demitasses range in height from approximately 6–10 cm high with a rim diameter around 3–5 cm wide (MacGillivray 1998:74 and catalog).

Metal examples: The different sorts of ceramic demitasses differ slightly from one another, and it is possible that each group with similar features (i.e., DT CUP 1, 2, 3, 4) had different metal prototypes. The origin of the demitasse may have been a cup or a

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51 The demitasse cup group includes MacGillivray’s “Fine Buff Squat Rounded” cup types (1998:75, fig. 2.13), but not his “Fine Buff Rounded” cup types 1 and 2 (1998:76, fig. 2.14, nos. 1–2).
One ceramic demitasse has a very tankard-like profile (Levi 1976, pl. 123h [50:2]), which looks very similar to a group of bronze tankards that were found in Central Anatolia at the site of Kinik-Kastamonu, roughly dating to 1400–1250 BCE (Emre and Cinaroğlu 1993:680–681, no. 9, fig. 8, pl. 131.1 [50:1], nos. 10–15, figs. 9–13, pl. 131:5). It has the same low carinated shoulder, convex lower body, and straight rim. In all respects, it looks like a very near copy, except that the neck of the metal example is longer and more narrow. The only problem is that this particular ceramic demitasse is the only one with this exact profile. The other demitasses are slightly different; hence, a metal tankard of this kind can not be the prototype for all demitasses. That the inspiration for some of the demitasses may have been a tankard-like vessel, however, is further suggested by two ceramic demitasses (Evans 1921:187, fig. 136g; also MacGillivray 1998, pls. 5:123, 31:123, and 44:123 [50:3]; Levi 1976, pl. XXIIa [50:8]). On these vessels, the handles are attached to the shoulder and neck and not at the rim. This type of handle attachment is unique in the MM period, but strongly resembles the handle position on many EM III one-handed tankards (e.g., Rutter 1979, fig. 1:3).

Another group of ceramic demitasses have a more globular profile (DT CUP 1). These cups are more akin to a silver vessel from Tôd that resembles a cross between a cup and a tankard due to its vertical spool handle (Bisson de la Roque 1953 et al. pl. XXXI:15148 [50:4]). The demitasses in this group are defined by their bulbous profile (especially near the base) and lack of a neck. The only difference between these ceramic cups and the metal example is the substitution of the spool handle for a ribbon handle on the cups. As was discussed under RD CUP 5, the spool handle may have been too heavy or too unstable in ceramic, and, thus, it may have been easier to use ribbon handles on the demitasses. It is also possible that the original metal prototypes did not have spool handles. Another set of silver cups from Tôd have similar shapes to other demitasses, but
these have ribbon handles. Each of these cups are slightly different in shape. The first cup is a small vessel with a rounded lower profile and a very slight flaring rim (Bisson de la Roque 1950, pls. XII:70583 [50:5]). In profile, it resembles some demitasses that are shorter and with wide, open mouths (e.g., MacGillivray 1998, pls. 3:104 and 42:104; pls. 3:106 and 42:106; pls. 5:122 and 44:122 [50:6]). The second cup from Tôd under consideration has slightly constricted neck and wide flaring rim (Bisson de la Roque 1950, pl. XIV:70590). Although it has two handles and a wider neck than the ceramic examples, perhaps a cup related to this silver vessel was the inspiration for some demitasses (DT CUP 2, 3).

Thus, as the various examples of metal vessels attests, it is possible that different types of metal prototypes were the inspiration for the different types of demitasses. In general, the ceramic demitasses fall into three general categories—globular cups with no neck, globular cups with repoussé ring at the neck, cups with sharply off-setting rim, and cups with lobed rims—shapes that may, perhaps, represent the original profiles of different kinds of metal cup or tankard-like vessels.

DT CUP 1. Demitasse with no neck

*Description:* Small globular cup with maximal width near the base of the vessel. Very slightly flaring rim; flat base; one ribbon handle. Decoration varies.

*Ceramic examples:* Four examples of demitasses of this sort were found at Knossos (MacGillivray 1998, pls. 3:104 and 42:104; pls. 3:106 and 42:106; pls. 5:122 and 44:122 [50:6]) and eight were found at Phaistos (Levi 1976, pls. 119g, 123c [50:7], 123g, 125e, XXIIa, XXIIIa [50:8], LVc, LVd). Three of the examples from Knossos were coated in an uniform semi-lustrous dark-brown color (MacGillivray 1998:126, nos. 104–106). The fourth was decorated with a white ladder pattern around the middle and evenly spaced white circles filled with alternating yellow and orange horizontal lines above and below.
the ladder band (MacGillivray 1998, pls. 5:122 and 44:122 [50:6]). The band is reminiscent of the bands around the middle of some straight-sided cups, bridge-spouted cups, or tumblers (see SS CUP 1, BSJ 5, TMB 2), and the large circles are reminiscent of the possible inlay motif on a couple of semi-globular cups from Knossos (SG CUP 6). If this is indeed emulative of an added metal band, then, perhaps, the added band at this location may have helped to reinforce the walls of the cup at this location. Some demitasses from Phaistos were also painted with horizontal bands that resemble the “added band” motifs on other ceramic vessels. One demitasse, in particular, has “metallic”-looking bands (Levi 1976, pl. LVc [50:9]). This cup is painted in thick white horizontal bands and the center two bands are superimposed with red dots. Red vertical lines running from the rim to the base separate the dots into their own “squares.” Four medallions around the rim are decorated with inverse swastikas. Red dots on white bands are also seen on certain straight-sided cups (e.g., Pernier 1935, figs. 110a, 237b; Levi 1976, pl. 127a), and, in metal, these bands may, perhaps, represent gold bands with either copper cut-outs or repoussé dots (see 4.IV.1 Bands with Dots). Two demitasses have vertical bands. One has simple white or red and white vertical bands (Levi 1976, pl. XXIIa and Levi 1976:57, fig. 58), whereas the other has dark bands with white circles filled with orange and red dots alternating with bands of “checkers” (Levi 1976, pl. 119g). The dots call to mind the large orange and red dots on the painted Knossos example, but on a smaller scale (MacGillivray 1998, pls. 5:122 and 44:122 [50:6]). The vertical bands recall the bands on some tumblers (TMB 2). Horizontal bands are present on a number of other demitasses (Levi 1976, pl. XXIIIa [50:8], 125e), including one cup with stamped band of stamped linked dots around the rim (Levi 1976, pl. 123g), which

In the illustration (Levi 1976, pl. LVc), it appears as if the handle is reconstructed. As the handles on the other demitasses are thin, strap handles, it is likely that his one originally had strap handles as well. The side spout is known from other demitasses (e.g., Levi 1976, pl. XXIIIb). Levi and Carinci 1988 do call it a “tazza” or cup, therefore, they do not consider it a jug.
seems to be the three-dimensional version of the painted linked dot motif (see 4.IV.1 Bands with Dots).

Four cups in this group of demitasses were exceptionally finely made. One cup was simply coated in a very lustrous black paint (Levi 1976, pl. 123c [50:7]). The lustre of the vessel, as well as the “hammered” profile of the cup into rounded sections lends the cup a metallic air. The “hammered” appearance is similar to certain bridge-spouted jars with similar profiles (see BSJ 4). One of these bridge-spouted jars (Levi 1952–1954, fig. 109e [39:10]) was found in room LII, which is next to the room in which the demitasse with the “hammered” appearance was found. Both are dated to MM IIA (**Fase Ib iniziale**); perhaps they were used together as a set. Within the same room as the “hammered” demitasse (room IL) was another demitasse painted in orange curvilinear bands (shaped like ivy?) dotted with red circles; white spots cover the rest of the vessel (Levi 1976, pl. LVd [50:10]). The orange bands with red dots is reminiscent of the painted orange bands with red dots on other demitasses (see above). If the design on this cup is emulating a metallic surface treatment, then, perhaps, the curvilinear bands represent inlaid (or added) bands of copper that are punctuated by rivets, studs, or cut-outs. The third finely made demitasse was egg-shell thin (Levi 1976, pl. XXIIIa [50:8]). It too has a “hammered” appearance; the clay was pinched at regular intervals during manufacture, producing rounded sections in profile. The decoration consists of repeated bands of orange and yellow and rows of four-petaled flowers. Around the interior rim are white circles surrounding a yellow dot within an orange circle, the same motif seen two other demitasses from Phaistos (Levi 1976, pl. 119g; and possibly also Levi 1976, pl. 125e). The orange and yellow horizontal bands on this “hammered” demitasse are located where the vessel wall is constricted. In metal, this would be the best place to add metal wires to strengthen the vessel. This cup was found in the lower level of room CVII (House L) in a MM IIA (**Fase Ib iniziale**) context. The final, fourth finely-made demitasse of this group
is an unusual cup with molded double arcades (Levi and Carinci 1988, pl. 82d [17:14]). As the cup was broken when found, it is possible that the rest of the vessel was also “fluted.” In style, it is similar to a semi-globular cup (SG CUP 2) from Knossos that also had molded arcades (Evans 1921, fig. 183a:1 [43:1]). Perhaps both cups were influenced by the same metallic prototype. The demitasse with double arcade was found in room LX of the Southwest Quarter of the palace in a context that may date to MM IIA (Fase Ib iniziale).

Date and Distribution: See under DT 4.

DT CUP 2. Demitasses with repoussé ring around the neck

Description: Small globular cup with maximal width near the base of the vessel. Body constricts at the neck, then flares out slightly at the rim. One ribbon handle. Repoussé ring (bulge) around the neck. Decoration varies.

Ceramic examples: Two examples of this type of demitasse were found at Knossos. One is coated in a monochrome dark-brown color (MacGillivray 1998 pls. 3:107 and 42:107), whereas the other is decorated with a row of double spirals mid-body, which are outlined at the top and bottom by white and red horizontal bands (MacGillivray 1998, pls. 5:123, 31:123, 44:123 [50:3]). The repoussé band around the neck has white vertical strokes. This repoussé band is reminiscent of the torus rings around the necks of certain ewers, rhyta, and jars (see 3.II.2 Torus Ring and Separate Necks) as well as to the added bands on certain metal jars (e.g., Matthäus 1980, pl. 36:303 [21:16]). Ordinarily, a repoussé ring of this sort would indicate the location of a join between the body and the neck, but, in the case of the demitasse, however, it may be that the torus ring/added band at the neck was meant as a reinforcing agent at one of the vessel’s weakest points (see below, under DT CUP 3).
The decoration on the Knossian demitasse is echoed by the decoration thought to be a DT CUP 1 cup from Phaistos (Levi 1976:623, fig. 1008b, also Levi and Carinci 1988, pl. 82g). This cup also has rows of small white spirals and bands of vertical strokes that resembles the horizontal spirals and painted strokes on the repoussé ring of the Knossos cup. The difference lies in the orientation of the decoration. As this latter vessel was incomplete when found, perhaps it too belongs in this group.

Date and Distribution: See under DT 4.

DT CUP 3. Demitasses with sharply off-set rim

Description: Small globular cup with maximal width near the shoulder. Body constricts at the neck; tall flaring rim. May have side spout. One ribbon handle. Decoration varies.

Ceramic examples: One known example of a demitasse of this sort was published at Knossos (MacGillivray 1998, pls. 5:121, 31:121, and 43:121 [50:11]), whereas a number of examples were found at Phaistos (Levi 1976, pls. 123h [50:2], LVA [50:12], XXIIIb [50:13]; Levi and Carinci 1988, pl. 81g). One cup from Phaistos has a small clay rivet at the rim, suggesting the inspiration for the shape was a metallic prototype (Levi 1976:623, fig. 1009a, also Levi and Carinci 1988, pl. 81g). This cup, and another (Levi 1976, pl. XXIIIb [50:13]), had pinched rims, providing them with a spout perpendicular to the handle. This latter cup also had an unusual side handle in addition to the more common vertical handle. The triangular-shaped vertical side handle is attached to the lower body, at the maximal width of the vessel. Side handles of this sort are more common on bronze vessels (Matthäus 1980), and it may be that this type of handle was inspired by a metal prototype, although this can not be demonstrated at the moment. This cup had a repoussé
ring around the neck. The decoration of the ceramic cup is suggestive of inlay work (simple repetitive white T shapes with double lozenges) and, perhaps, the rim was later riveted to the body (and covered by a torus ring) after the inlay work was complete (see 4.VII Inlay and Enameling for characteristics of inlay work). Another demitasse from Phaistos may provide an alternative clue to the presence of the repoussé bands on certain demitasses. The cup has two painted bands, one orange and the other red, at the juncture between the body and the neck (Levi 1976, pl. LVa [50:12]). If this can be construed as emulating copper bands, perhaps the repoussé rings at the neck on some demitasses are not torus rings meant to cover a join, but rather strengthening bands meant to maintain the constricted shape of the vessel at its weakest point. Although less globular than the other examples in this group, the cup that most closely resembles the bronze tankards in Anatolia (see above) (Levi 1976, pls. 123h [50:2]) does have a constricted neck and rounded shoulder. Perhaps it, and the demitasse with the extra triangular handle (Levi 1976, pl. XXIIIb [50:13]), were taller versions of the smaller, more globular versions (Levi 1976, pl. LVa [50:12]; MacGillivray 1998, pls. 5:121, 31:121, and 43:121 [50:11]).

Date and Distribution: See under DT 4.

DT CUP 4. Demitasse with lobed rim

Description: Demitasse cup with globular body and four lobes.

Metal examples: As yet, no metal examples of globular demitasses with lobed rims have been found, but, just as some other cup types may have had their inspiration from kantharoi and other lobed vessels (e.g., CM CUP 2, CT CUP 2), perhaps the lobes on these demitasses were also inspired by metal prototypes. The clay lobes seem fragile and

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53 While the repoussé torus ring around the neck would suggest that this vessel should belong to the DT CUP 2 group, the overall size, width and profile of this cup, as well as the tall flaring rim fit better in this group.
somewhat impractical for drinking. If the lobes were meant for pouring, any trefoil rim could have done the job, if not better. The fact that these demitasses have four lobes may indicate that they were influenced by metal prototypes.

*Ceramic examples:* Two examples of demitasses with lobed rim were found at Phaistos (Levi 1976, pl. 30b [50:15], XVIIc [50:14]). Both cups have four deep lobes and a vaguely similar decoration. One cup (Levi 1976, pl. 30b [50:15]) has horizontal repoussé ridges running the length of the body. Each ridge is painted with groups of white dots, which, alternating with black spaces along each ridge, gives the appearance of a checkerboard. The ridges may perhaps be an allusion to a “hammered” metal prototype. The other demitasse (Levi 1976, pl. XVIIc [50:14]) has a painted band of white and red dots running around the middle of the cup. The double row of white dots with red dots in between, while very different from the “checkerboard” decoration of the other, nevertheless, from afar, does give the same decorative impression. One of the lobed cups was found in room LXV (inferior) of the Southwest Quarter of the palace, whereas the other was found in room C of House B.54

*Date and Distribution:* The earliest demitasses are the lobed examples from Phaistos (DT CUP 4) and some DT CUP 1 from Knossos, which were found in the “Early Chamber beneath the West Court” (MacGillivray 1998:24–27). All are dated to MM IB (*Fase* Ia). All the other demitasses from Phaistos were invariably found in contexts dating to MM IIA (*Fase* Ib *iniziale*).

With a few exceptions, the demitasses from Phaistos were mainly found in either room IL of the Southwest Quarter of the palace (Levi 1976, pls. 123c [50:7], LVA [50:12], LVc [50:9], LVd [50:10], Levi 1976:57, fig. 58) or in room CVII of a building (House L)

54 Given the preponderance of other “metallic” types from House C next door, perhaps this cup found in House B fell from the upper floor of House C?
on the Acropoli Mediana (Levi 1976, pls. XXIIa, XXIIIa [50:8], XXIIIb [50:13]; Levi 1976:623, figs. 1008b, 1009a, 1009b, 1014a). This room was furnished with fine pottery (Levi 1976:622–624), including a possible rhyton (Levi 1976:623, fig. 1015), was lined with benches, and was part of a house that seemed set to stand apart from the other houses around it (Militello 2012:246). The fact that a large number of demitasses were found in one room of this house (at least 7 out of approximately 16 examples) may show a preference by the members of the house for this type of cup, or the cups speak to some unknown activity that was carried out in this house. The other four examples of demitasses from Phaistos were found in “Bastione II” (Levi 1976, pl. 119g, 123g), room XCIV from House C (Levi 1976, pl. 125e), and in rooms LXV and LXIII, small magazine rooms in the Southwest Quarter of the palace (Levi 1976, pl. 123h [50:2]). All the demitasses from Knossos were concentrated in one main context as well, in the “Early Chamber beneath the West Court.”

**Discussion:** A certain number of the demitasses had a side “spout” in that the rim was folded into a lobe perpendicular to the handle (e.g., Levi 1976, pl. XXIIIb [50:8]; Levi 1976:623 fig. 1009; MacGillivray 1998, pl. 44:123 [50:2]). Another two cups had four proper lobes (Levi 1976, pl. 30b [50:15], XVIIc [50:14]). In order to drink from the cup, one imagines that a spout would not be strictly necessary, and the lobes on the two examples would very likely make it even more difficult to drink from these vessels. Perhaps, the spouts and the lobes, then, suggests that at least some demitasses were specifically intended for pouring (libations or toasts)?

**5.VII GOBLETS (GBT)**

Rounded goblets that resemble modern day “egg-cups,” hence the name sometimes given to these vessels. The rounded footed goblet can be traced as far back as EM IIA, or even as far back as EM I (Walberg 1987a:17–18; Hood 1971:38, fig. 14; Betancourt
1985, fig. 27H; Momigliano 1990), and continues until MM IIIA, whereupon, it disappears rather suddenly from the MM IIIA repertoire (Momigliano 1991:248). In EM II, it is one of the shapes made in Vasiliki Ware (Betancourt 1985, fig. 27H). As some of the Vasiliki shapes may have been inspired by metallic vessels, it is possible that this goblet was also inspired thusly. Of the four types of rounded goblets identified by MacGillivray for the Middle Minoan period (1998:66–68, fig. 2.7 types 1–3 and fig. 2.8 type 3—included here because of its round shape; also, Walberg 1983:183, form 36, nos. 196–200; 1987a:148, form 44, no. 200), only two are novel to the Middle Minoan period. The first two rounded types are handmade or semi-handmade. MacGillivray’s type 1 goblets are crudely made and left plain, whereas his type 2 rounded goblets are all painted with a monochrome coat and a thick white horizontal band below the rim (MacGillivray 1998:66). This latter painting style continues the wide horizontal band decoration from the EM III–MM IA periods (Momigliano 1991, e.g., figs. 1, 20, 23, pl. 19, 22, 28, 45). Only the third (fig. 2.7 type 3) and fourth types (fig. 2.8 type 3) have innovative decoration. They also the finest made of all the rounded goblet types, being fine wheelmade variants. Only these two types are considered here. The decoration on these goblets is evocative of gadrooning, banding, and inlay work.

Although the goblet shape continues from the EM period on Crete, some new shapes in MM may have been inspired by new kinds of metal goblets. A silver rounded cup was found at Eskiypar in Anatolia (Toker 1992, fig. 29 [50:16]), dating to the second half of the third millennium (EBA). The rim flares more than the ceramic examples, but the pedestal foot is the same. This silver goblet gives an idea what a metal goblet would have looked like.
GBT 1. Short rounded goblets

*Description:* Globular goblet with small foot.\(^{55}\) Height is approximately 7 cm and width at diameter is approximately 10 cm. This is the wide rounded goblet type that MacGillivray (1998:66–67) calls his fine buff rounded goblet type 3 (1998:66, fig. 2.7 type 3).

*Ceramic examples:* One example of this type of goblet was found at Knossos (Evans 1921, fig. 183a:2 \[50:17\]; also MacGillivray 1998, pl. 135:925). The fine, “Egg-shell” Ware goblet has three rows of petaloid shapes outlined in white arches. Below each row is a thick white band of paint with superimposed hatched lines. Evans (1921:243) describes the petaloid shapes as “delicate fluting…reproduced in orange yellow on the dark ground in a manner that seems to represent gold inlay.” Instead of inlay, however, it may be that the petaloid shapes are, in fact representing repoussé gadrooning. Compare, for example, the added metal rim from Gournia done in repoussé gadroons (Silverman 1974:12–13, pg. 13, no. 1 \[20:10\]) with the decoration on the goblet. Even the rounded ends of the gadroons are represented by white arches on the ceramic vessel. The yellow color may be denoting the gilding of the features. The white horizontal lines may represent added or inlay bands affixed to the original for decoration and to provide stability.

Two goblets of similar shape were found at Phaistos (Levi 1976:614, also Levi and Carinci 1988, pl. 80a; Levi 1976, pl. 119e \[50:18\], also Levi and Carinci 1988, pl. 80b). One example (Levi 1976:614) was fragmentary and not illustrated. The other (Levi 1976, pl. 119e \[50:18\]) appears to have had a lustrous monochrome finish with perhaps

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\(^{55}\) The illustration for this goblet in MacGillivray 1998:165, no. 925 is slightly different than Evans 1921, fig. 183a:2. The foot is more flaring in the newer illustration, and the decoration is not quite the same. It is probably the same cup, but maybe it was restored differently. Or more pieces were found.
band of white semi-circles. If this were the case, perhaps the decoration on this goblet suggests an ornamental band.

**Date and Distribution:** The goblet with possible imitation of gadrooning was found on the “Early Floor beneath the Room of the Olive Press” and dates to between MM IB to MM IIA. The complete Phaistos goblet was found in Chalara Sud, room iota. Both of the Phaistos goblets date to MM IIA (*Fase Ib iniziale*).

**GBT 2. Tall rounded goblets**

**Description:** Finely made goblets with rounded body tapering to a small foot. Height is approximately 11–12 cm and diameter at the rim is approximately 9 cm wide. MacGillivray (1998:67, fig. 67, fig. 2.8 type 3) calls this a “conical” goblet, but the profile makes it appear as a taller, thinner example of his “rounded goblet” type 3.

**Ceramic examples:** Three goblets with thin walls were found at Knossos with decoration that may be imitating inlay work. These include a goblet with two rows of “ivy” motifs (MacGillivray 1998, pl. 22:651, 100:651, 108:651 [50:19]), one with alternating bands of white dots and bands of zig-zag lines with red dots (Mackenzie 1903, pl. VI:2 [50:20]; also MacGillivray 1998, pl. 108:652), and one with large white rosettes with red centers (MacGillivray 1998, pl. 51:227). The “ivy” goblet [50:19] has orange and white horizontal bands around the rim, mid-body, and, presumably, the bottom. The ivy design is simple enough for inlay, but it could, conceivably, also have been repoussé work (gilded or not). The zig-zag lined goblet [50:20] seems to be evoking metal and stone. The white dots are reminiscent of Melian obsidian (of which one chalice was made, Warren 1969, P195) and the zig-zag lines with red dots are reminiscent of ajouré work (see 4.VII Inlay and Enameling). If this goblet were, in fact, emulating another vessel, perhaps metal cut-outs (in the style of ajouré work) were overlaid on top of a stone goblet—as other ceramic goblets do seem to be emulating banded stone—or the potter was simply trying to
encapsulate both the quality of metal and the quality of stone in one vessel. Alternatively, the white dots may either be evoking an early form of “white-spotting,” “denting” (where the metal is hammered into round indentations), or inlay bands (the dots do seem to occur in rows). The orange bands around the vessel may be meant to evoke strengthening bands.

The rosettes on the final goblet (MacGillivray 1998, pl. 51:227) are evocative of the inlaid rosettes on the gaming board from the “West Temple Deposits” (Evans 1921:470–472 and 480–482, fig. 337, reconstruction fig. 344 [32:3]), other inlaid objects, and other vessels with possible inlay and enamel work (see more under 4.VII Inlay and Enameling). Incidentally, the decoration is very similar to that on a bridge-spouted jar (Banti 1939–1940, fig. 9b) and two carinated cups (Levi 1976, pl. 131c [46:10], 132l) from Phaistos, which perhaps suggests the use of similar metallic techniques on all of these vessel types.

*Date and Distribution:* Two of the goblets mentioned here with possible decoration imitating inlay (ivy and zig-zag designs) were found in the “Southwest Room of the Royal Pottery Stores,” dating to MM IB–MM IIA. The other goblet (with rosettes) comes from the “Northwest Pit,” a mixed context with mainly MM IB, MM IIA material.

5.VII JARS (JAR)

For the sake of convenience, jars are hereby described as vessels of all sizes that are, most often, taller than wide, have a relatively wide mouth, a horizontal rim, and (often horizontal) handles attached to the body, but not usually to the rim. These are distinguished from jugs, which are defined here as small- to medium-sized vessels that have at least one vertical handle attached to the rim and, in most cases, a defined spout for pouring. As some jugs can have horizontal rims, one of the most important
characteristics distinguishing jugs from jars is the vertical handle(s), which aids in the function of pouring with one hand.

Many jars in the MM period are larger vessels (such as pithoi, pitharakia, stamnoi, for example) that have rounded horizontal handles on the shoulder or mid-body. The general pattern of the group of vessels with rounded horizontal handles attached at the body is that they are mainly domestic in nature, i.e., large jars, deep bowls, basins, lekanai, and short jars that were not necessarily used as tablewares. The same can be said for the bronze vessels with horizontal handles. They are generally large vessels (cauldrons, basins, deep bowls, large jars) that were useful in domestic contexts, but not for display as fine tablewares (e.g., Matthäus 1980, pls. 5–9, 44–45, 52). Therefore, perhaps the vessels with horizontal handles (excluding bridge-spouted jars) are the ceramic versions of the (larger) bronze (domestic) vessels. The use of bronze may have been the economical choice for these large pieces. It is possible that the ceramic versions of the bronze vessels were imitations of the metal versions, but without any other markers on the ceramic vessels besides the horizontal handle that could either be a ceramic or metal trait, all that can be said at the moment is that the ceramic and bronze versions were most likely functional equivalents (see Chapter 2 for more information). There are a few exceptions to this rule, however. The following list of vessels are peculiar jars that show some evidence for metallic antecedents.

JAR 1. Cylindrical spouted jars

Description: Unusual jar shape. Although spouted, this type is hereby called a jar because of its wide mouth and its similar profile to bucket-jars (BKT) and bridge-spouted jars (BSJ). This is a straight-sided jar with flat base and round or oval cross-section. The rim varies in appearance. Usually has a triangular spout and at least two horizontal handles rising above the rim. At times, will have a vertical handle opposite of the spout. The
height of the jar varies from 8–12 cm (without handles) and approximately 9–15 cm wide at the base.

Metal examples: Metal examples of large “straight-sided cauldrons” were found in later contexts from Archanes, Chania, Phaistos, Knossos, and Sellopoulo (Matthäus 1980:96–98, pl. 5, variante A). The earliest is the cauldron from Knossos (LM I) (Matthäus 1980:97). The height (ca. 10 cm) and the diameter may be approximately the same as the ceramic examples, but on the bronze cauldrons, the horizontal handles are attached to the side of the vessel. The ceramic examples have distinct handles at the rim, in addition to possessing a spout and, at times, a third, vertical handle. The bronze examples are very plain, with no decorative features, whereas the ceramic jars are quite ornate. Although not exactly alike, the bronze vessels do provide, however, a general idea of what the cylindrical spouted jars may have looked like.

Ceramic examples: Three ornate cylindrical spouted jars have been found at Phaistos (Levi 1976, pls. XLIA [51:2], XLIB [51:1], XLB [51:3]). On two of these jars, flat round clay rivets were found at the join between the handles and the rim, and, in one case, at the join between the spout and the rim (51:2). Part of the body of this latter jar is missing, but it likely that this vessel also had a vertical handle opposite of the spout. The clay rivets suggest the likelihood that these types of jars were modeled on metallic prototypes (see under 3.II.1 Rivets. Cylindrical Spouted jars). The shape of the spout (“triangular” when seen in cross-section) is one that appears on other later metal jars with spouts (e.g., Matthäus 1980, pl. 36 nos. 301, 302 [bridge-spouted jars], pl. 43, no. 363 [cylindrical jar]), but on only one known metal jar is the spout a separate piece of metal that has been riveted to the body (Matthäus 1980, pl. 57, no. 477 [bridge-spouted jar]). The cylindrical spouted jar with rivets at the spout is the only known ceramic vessel with rivets at this location (Levi 1976 pls. XLIA [51:2]). One wonders if this was a function of the shape of the vessel. Seen from the side, the top and bottom parts of the body seem to mirror each
other. The flat round base is paralleled by the flat “lid” of the vessel, and the band of raised “lozenges” and white circle decoration around the base is analogous to the decoration at the top of the body. If one can imagine the metal counterpart for this ceramic jar, then one could also imagine a jar made in two separate pieces riveted together in the center. The painted red band around the middle may be an allusion to a copper band holding the two pieces together, analogous to the torus ring on the neck of ewers. If indeed the metal model were made in two pieces, this may explain why the spout needed to be added later with rivets. Of course, the added clay rivets at the spout may also have been an aesthetic choice to complement the rivets on the handles. If indeed the red painted band is an allusion to a copper band, then, perhaps, the white triangular shapes around the body may be allusions to gold cut-outs that were inlaid into the surface of the metal. When laid out, the white triangles create large circle motifs in reserve (the “negative space” forming the design), similar in concept to the white shell inlays from the “Vat Deposit” at Knossos that seemed to have been used to create a medallion with quatrefoil motif on a presumed gaming board (Evans 1921:169–170, fig. 120 [32:1]; see also 4.VII Inlay and Enameling).

A second cylindrical spouted jar (Levi 1976, pl. XLb [51:3]) has a simple rim, which is a slightly flat extension of the body into the center of the jar. This jar is very ornately painted with what appear to be stylized “axe” motifs. It is not clear if the decoration was inspired by any known metallic decorative treatment. The shape of this jar is presumed to have been inspired by a metallic model due to its similarity to the other two cylindrical spouted jars. The third jar in this series is more “metallic” in nature (Levi 1976, pl. XLlb [51:1]). The rim is composed of white cut-out petals. The same type of cut-out petal feature was also used on a number of stands (Levi 1976, pls. LXXIV [53:16], XXVIIc [53:17], pl. 184c [36:6]), one rhyton (Levi 1976, pl. XLVb [53:11]), and some basins (MacGillivray 1998, pls. 63:548 and 91:548 [36:5]). It was argued that the cut-out
petal feature may have been a means of copying the scalloped or petal edges of added metal rims (see 3.II.3 Cut-out Petal Rims and 5.II Basins). The orange clay rivets at the juncture between the handles and the rim on this cylindrical spouted jar suggest a metallic inspiration for this jar. The orange rivets may, perhaps, be an allusion to the use of copper or bronze as strengthening agents on Aegean metal vessels (Davis 1977:337–344). The same perhaps may be suggested for the painted red bands around the base and rim of the ceramic jar. Copper bands at these locations would help strengthen the stability of the vessel. The ornate painted decoration on the exterior as well the interior of the ceramic jar are simple, repetitive elements of white circles, swirls, and dots. Decoration of this type is characteristic of inlay (or cloisonné) work, but whether jars of this type were, in fact, inlaid with golden cut-outs of this sort can only be conjecture at the moment (see 4.VII Inlay and Enameling).

Date and Distribution: Two of the cylindrical spouted jars from Phaistos were found in contexts dating to MM II (Fase Ib). One jar, said to be from the southern part of the palace (Levi 1976, pl. XL la [51:2]) is tentatively dated to MM IIA (Fase Ib iniziale?). The jar with a petal rim was found in room LXXXIV of House C (Levi 1976, pl. XL lb [51:1]), and the jar with possible “axe” motifs was found in room LIV of the Southwest Quarter of the Palace (Levi 1976, pl. XLb [51:3]).

Cylindrical spouted jars may be related in function to bucket-jars (see under 5.V Bucket-Jars). These type of jars are shorter and wider than bucket-jars, but they do share basic similarities, namely, a spout, a conical/round “bucket-like” body, two vertical handles set at the rim, and a third vertical handle opposite the spout. Bucket-jars were found in contexts dated to MM IB and MM IB–MM IIA. Cylindrical spouted jars possibly begin in MM IIA. Perhaps these latter jars supplanted the bucket-jars in use.
The shape of the cylindrical spouted jar appears to be local, but the placement and shape of the clay rivet is unusual for Minoan vessels (see under Rivets. 3.II.1 Cylindrical Spouted jars). It may be that the placement of the rivets is evidence of a foreign metalworking technique, but it is more likely an aesthetic choice on behalf of the potter. Given their ornate decoration, unique nature, pronounced clay rivets, and other “metallic” features, it is possible that these types of jars were imitations or close adaptations of a metal vessel shape.

JAR 2. Ovoid jar with horizontal handles

*Description:* The ovoid jar with two horizontal handles occurs in different sizes. There are small examples (e.g., Levi and Carinci 1988, pl. 24) and medium to larger sizes (see Betancourt 1985: 72, fig. 48, jar; Levi and Carinci 1988, pls. 211, m, 22a–f, 74h, i). The small to medium examples have an ovoid body, horizontal rim, flat base, and relatively wide mouth. Two rounded horizontal handles are attached to the widest point on the body.\(^{56}\) As the known metallic examples are small in size, only the smaller ceramic examples are considered here.

*Metal examples:* Three examples of small gold ovoid jars with horizontal handles were found in the Shaft Graves at Mycenae. Each one was covered by a lid. One example was found in Shaft Grave IV (Karo 1930, pl. CXIV and fig. 24; also Davis 1977:176–178, no. 61, figs. 144 [51:4], 145), whereas the other two were recovered from Shaft Grave III (Karo 1930, pls. CIII, CIV, figs. 97, 98; also Davis 1977:242–247, nos. 95, 96, figs. 190 [51:5], 192, 193). One of these from Shaft Grave III was a miniature jar with repoussé work done in the style of “hanging flower petals” motif (Davis 1977:243–247, no. 96, \footnote{\(^{56}\) Probably related to this jar is an ovoid jar type with four handles. In this case, the jar has the two horizontal handles on the shoulder and two rounded vertical handles opposite set on the body. The jar is also set on a raised foot (e.g., Levi and Carinci 1988:163, fig. 42, pl. 74h). These are also dated to MM II (Fase Ib).}
figs. 192–193), which has been judged to be Minoan work (Davis 1977:245). The origin of the other two jars could not be ascertained (Davis 1977:178–179, 247). The jar from Shaft Grave IV has a repoussé foliate band running around the neck, which may be concealing the junction between the neck and the body. The jar from Shaft Grave IV (Davis 1977:176–178, no. 61, figs 144 [51:4], 145) has ribbon handles, whereas the plain gold example from Shaft Grave III (Davis 1977:242–243, nos. 95, fig. 190 [51:5]) has rounded horizontal handles. This is an unusual feature for metallic vessels in precious metals, whereas it is more common on vessels made from bronze (see Matthäus 1980). The ceramic examples have both types of handles.

*Ceramic examples:* The ceramic examples of smaller ovoid jars with horizontal handles are plain in decoration. One example (Levi 1976, pl. 76f [51:6]) has separate white squiggly lines covering the whole vessel and white pendant lines around the rim. Still another (Levi 1976, pl. 76b [51:7]) appears to have large white spots on the lower half of the vessel. The decoration on these examples is not particularly metallic. One jar (Levi 1976, pl. 76e) is a little more ornate. It is seemingly painted orange and has large dark triangular zones superimposed by a white chevron pattern. The handles are also covered in white striations. Perhaps this is an attempt at evoking fluting, although this is very uncertain. Overall, the factors that enable one to see this type of jar as metallic are the ribbon handles on these jars and the later metal comparanda in the Shaft Graves.

*Date and Distribution:* Small ceramic ovoid jars with horizontal handles that resemble in shape the gold ovoid jars from the Shaft Graves occur in contexts ranging in date from MM IIA (*Fase Ib iniziale*), MM II (*Fase Ib*), and MM III (*Fase III*; e.g., Levi and Carinci 1988, pl. 24e). In MM III, the jars have ribbon handles and separate bases and look more “metallic” than their earlier counterparts. It is entirely possible that this vessel shape, originally ceramic in origin (?), may have inspired metallic models in MM III and beyond. The small metal jars were furnished with lids. Given the lids, the small size of
the jars, and the preciosity of the material (gold), perhaps these vessels were used to contain precious materials, such as cosmetics or perfumed solids.

**JAR 3. Situla–like jars with loop handles**

_Description_: Globular jar tapering to a flat base. The defining feature is a single loop handle arching above the rim.

_Metal examples_: “Situla” is a term that generally refers to a bucket-like vessel with one handle for suspension. No metal examples of situla-type jars were found on Crete, but a metal example of a “situla” was found in Shaft Grave V at Mycenae (Karo 1930, pl. CXXXV; also Davis 1977:159–161, no. 47, fig. 128 [51:8]). Both the handle and the body of the goblet-like vessel were made from separate pieces. The movable copper handle was formed from a copper rod, which was silver-plated. The ends of the rod were hammered up so as to not slip from the sockets. The sockets consisted of silver-plated copper loops whose ends were flattened and, apparently, fused to the body of the vessel. Another decorative plate, in the shape of a double axe, was then attached over the loop ends. The manufacturing techniques and the double axe iconography suggest the piece was Minoan-made, although the plate and loop socket attachment method seems to have predecessors in Mesopotamia and Anatolia (Davis 1977:160–161, fn. 416). As these three examples demonstrate, the loop handle was used on different types of vessels, and it is probable that many more metal vessels that were suspected had a loop handle.

_Ceramic examples_: The loop handle is not a common form in ceramic as “the movable handle does not allow translation into ceramics or stone” (Davis 1977:160). The loop handle is meant for suspending the weight of the vessel, and the stresses on the relatively

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57 The term “situla” is more commonly used for vessels in the Classical period and beyond in the Aegean, but it has been adopted for particular types of vessels in Bronze and Iron Age Egypt and Cyprus (see, e.g., Catling 1964:152–153) and it is used by Davis (1977:159) in describing one vessel from the Shaft Graves.
fragile and rigid ceramic loop handle render the handle prone to breaking. Just like other ceramic handles that rise above the rim of the vessel, one should suspect the ceramic loop handle as being an imitation of a metal handle as well (see also 3.II.5 Handles). At Phaistos, three examples of globular jars with ceramic loop-handles (“situlae”) were found (Levi 1976, pls. 116b, 116d [51:9], 116f [51:11]). Each jar is slightly different in appearance. The jar with the most resemblance to a “situla” is the one with a tall, tapering base (Levi 1976, pl. 116d [51:9], also Levi and Carinci 1988, pl. 68a–b). At the base of the loop handle are added strips of clay that call to mind the socket feature on the metal example from the Shaft Grave (see above [51:8]). The ceramic strips are purely decorative in that they do not aid in the functioning of the vessel. At the same time, one can envision a use for these strips on a metal vessel. Just as loop handles on metal vessels are usually affixed to their respective vessels through loops or rings, the added strips on the ceramic example probably represents the attachment by which the ends of the loop handles were attached to the jar. On the ceramic vessel, the clay strips provide the illusion that the handle is attached to the outside of the vessel on these “sockets,” even though, in reality, they are really stuck to the rim. Thus, the strips are probably meant to evoke the quality of metal. The clay handle is positioned perpendicularly to the two spouts of the vessel, just as the loop handle on the metal example from Shaft Grave V is set so that it crosses the body of the vessel and allows the vessel to tip forward or backward.⁵⁸ In addition to the clay strips, the decoration of this jar is also evocative of “metallic” decorative techniques (see under 4.IV Ornamental Bands). Around the middle of the body, at its widest point, is a red band overlaid with white, slanted S-shapes (see 4.IV.3 Bands with S-shapes). In metal, a band at this location may have helped to stabilize the vessel, such

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⁵⁸ Another jar from Phaistos has two horizontal handles extending from the side of the rim, which parallel the added strips on the jar mentioned above (Levi 1976, pl. 138f). This jar is relatively similar in shape to the jar above, and also has two facing spouts set perpendicularly to these horizontal handles. The “handles” on this jar may have also served as the fixed bar by which a loop handle may have been attached.
as it may have done for certain straight-sided cups (see SS CUP 1). Surrounding this band (and around the rim and possibly the base) are rows of pendant semi-circles, which are similar in style to the gold semi-circle cut-outs at the base of a dagger found at Malia (Detournay 1980, fig. 219:5). Thus, if the decoration on the loop-handled jar is representative of metal prototypes, then metal examples may have been decorated with added and/or inlaid bands.

The jar with painted bands [51:9] was not the only one with features evoking loop handle “sockets.” Another jar from Phaistos had two small horizontal handles extending from the rim of the vessel (Levi 1976, pl.138f [51:10]). Although this jar did not have a ceramic loop handle, the side horizontal handles are similar in concept to the added strips of the previous jar ([51:9]). In metal, such horizontal handles could very well have served as the “socket” for the loop handle. That this jar originally had a loop handle is further suggested by its double spouts, both perpendicular to the side handles. Just like the previous jar with added strips ([51:9]) and the situla-like jar from Shaft Grave IV [51:8], the presumed loop handle would have allowed the jar to tip forward or backward, hence, to pour from either end of the rim.

Somewhat different in style to the other jars is another situla-like jar, but, this time, the high, single handle is set parallel to the spout. This jar is decorated in horizontal repoussé sections on the upper half of the vessel (Levi 1976, pl. 116f [51:11]). The repoussé sections may be an allusion to more added bands or perhaps to the shaping of the original jar through hammering of the metal plate (see 4.III Hammering). The sectioning of the body of the jar recalls the same treatment on a “hammered” bridge-spouted jar (Levi 1952–1954, fig. 109e [39:10] and BSJ 4) and a demitasse (Levi 1976, pl. 123c [50:7]; DT CUP 1) that were found in the same vicinity as this jar. Perhaps they were meant to be used together as a set.
The third jar with loop handle from Phaistos is somewhat different from the other two. Whereas the two mentioned above are piriform in shape with well-defined rims, this example is more amorphous in shape, resembling a sac with a handle (Levi 1987, pl. 116b). It does, however, have a spout, a feature shared by all. Opposite the handle is a small rounded protuberance at the rim, perhaps an indication of a rivet or perhaps an aid to tying down a lid or cover. The decoration is very faded and it is difficult discern what it may have been (perhaps a large dark circle bisected in half?). The shape may, perhaps, be derivative of the other two jars.

Date and Distribution: Two examples of the “situla”-type ceramic vessels from Phaistos were found in rooms LIV [51:11] and XXVII–XXVIII [51:9] of the Southwest Quarter of the palace, whereas the third, sac-like type jar was found at Hagia Fotini in room gamma. The jar with side handles [51:10] was found in Chalara Sud, room iota. All the jars were dated to MM II (Fase Ib).

JAR 4. Ovoid jars with loop handles

Description: Medium-sized jars with wide open mouth, ovoid body, flat base. Most jars have a rounded rim, although a flaring rim is also possible. Holes at the rim or slightly below the rim suggesting that metal loop handles were used with the ceramic vessel.

Metal examples: Although no complete metal jar with loop handles have been found on Crete dated to the Middle Minoan period, loop handles in bronze have been found at Malia dating to this period (Matthäus 1980, no. 425; Reeves 2003:145, 146, table 5.3), indicating that vessels with this feature was known on Crete in this period. Loop-handled vessels are not known on the island for the MBA, but examples from Anatolia in an earlier period suggests that the inspiration for the loop-handle may have come from

59 Reeves (2003:148) has suggested that the handle belonged to a cauldron type vessel (her type no. 46a).
this region (Reeves 2003:148). Two examples from different parts of Anatolia dated to the latter half of the EBA confirm the use of the loop handle already in this period (Toker 1992, figs. 33 [51:12], 34 [51:13]). Both bronze vessels are globular teapot-like vessels with spouts. The handle is preserved on an example from Horoztepe (Toker 1992, fig. 33 [51:12]). The separate handle is a single metal arch with tubular projections at each end, which are pierced horizontally. Two ledge handles on either side of the vessel were also pierced—with two vertical holes. In order to attach the handle to the vessel, presumably, a metal ring would have been passed through the ledge handles up through the tubular projections to connect the two pieces.

The example of the other bronze jar from Anatolia demonstrates another method of attachment. In this case, on the jar from Kayapinar (Toker 1992, fig. 34 [51:13]), the handle is not preserved, but the features of the jar allow for speculation for the attachment of the loop handle. On either side of the jar, running parallel to the spout, is a set of facing projections with circular holes. It is likely that a small wooden or metallic bar fit through each set of holes. A loop handle could then have been attached at both ends to these bars. A loop handle parallel to the spout allowed for suspension of the vessel and the ability to pour the contents of the jar with one hand. In some measure, the handle could probably also be moved from side to side to facilitate the pouring of liquid into the top of the jar.

Ceramic examples: The two earlier metallic examples of vessels with loop handles indicate that globular or ovoid jars with spouts were used with swinging loop handles. In profile, the metal jars resemble some modern teapots. A high handle that allows a person to swing the spout down and away from their hand would be useful with hot liquids. Perhaps not coincidently, many of the jars with evidence of loop handles (including JAR 3 and ASK examples) are ovoid/globular in shape with spouts (see also two teapots: Levi
1976, pl. 100e, also Levi and Carinci 1988, pl. 45i, 45k). Perhaps the loop handles were particularly useful for handling (hot) liquids.

In contrast to JAR 3 jars, to which a ceramic handle was attached, JAR 4 jars were not equipped with handles of clay, although evidence of handles still remain. Three jars at Phaistos were equipped with either two cylindrical handles or two small ledge handles at the rim (Levi and Carinci 1988, pl. 74a–c). All the handles are pierced vertically. The vertical arrangement of the holes is highly suggestive of the use of a thin, round, and vertical handle, i.e, the loop handle. Like JAR 3, these jars are also relatively deep, spouted jars as well, although they lack the specialized piriform shape of the “situlae.”

In addition to these vessels with specialized handles, another set of vessels have what appear to be double sets of small holes just under the rim on either side, including one teapot (Levi and Carinci 1988, pl. 45k) and some ovoid jars (Levi and Carinci 1988, pl. 70b–c, also Levi 1976, pls. 138b [51:15]; Levi 1976, pl. XXXIXa [51:14]). The location of the holes seem to suggest a kind of suspension handle.

Two of the ovoid jars with holes were decorated in a manner evocative of metallic techniques. One example (Levi 1976, pl. XXXIXa [51:14]) was painted in the “Wavy Line Style” more commonly seen on semi-globular cups (SG CUP 4). In between the interstices of the white wavy lines are found a series of dotted circles (see MacGillivray 1998:63, fig. 2.5 no. 2 for an approximation of the decorative technique). At the juncture between each wavy line is an orange oval topped with a solid white circle on the outer and inner ring of wavy lines. The pattern is reminiscent of repoussé or inlay, whereby the orange ovals on metal examples would probably be the reinforcing “clasps” or rivets holding down the silver or gold inlaid lines (see 4.VII Inlay and Enameling for more information). On this example, two projections extending from the thickened rim were
pierced transversally. A metal wire run through these holes could have been folded over on the bottom in order to keep the handle in place.

Another ovoid jar with holes was mainly decorated with large running spirals around the central part of the body (Levi 1976, pl. 138b, also, Levi and Carinci 1988, pl. 70b [51:15]). Outlining the white spirals top and bottom were two orange bands overlaid with S-shapes. The S-shapes lend the illusion that one long wire was wrapped around the orange band. The orange bands and S-shapes is a relatively common ornamental band decor that evokes a copper reinforcing band with, perhaps, overlaid gold inlay (see 4.IV.3 Bands with S-shapes). The large spirals are reminiscent of the large repoussé spirals on the shoulders of two metal jars from the Grave Circle A, Shaft Grave VI and Grave Circle B, Shaft Grave Epsilon (Matthaüs 1980:179–180, pl. 32:259, 32:261e [29:5–6]). Perhaps the painted white spirals on the void jar is meant to evoke a similar-type repoussé decoration. Just below the thickened rim two sets of closely spaced holes were found, facing each other. If indeed a metal wire was used as a loop handle, one imagines that to overcome the jutting rim, either a flexible material (either rope, leather, or thin metal) would have to be passed through the holes and then attached to a chain link, which itself would be connected to the handle. Or alternatively, a fixed wire hoop could have run through the holes, whereby a handle hooked on the ends would have attached to the loops (see above under JAR 3 for a metal example from Mycenae). The same handle attachment was probably used on another ovoid jar (Levi 1976:585, fig. 941, also Levi and Carinci 1988, pl. 70c) and on some teapots (see Levi 1976, pl. 100e, also Levi and Carinci 1988, pl. 45k). Although loop handles in metal on ceramic vessels are not necessarily indicative of metallic antecedents, the presence of the holes (implying loop

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60 One set of holes are visible in the illustrations in Levi and Carinci 1988, pl. 80b, 80c. It is assumed that there was another on the other side of the vessel, not visible in the illustration.
handles) in addition to the “metallic” decorative surface treatment on these examples would suggest inspiration from metal models.

*Date and Distribution:* Most of the jars with holes at the rim mentioned here could not be dated more closely than MM II (*Fase* Ib). The earliest is an oval-shaped jar with vertically pierced cylindrical handles, from the “condotto” in room LIX of the Southwest Quarter of the palace (Levi and Carinci 1988, pl. 74a–b), which is likely MM IIA (*Fase* Ia/Ib *iniziale*). The two ovoid jars were found in room CVI of House L [51:14] and room LVII [51:15] of the Southwest Quarter of the palace.

### 5.IX JUGS (JUG)

Jugs are small to medium-sized vessel used for pouring liquids. On Crete during the Middle Minoan period, the majority of jugs have a well-defined cut-away (or “beak”) spout that rises higher than the rim; a lesser quantity of jugs have slightly flaring horizontal rims that act as a spout instead. Most jugs have at least one vertical handle attached at the rim opposite the spout to aid in pouring.61 At times, some jugs have been called “ewers.” To avoid creating an artificial distinction between jugs and ewers, this term is avoided, except when mentioning JUG 1, which is a recognizable form sometimes known as the “sacred ewer.”

Jugs are differentiated here according to the overall shape, decorative technique, and shape of the spout. The shape typology loosely follows that established by MacGillivray (1998:80–82) for jugs, thus the distinction between jugs with cut-away necks and those with horizontal spouts (see MacGillivray 1998:81, figs. 2.17, 2.18).

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61 The exception to this are what are sometimes called “amphorae.” These types of vessels, used for pouring, usually have two handles attached at the rim, but perpendicular to the spout(s) (e.g., MacGillivray 1998, pl. 16:402).
JUG 1. Jug with a high-beaked spout and torus ring ("sacred ewer")

Description: Medium-sized jug with tall narrow neck and globular body. Neck ends in a cut-off high beak spout. One to three vertical handle extends from the rim to the shoulder. Characterized by the presence of a ceramic torus ring around the neck.

Metal examples: A number of metal examples of jugs with torus rings were found in later contexts (MH III–LH I). Perhaps the closest in similarity to the ceramic examples is a jug from Shaft Grave IV at Mycenae (Karo 1930, fig. 40; also Davis 1977:190–191, no. 65, fig. 153 [5:1]). Another metal example was found in Shaft Grave Alpha (Mylonas 1972–1973, pls. 16a, 16b; also Davis 1977:134–136, no. 29, figs. 106–107 [51:16]). In most cases, the use of the torus ring was made to cover and strengthen the join between the neck and the body. In the case of these jugs, the torus rings were both raised from the sample piece of silver plate as the rest of the body (Davis 1977:134, 190). It would have been easier for the metalworker to omit the torus ring, but, yet, he chose to do so. It is likely that this feature became emblematic for this type of jug, even in the Late Helladic period. The shape is so well known, it is has been come to be called the "sacred ewer" due to its ritual associations and depictions on clay sealings, tablets, and frescoes (Nilsson 1950:147–152; see also under Discussion, below).

As this jug example demonstrates, some of the metal ewers were gilded on the neck and torus ring to provide a color contrast with the rest of the body (Davis 1977:134–135). This was the case for most of the ewer fragments from Shaft Graves IV and V. The silver fragments had the remains of gilding still preserved in some parts. See, for example, one example from Shaft Grave IV (Karo 1930, pl. CXXIII; also Davis 1977:191–192, figs. 154–155 [5:1]).

Ceramic examples: Ceramic examples of the "sacred ewer" shape were found at Knossos and Phaistos. Three almost-identical examples were found in the same context along with
a basin. They were described as being in the “creamy-bordered ware” by Evans (1935, pl. XXIXd, XXIXf; also MacGillivray 1998, pls. 90:542, 91:543–544 [51:17]). The neck was coated in a creamy white paint, which was overlaid with a red vertical floral spray. The bodies were adorned with large white spirals on a red background. It is possible that the white neck was an allusion to the gilding of the metal vessel necks. The large spiral around the body is reminiscent of the repoussé spirals on later metal vessels, such as a silver jar from Shaft Grave V (Karo 1930, pl. CXXXIV; also Davis 1977:149–155, no. 43, fig. 120 [29:6]) and bronze fragments of jars found in Grave Circle B, Shaft Grave Epsilon, which were likely gilded (Mylonas 1972–1973:172, pl. 151; also Matthäus 1980: 179–180, pl. 32:259a–i and reconstruction, pl. 32:259k [29:5]) and Grave Circle A, Shaft Grave IV (Karo 1930:162, no. 919; also Matthäus 1980:180, pl. 32:261 and reconstruction, pl. 32:261e). Perhaps the large spirals on the ceramic example was referring a similar type of repoussé decoration. The fact that there were a number of almost exactly-looking ceramic jugs may suggest that these were duplicates of the same metal model (see Chapter 2 for more on duplicates).

A fragment of a jug neck was found at Knossos in the “Loomweight Basement” deposit (MacGillivray 1998: pl. 131:873 [51:20]). The jug neck has five horizontal rings running around the neck, and the spout is particularly steep. Although a torus ring was not preserved at the base of the fragment, the high spout and “corrugated” look lends the piece a particularly metallic aspect. It is highly likely that this was a ewer of this type.

Three examples of jugs with torus rings were found in the same room (LV) at Phaistos. One of these jugs was likely made to match the stand with flower appliqués (STD 1) that was found together with it in the same space (Levi 1976, pls. XXVIIa [53:19], XXVIIb [51:18]). Both the stand and the were were painted with a large swath of alternating white and red squares around much of the body (i.e., a checkerboard pattern). Below this checkerboard motif both also feature an orange band overlaid with red dots. It
is likely that the two vessels were meant to be used as a set, perhaps for cleaning hands before a feast or ritual (see also 6.III.1 Ceramic Vessel Sets). The torus ring of the ewer was painted a creamy white, again, perhaps as an allusion to gilding.

The second jug within this room was an unusual ewer decorated in a series of clay repoussé shells around the shoulder and mid-section (Levi 1976, pl. 77a [51:19]). The shells are reminiscent of the repoussé decoration of shells on a straight-sided cup, also from Phaistos (Pernier 1935, pl. XXXb [48:20]). Perhaps these too were meant to be used as a set (although these two vessels were not found in the same room). The ewer with the shells also featured large painted spirals, which, like the ewers with spirals from Knossos (see above), were perhaps a reference to repoussé spirals on the original metal model.

Like the ewer with repoussé shells, the third jug with torus ring in room LV also had three handles, one opposite the spout and two perpendicular to the spout (Levi 1976, pl. 77d). This jug was painted in rosettes, spirals, floral bands, and pendant bands of triangles. If this jug were imitating metal models, it would likely be imitating inlay work.

Incidentally, a fourth ewer with torus ring was found in the same vicinity as the others, but not in the same room (in room LIX). It too had three handles. It is difficult to discern the decoration of this jug from the published illustration (Levi 1976, pl. 78d; also Levi and Carinci 1988, pl. 27f), but the torus ring suggest a metallic antecedent.

*Date and Distribution:* The jugs with added torus rings range in date from MM II (*Fase* Ib) to MM IIB–IIIA. The three identical examples from Knossos were all found in the “West Polychrome Deposits,” which mainly contains material from MM IIB–IIIA. The jug neck with multiple rings around its neck was found in the “Loomweight Basement” and has the same date as the other jugs from Phaistos (MacGillivray 1998: pl. 131:873). All the examples mentioned from the same complex at Phaistos (rooms LV, LIX) were found in MM II (*Fase* Ib) contexts, although other ceramic jugs with torus rings were
found in MM III contexts (e.g., Pernier 1935, fig. 222; Levi 1976, pl. 195e), indicating that the type continues into the next period (and into the Late Minoan period).

With the exception of a couple of jugs found in the “Grande Frana” (e.g., Levi 1976, pls. 95f [JUG 2]; XXXIIb [JUG 6]), a large percentage of ceramic vessels with torus rings, including the ewers mentioned here, a rhyton with cut-out petal rim and torus ring (RHY 3; Levi 1976, pl. XLVb [53:11]), a flat rimmed jar with “coffee bean” shapes (JUG 5; Levi 1976, pl. XLIVa [52:17]), and the stand with flower appliqués (STD 1; Levi 1976, pl. XXVIIa [53:16]) were found within close proximity in the same complex of the Southwest Quarter of the palace (in spaces, L, LV, LIX, LXI). Perhaps this section of the palace was dedicated to cultic activities.

Discussion: The jug with high beaked spout and torus ring is a particular shape that continues the tradition of the high spout from an earlier period. It is one of the few vessel shapes to appear on seals and as an ideogram in Linear B writing (Ventris and Chadwick 1956, table on p. 324, ideogram 205). This type of jug is mentioned on a Pylos tablet listing the furnishings of a room in the palace. “That most of the ideograms (200–8) represent metal rather than pottery types is indicated not only by their profiles but by the BRONZE ideogram (nos. 202, 205, 208), and by the fact that they are counted, like those of GOLD, in small numbers from one to three” (Ventris and Chadwick 1956:324). The jug shape is also seen on a number of seals (e.g., Betancourt 1985:69, fig. 45; see 6.III.1 Ceramic Vessel Sets for more information).

JUG 2. Jug with cut-away spout

Description: Small to medium jug with cut-away spout with globular, ovoid, or squat appearance and flat, wide base. One rounded (or ribbon) vertical handle attached to the rim and upper shoulder. May have clay protuberances or small vertical handles on either side of spout or small horizontal handles mid-body.
Metal examples: The jug with cut-away spout is a shape that begins in the Early Bronze Age in Anatolia and the Aegean. The metal examples at this time are relatively small, have rounded bodies, and high spouts (e.g., Toker 1992, figs. 1–4, second half of third millennium BCE [52:1]). The handle on these examples are extensions at the rim of the same metal sheet used to create the body; thus, there are no rivets at the juncture between the rim and the handle. By the beginning of the Middle Minoan period, the jugs are larger, have a wider base, and the shape is globular, ovoid, or relatively squat (e.g., Momigliano 1991, figs. 33, 34). A silver example of a type of jug with the same profile as the Middle Minoan ceramic jugs was found beneath the pillar crypt of the “South House” at Knossos in a context dating to LM IB (Evans 1928, fig. 221b; also Davis 1977:105–106, no. 14, fig. 78 [52:2]). The up-swung handle is rounded, lending it strength. Although found in a later context, it is likely that similar types of metal jugs were also produced in the MM period.

Ceramic examples: The ceramic examples of jugs with cut-away necks from the MM period vary in body and spout shape. A couple have torus rings (e.g., Levi 1976, pl. 95f; also Levi and Carinci 1988, pl. 34k), although those with long necks and cut-away spouts have been discussed under JUG 1. A number of these jars have a clay protuberances on either side of the spout (e.g., Levi and Carinci 1988, pl. 31g, h, k, l, pl. 33e, g, h, i). It is unlikely that these rounded clay additions were meant to evoke rivets. Rather, they are probably functional additions that may have a purpose in sealing or filtering (with the aid of a cloth, string, and/or clay) the mouth of the jug. The fact that some jugs have small vertical handles at the same location as the clay protuberances (e.g., Levi and Carinci 1988, pls. 28, 29) and the fact that other types of vessels meant for pouring (and/or filtering), such as teapots (e.g., Levi and Carinci 1988, pls. 43, 45d, 45e), for example, with the same type of clay protuberance (sometimes mid-body) seems to support this notion. Thus, the indications that some of these types of jugs were rendered in metal are
the occasional torus ring on the ceramic examples and the fact that a metal jug with the same profile was discovered (see above, [52:1]). The decoration on the ceramic examples vary. Some may be drawn from the ceramic repertoire, but others may be have been inspired by metallic prototypes. Some “metallic” candidates include jugs with what looks like vertical fluting (Levi 1976, pl. 24f [52:3]), torsional fluting around the shoulder (Levi 1976, pl. 92i, 92g [52:4]), torsional fluting around the lower base of the jug (MacGillivray 1998, pls. 8:250 and 59:250 [52:5]), ornamental bands with dots (Pernier 1935, pl. XIVa), repoussé spirals and ornamental bands (e.g., MacGillivray 1998, pls. 20:566 and 94:566 [52:6]) and, possibly, inlay (Pernier 1935, fig. 134; Levi 1976, pl. XIVa [52:7]; MacGillivray 1998, pls. 20:567 and 94:567 [52:8]). The upper shoulder of one jug [52:5] also has a checkerboard motif, which is reminiscent of the band of checkerboard seen on an ewer and stand at Phaistos (Levi 1976, pls. XXVIIa [55:3], XXVIIb [52:4]). Perhaps this motif was also inspired by metallic antecedents.

The jug with cut-away neck is a shape that continues from an earlier period, and, just like bridge-spouted jars, which seemingly became “metallicized” sometime in MM IB or MM IIA, the jug with cut-away neck shape was probably made transformed into precious metal vessels in order to be used with the metal cup shapes that are introduced in the Middle Minoan period (see more under 6.II.4 Origins. Local Shapes).

*Date and Distribution:* Ceramic jugs with cut-away necks in the MM period range in date from MM IA to MM III. The examples cited here with possible “metallic” decoration also run the same chronological gamut. The jug with checkerboard motif [52:5] was found in the “Northwest Pit,” whereas the other two jugs from Knossos referencing ornamental bands and repoussé [52:6] and possibly inlay [52:8] were found in the “West Polychrome Deposit.” These latter jugs are the latest in the series, dating to MM IIB–IIIA. The other jugs with possible “metallic” decorative techniques were found in earlier contexts. The jugs with references to fluting [52:4, 52:4, 52:5] were dated to either MM IB (*Fase* Ia),
MM IB–MM IIA (“Northwest Pit”), and MM II (Fase Ib). The ones at Phaistos were found in room XCIV of House C [52:4] and Hagia Fotini, bench of room beta [52:3]. The jug from Phaistos with possible reference to inlay work [52:7] was found in House B (room CIII) in a MM IB context (Fase Ia).

JUG 3. Jug with trefoil rim

*Description:* Small to medium jug with trefoil spout. Globular body; relatively constricted neck and elongated shape. One horizontal handle attached at the rim and upper shoulder.

*Metal examples:* No examples of metal jugs with trefoil rims have been found to date. It is possible that the ceramic jug with trefoil rim was related to the jug with cut-away spout (see JUG 2). In overall shape, the ceramic example of this type of jug was smaller and more globular than the typical ceramic JUG 2. In profile, the body is more akin to the gold jug (with cut-away spout) that was found at Mycenae in Shaft Grave III (Karo 1930, pl. CIII; also Davis 1977:237–238, no. 91, fig. 186 [52:9]). Both have relatively long necks and rounded body. The metal example has a long up-swung ribbon handle, but it is not uncommon in clay that the handle does not extend as much above the rim. Of course, the metal example is later in date (LH I), but it does provide a generalized example of what a metal jug of this size and shape may have looked like.

*Ceramic examples:* One example of a jug with trefoil rim was found at Knossos (MacGillivray 1998, pls. 23:668 and 110:668, should be pl. 24 [52:10]). The ceramic jug is noteworthy for having a large flat clay rivet at the join between the handle and the rim. The vessel is decorated with two large white bands, one set around the neck and the other around the mid-point of the body. Thinner red bands outline the ones in white. The painted bands occur at locations where strengthening bands would likely occur on a metal jug—at the widest point of the body and between the neck and the rest of the vessel.
Although it is a simple painted decoration, it is possible that this jug is referencing a metallic antecedent. Ceramic rivets do not frequently appear on jugs. It is possible that since this particular jug shape was a novel introduction in the MM, the clay rivet is meant to evoke the new metal model.

*Date and Distribution:* The ceramic jug with trefoil rim was found at Knossos in the “Southwest Room of the Royal Pottery Stores” (MacGillivray 1998:36–37). Pottery from this deposit dates to MM IB and MM IIA.

**JUG 4. Jug with wide mouth**

*Description:* Small to medium-sized globular wide-necked jug with one to three vertical handles.

*Metal examples:* A bronze wide-necked jug was found in Anatolia, at the site of Eskiyapar, in a context dating to the second half of the EBA (Toker 1992, fig. 32 [52:11]). The vessel had a separate strap handle that was riveted to the rim and shoulder. The neck was encircled by broad paralleled incised bands, and groups of four zig-zag lines covered the body. The distinguishing feature of this jug is the wide neck and rounded body, which is similar in profile to the ceramic examples on Crete. The only difference might be that the lower body on the ceramic examples tapers to a flat base.

*Ceramic examples:* Jugs with wide necks are mainly found in MM IB and MM IIA contexts. Some are decorated in the Barbotine style (e.g., Levi and Carinci 1988, pl. 28). Although Barbotine work is likely not a metallic decorative style, the shape of the vessels and the vessels with “metallic” features indicate that the form is likely derived from metal models. Some of the “metallic” features include torus rings, ribbon handles with thickened ends, and molded decoration in the shape of torsional fluting and gadrooning.
Many of the jugs with wide necks have vertical handles on the side of the spout. These are usually flat ribbon handles. This on its own may not demonstrate “metalness,” but a few examples have handles that appear more metallic than others. On a few examples, the part of the handle attached to the shoulder appears “laid on” (e.g., Levi 1976, pl. 81e [52:14], also Levi and Carinci 1988, pl. 29d; Levi 1976, pls. 82c, e [52:13]). On the one example, the ends of the handle attached to the shoulder curve upwards in a simile S-shape (Levi 1976, pl. 82c, e [52:13]).

It is reminiscent of the handle attachment seen on a bronze jug from an earlier period (end of EBA) from Potatlı in Anatolia (Toker 1992, fig. 10 [52:12]). In metal, the lower end of the handle would have been riveted to the body at this juncture, therefore, at times, the ends of the handles was flat and thickened to provide a surface for the rivet. In ceramic, this feature was not functional. In some cases, the thickened ends of the handles may have additional flourishes or decoration. The ends of at least one handle on the second jug [52:14] has a feature that resembles a horizontal cylindrical lug. It completes the S-shape of the handle. The same feature was seen on a teapot from Malia (see TP 2; van Effenterre and van Effenterre 1963:93, pl. XXXV:8513 [54:8]), therefore, while unusual, is not unknown on Crete. This “lug” feature is reminiscent of spool handles (horizontal instead of vertical placement), and, perhaps, this detail supports the notion that this jug shape (or at least this feature) was imported from Anatolia. In addition to the “laid-on” handles, one of the jugs [52:13] also has a clay rivet at the juncture between the main vertical handle and the rim (see Levi and Carinci 1988, pl. 29b to see rivet), providing more evidence for metallic antecedents. Further evidence still, another jug, although not preserved in its entirety, appears to have a double ridge around the neck, calling to mind torus rings on other vessels (Levi and Carinci 1988, pl. 29e). This is likely the juncture where the neck and

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62 The section of the spout was not recovered. In the illustration, the reconstruction does not take into account the spout, therefore, it appears as if this is not a jug. In Levi and Carinci 1988, pl. 29b, the spout is assumed.
the body were attached on a metal jug; therefore evidence for a double ridge/torus ring would seem to point to metal antecedents.

Perhaps more evidently metallic is the three-dimensional decoration on one example of jug of this type from Patrikiès near Phaistos (Levi 1976, pl. 16c [52:15]; also Levi and Carinci 1988:55, fig. 17). The whole body of the vessel was molded/shaped into torsional flutes. The fluting is reminiscent on the repoussé flutes as seen on some of the bowls from the Tôd treasure (e.g., Bisson de la Roque 1950, pl. V:70509 [14:3]). Perhaps the same repoussé technique was applied to jugs on Crete as well.

Another possibly “metallic” jug of this type was decorated in a manner reminiscent of gadrooning (Walberg 1987a:69–70, motif 27:8). The body of the jug was covered with large petaloid shapes (Levi 1976, pl. 28i [52:16]; also Levi and Carinci 1988, pl. 29c). These were slightly raised from the surface of the vessel in a repoussé technique. The “petals” were outlined in white lines. The shape of the petals are reminiscent of the motifs on other vessels that are thought to be imitating gadrooning, such as the red petals outlined in white on a bridge-spouted jar (Levi 1976, pl. XXXIVa [20:18]) and a globular jar from Phaistos (Levi 1976, pl. XLII [20:19]). Given the large size of the “petals,” the slightly repoussé surface, and the shape of the motif, it is probable that this jug was emulating a gadrooning technique.

*Date and Distribution:* The jugs with wide necks are mainly dated to between MM IB and MM IIA (*Fasi* Ia, Ia/Ib iniziale, Ib iniziale). The jug with torsional flutes [52:15] was found at Patrikiès near Phaistos, the jug with possible gadrooning [52:16] and the jug with the cylindrical “lug” [52:14] was found at Haghia Fotini, in the bench of room beta, and the jug with the other “laid-on” handle [52:13] was recovered in “Bastione II” at Phaistos.
JUG 5. Small jar with flat rim

*Description:* Relatively small jar with flat horizontal rim and one up-swung vertical handle. Body is rounded; the neck is long and constricted, and the rim flaring gently outward. Either a flat base or a slightly raised ring base (see MacGillivray 1998:80–81, fig. 2.18 for the type).

*Metal examples:* Small metal jugs with rounded bodies and long necks were found in Anatolia in an earlier period (end of EBA). Most of these had long cut-away spouts (see above, under JUG 2), but it would not have been difficult to render the spout into a horizontal flat rim (see Toker 1992, fig. 10 for a possible example [52:12]). These metal jugs usually had a rounded base, but the bases on the ceramic examples from Crete were all flat, perhaps for stability. Although no exact example of a small metal jug with flat rim has been found to date, the ceramic examples would seem to indicate that the original models had a high up-swung handle, a bevelled rim, and, perhaps, a ring base and torus ring around the neck. Larger examples of the jug with flat rim were found in the Shaft Graves, however (Evans 1928, 645, figs. 402, 410, 411a; also Davis 1977, 152, fig. 121). The small jug with flat rim may have been an earlier version of these larger examples.

*Ceramic examples:* One of the best “metallic” example of the small jug with flat rim is a vessel that was found at Phaistos (Levi 1976, pl. XLIVa [52:17]). This jug is decorated with what has been called here “coffee bean” motifs. These are vertical shapes—repeated over the whole body—of two crescent shaped shapes facing each other, giving the impression of a coffee bean. They are painted in white on a dark ground. The slightly raised torus ring is covered in orange paint, which itself is overlaid with leaf-shaped clay additions in imitation of rivets. The clay rivets are of the same shape as three of the rivets found on the electrum goblet from Shaft Grave IV at Mycenae (Davis 1977:209, fig. 173), suggesting a close imitation of real rivets. As with this electrum goblet, which was inlaid with gold cut-outs, it is thought here that the “coffee bean” shapes were also
emulating inlays. The small, repeated motifs are typical of inlay work on later preserved metal vessels (see also under 4.VII Inlay and Enameling), and the white color of the “coffee beans” are evocative of gold as well. It is also likely that the white covering the bevelled rim, painted in a band around the neck and base, and decorating the handle are also meant to refer to gilding. This is also apparent when the handle of this ceramic jug is compared to the torus ring on the rock crystal rhyton from Zakros (Platon 1963:180, pl. 148:b; Warren 1969:87; Platon 1971:135–136 and 139; also Koehl 2006:86, pl. 9:87). The painted striations on the handle is highly evocative of the gold interstices on the rhyton’s torus ring. On the original metal jug, the handle was probably also inlaid with stripes of gold. In addition to the gold accents, the up-swung handle on the rhyton demonstrates what the up-swung handle on the metal example would have looked like.

Other jugs with flat rims were more simply decorated. These jugs were either decorated in large vertical white lines (MacGillivray 1998, pls. 28:928 and 135:928 [52:19]), spirals and triangles (Levi 1976, pl. 179d [52:18]), or the “white-spotted” style (MacGillivray 1998, pls. 23:686 and 112:686 [52:20]; pl. 156:1042). One of these jugs with “white spots” was also incised around the body with horizontal grooves (MacGillivray 1998, pl. 156:1042). The jug completely covered in white spots [52:20] was found in the “Area of the Lime Kiln” (MacGillivray 1998:37), which mainly contains pottery dating to MM IIA. Of those vessels with preserved handles, all were of the up-swung kind.

Date and Distribution: Small jugs with horizontal rim were found in contexts ranging from MM IIA to the end of the MM period. The examples from Phaistos were found in the Southwest Quarter of the palace, in room L [52:17] and room LXIV [52:18]. The jug with the “coffee bean” shapes [52:17] could not be more precisely dated than MM II (Fase Ib), whereas the other jug from Phaistos [52:18] was found in an MM IIB context (Fase II). The jugs from Knossos were found in the “Area of the Kiln” [52:20], the “Early
Floor beneath the Room of the Olive Press” [52:19], and the “Early Town Houses.” The first two are dated to the MM IB–IIA, whereas the latter example was likely MM IIB–IIIA. Another jug with torus ring was reported for Knossos. It was reportedly found in the “Loomweight Basement” (MacGillivray 1998:161, no. 825), but, due to its similarity in shape to two other jugs found in MM IIA contexts at Knossos and the presence of earlier material in this deposit, MacGillivray (1998:41, 80) is inclined to date it to MM IIA as well. Thus, the jug with the flat rim probably began sometime in MM IIA and continued down into MM IIB.

**JUG 6. Jug with cylindrical body**

Description: Small jug with shoulders sloping to vertical body and wide base. The vertical walls and wide base give the vessel a cylindrical profile. Short neck; one vertical handle, spout, and torus ring.

*Ceramic examples:* No metal examples of a jug of this kind has been found to date. One ceramic example was found at Phaistos with this shape (Levi 1976, pl. XXXIIb [52:21]). The torus ring around the neck and the decoration of the jug is indicative of metallic antecedents. The torus neck (probably and added band of clay) is painted with white dots, probably meant to evoke rivets. The body is covered in alternating bands: two rows of chevron bands and orange sinuous bands, one row of white semi-circles around the shoulder, and another orange band with a white sinuous white line over top. White dots were painted at the top and bottom of each “arch” of the orange sinuous bands. These dots are evocative of small rivets, which on a metal examples, would have been practical to keep the inlaid copper band in place on the body (see 4.VII Inlay and Enameling).

*Date and Distribution:* This jug with a cylindrical profile was found in the “Grande Frana” at Phaistos. It can not be dated more precisely than MM II (Fase Ib).
5.X KANTHAROI (KTH)

**Description:** Kantharoi are described here as relatively large open forms with carinated bodies, lobed rims, and two looping handles, usually rising above the rim line. The kantharos first makes its appearance in the EM I period, but these are relatively squat with a rounded base. In the Middle Minoan period, the kantharoi have an angular, carinated form, a pedestal base, and lobed rims.

**Metal examples:** From Gournia comes one of the only extant precious metal vessels from the Middle Minoan period (Boyd Hawes et al. 1908, col. pl. C.1; also Davis 1977:87–102, no. 12, fig. 66). This silver kantharos was made from separate sheets of metal plate. The conical base and the body up to the shoulder were made from one plate, while the four-lobed rim was made from another. Two strap handles that rise above the rim were attached just outside of the rim by two copper or bronze rivets on the handle and one silver rivet to the body (Davis 1977:88). The shape of this kantharos is not common on Crete, but finds close parallels in central Anatolia, for example at Alişar (Schmidt 1932: 112, fig. 126, col. pl. II b1 670, pl. XI), Kültepe (Özgüc 1950:186; Özgüc and Özgüc 1953:171, pl. 31, figs. 196–198), Alaça Höyük (Koşay 1951, pl. 26, A1 a 170), and Boğazköy (Fischer 1963: 70, pl. 121:1068–1070), among others. It is likely to have been an import from Anatolia.

**Ceramic examples:** Two almost exact ceramic copies of the metal vessel from Gournia was found on the Isle of Christ, near Malia (van Effenterre and van Effenterre 1963:109,

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63 Early Minoan examples include one from the Grotto of Miamou (Taramelli 1897:287–312, fig. 13), dating to the EM I period, and another from Palaikastro (Bosanquet and Dawkins 1923, pl. XIA), dating to EM.

64 Davis believes that the “Minoans borrowed the form directly from Anatolia” (1977:89), implying that the Minoans had made this kantharos. It seems more likely given the scarcity of the shape on Crete and the exact copy found on the Isle of Christ that this was an import.
pl. XLIV:7882 [53:2]; also one on p. 109 without inventory number, smaller, no image). One was nearly life size whereas the other one was a smaller version (Davis 1977:89). Given the similarities and the proximity of Malia to Gournia, it is probable that the ceramic kantharoi were the *imitations* of the metal example found at Gournia. The similarity of the clay and metal vessels allows one to example how closely the clay copies emulates the metal one. The only difference between the metal and ceramic examples is that instead of the two small copper rivets at the handle, the clay examples have one large clay rivet at the join between the handle and the rim. This demonstrates that the addition of only one symbolic clay rivet was needed to evoke the quality of metal. In a slightly later secondary burial in the tomb at Gournia that contained the metal kantharos, two other ceramic kantharoi with lobed rims were also found (Boyd Hawes et al. 1908:60, col. pl. C.2–3; Evans 1921, fig. 139b [53:3], 139c [53:4]; also Davis 1977, fig. 71; also Silverman 1974:16–17, fig. 1), and fragments of a third lobed kantharos were recovered in the University of Pennsylvania, presumably from the same tomb (Davis 1979:37, fig. 3). Each of these kantharoi had slightly different appearances. One of the whole examples had a straight central body and a flaring lobed rim (Boyd Hawes et al. 1908:60, col. pl. C.2; also Evans 1921, pl. 139c [53:4]), whereas the other’s upper body was completely folded into ridged sections (Boyd Hawes et al. 1908:60, col. pl. C3; Evans 1921, pl. 139b [53:3]). Both of these vessels had low carinations near the foot, rivets at the join between the handles and the rim, and two thin ribbon handles that extended from the rim to the carination. These two examples were also painted—with white swags and/or floral sprays—some of the only examples of kantharoi on Crete with added white paint. The other kantharoi found on Crete were left monochrome. Closer to Knossos, an example of a clay kantharos was also found at Anesmopilia (Sakellarakis and Sapouna-Sakellaraki 1997:424, fig. 393 [53:5]).\(^{65}\) This example is close in appearance to

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\(^{65}\) Considering the similar appearance of this kantharos to the metal example, which is dated to MM IB, perhaps this vessel should also be dated to this period.
the metal example from Gournia as it has a high carinated shoulder and four lobes. The handles were not as high above the rim as the metal example, but this can be expected with ceramic handles. Also like the metal example (and the direct copies from Malia), this kantharos had clay rivets.

Another vessel with a kantharos shape, although smaller in size than the other examples, was found at Myrtos Pyrgos, containing a number of smaller “votive” copies of the same shape inside (Cadogan 1977–1978:74–75, fig. 12). All the vessels were made in the finest, thinnest clay and were polished to a shiny luster. The presence of “votives” within the cup/kantharos of the same shape may, perhaps, suggest that the kantharos shape had some form of ritual significance (Davis 1977:89).

Given the variation in shape among the ceramic kantharoi, it is not difficult to see similarities between the kantharos shape and a number of cups and bowls with lobed or crinkled rims and one or two handles (see CM CUP 2, CT CUP 2, BWL 6). It is possible that a small number of metallic kantharoi may have spurred the imitation of many of these lobed cups and bowls. Others may be derivative examples of the originals, especially those examples with less “sharp” profiles or with crinkled rims.

Date and Distribution: Most of the ceramic kantharoi from Crete were found in contexts dating to the early part of the MM period (MM IB to MM IIA). The metal example from Gournia is dated to MM IB, as are the other ceramic copies from the same site and those at Malia. The painted kantharoi from Gournia are slightly later than the metal example, but still dated to within MM IB. The kantharos/cup with votives inside from Myrtos Pyrgos was found in a context contemporary with Quartier Mu at Malia, which is dated to MM II. Only the kantharos from Anesmopilia is in doubt. It was found in a later context (MM IIB–IIIA) (Sakellarakis and Sapouna-Sakellaraki 1997:415–426). It has been argued elsewhere (6.III.2 Function of Metal Vessels) that certain objects used in cultic
contexts were purposefully made with “archaic” features in order to retain connections with the past. The shape of the kantharos from Anemospilia is similar in shape to the metal kantharos from Gournia. Perhaps this ceramic kantharos was either an heirloom in a temple context or it was purposefully made to recall kantharoi of an earlier age. The metal kantharos and two ceramic examples from Gournia were found in the same house tomb, and the ceramic kantharos from Malia was also found in a funerary context. Both the kantharoi from Anemospilia and Myrtos Pyrgos may have been related to a shrine.

Discussion: The examples of kantharoi were found at Malia, Gournia, Myrtos Pyrgos, and Anemospilia, all sites in Eastern Crete. Variations on the kantharos shape—either medium or tall carinated cups with lobed rims or shorter bowls with crinkled rims (see CM CUP 2, CT CUP 2; BWL 6)—were found at Malia, Vasiliki, Pseira and, also, apparently, Hierapetras, Knossos, Lebena, Phaistos, and Hagia Triada (Davis 1977:90, fn. 251). Among these sites, however, the vessels with the “sharpest” profiles (with well-defined lobes, thin walls, rivets) are still to be found at Knossos and Eastern Crete (Myrtos, Malia, Vasiliki). The relative derivation of the (medium and tall) carinated cups at Phaistos (more crinkled rims than lobes, low, wide body) may indicate that metal carinated cups may have originally been imported into/manufactured in Eastern Crete.

5.XI PYXIDES (PYX)

A pyxis is a relatively small “box-like” container that is usually fitted with a lid. Two examples of gold pyxides were found in the Shaft Grave III at Mycenae. Both are cylindrical in shape and equipped with lids. One was made in miniature (Karo 1930, pl. CIII; also Davis 1977:241–242, no. 94, fig. 189). The lid of taller of the two was adorned with a small loop handle at the top, and the vessel could be suspended by a gold wire handles (Karo 1930, pl. CIX; also Davis 1977:240–241, no. 93, fig. 188). The cylindrical
pyxis is the most common shape (made from stone, ivory, wood), but pyxides may occur in various shapes. The ceramic examples on Crete have unique shapes.\footnote{A ceramic cylindrical pyxis was found at Phaistos with holes for suspension, just like on the gold example from Shaft Grave III (see Levi and Carinci 1988, pl. 68e). This particular ceramic jar was not listed in the catalog in Levi and Carinci 1988 and it was apparently not photographed or published anywhere else, therefore it was not possible to ascertain whether it was decorated in a “metallic” manner.}

**PYX 1. Carinated pyxis with two horizontal handles**

*Description:* A relatively medium-sized pyxis with a carinated profile. The central body of the vessel has vertical walls; the lower body tapers towards a flat base, and the shoulder tapers towards a thickened, rounded rim. Two horizontal ribbon handles with thickened ridges on the outside are attached mid-body.

*Ceramic examples:* No metal examples of this type of pyxis has yet been found. One example of this kind was found at Phaistos (Levi 1976, pl. 117k–l). The decoration on the pyxis is suggestive of torsional fluting. The body is covered in white “isosceles triangles” whereas the whole base and shoulder sections are painted in white crescents running in a torsional pattern. The handles and rim are painted in white hatch marks. The white crescent motif is one that is used on other types of vessels, such as on BWL 2, CS CUP 3, and RD CUP 2 to suggest the effect of light and shadow on metallic flutes. This is made clearer once the underside of this pyxis is compared to the underside of a molded basin found at Knossos (Hogarth and Welch 1901, fig. 16; also Evans 1921, suppl. pl. IIIb; 1935, fig. 88; also Davis 1977, fig. 58), which itself is an imitation of metal bowls with torsional flutes, as seen at Tòd (e.g., Bisson de la Roque 1950, pl. V:70509). The spacing and the size of the white crescents on the dark ground is very evocative of the metallic flutes. The body of the pyxis is also evocative of metal. It is carinated at the shoulder and near the base. The angular profile of the pyxis recalls the
bridge-spouted jars (BSJ 1) with angular shoulders and the “hammered” vessels (see 4.III Hammering).

*Date and Distribution:* This pyxis from Phaistos was found in the bench of room IL of the Southwest Quarter of the palace. It is dated to MM IIA (*Fase Ib iniziale*).

**PYX 2. Small shallow pyxis**

*Description:* Relatively shallow, cylindrical pyxis with two horizontal handles. Decorated in stamped spirals. Approximately 8 cm tall.

*Ceramic example:* No metal example of this particular kind of pyxis has been found to date. Only one ceramic example with such decoration has been found at Phaistos (Levi 1976, pl. 117g [*53:8*]). The pyxis is unusual for its stamped spiral decoration. The single row of spirals run the whole circumference of the body within a delimited panel. This panel was coated with a creamy white paint, perhaps a reference to gilding or silver overlay. The size and form of the spirals on the pyxis are akin to the repoussé spirals found on a cup from Knossos, which was seemingly also coated in a creamy white paint (MacGillivray 1998, pls. 19:434 [*48:15*] and 82:434, see esp. pl. 82.434 for white paint). Other vessels were adorned with stamped or repoussé spirals, but the spirals are not as well matched as on the cup from Knossos (e.g., BSJ: Pernier 1935, pl. XXXV [*40:8*]; SG CUP: Pernier 1935, pl. XXIVa [*43:7*]). Large repoussé spirals are a feature of some large metal jars found in Shaft Graves IV and Epsilon (Matthaüs 1980:179–180, pl. 32:259k, 32:261e). It is likely that the stamped spirals on this pyxis is meant to emulate repoussé work.

*Date and Distribution:* The ceramic pyxis with stamped spirals was found in room LX of the Southwest Quadrant of the palace. It was found in a context that could not be more accurately dated than MM II (*Fase Ib*). Given its similarly in style of the spirals to the
cup from Knossos, however, it is likely that this pyxis was probably made sometime during the MM IIB–IIIA period (cup was found in the “West Polychrome Deposits,” which is mainly dated to this period, MacGillivray 1998:33–34).

5.XII RHYTA (RHY)

Rhyta come in many different shapes. The only unifying feature of this type of vessel is the presence of a secondary opening, usually at the base (Koehl 2006:5). According to Koehl’s (2006) classification system of Aegean rhyta, there are four large classes of rhyta, based on the morphological features of the opening and the base. Among the sub-classes of rhyta, the types found in Middle Minoan Crete include Type I Figural; Type II Piriform, Globular, Ovoid, and Figural; Type III Head-shaped and Piriform; and Type IV Figural rhyta (Koehl 2006:281–283, table 5). In simpler terms, rhyta in the Middle Minoan period fall in three camps: figural rhyta (full-figure bulls, a female figure, a pomegranate, a miniature pithos, and bull’s heads), conical rhyta, or rhyta with rounded bodies of varying maximal widths (Piriform, Globular, Ovoid).

RHY 1. Figural whole body rhyta

*Description:* Rhyta that take the shape of another object, animal, or person (Koehl 2006, Type I figural rhyta). During the Middle Minoan period, only bull-shaped rhyta and a rhyton in the shape of a woman were found.

*Metallic examples:* No anthropological and zoomorphic rhyta have yet been found in metal form. Nevertheless, the silver stag-shaped vessel found in Shaft Grave IV at Mycenae (Karo 1930, no. 388, pls. CXV–CXVI; also Marinatos and Hirmer 1960, pl. 177; Özküç 1953, pl. XXXIX, 273; Vermeule 1975:15–16; also Koehl 1995), probably an import from Anatolia, does indicate that precious metal zoomorphic vessels were known in the Aegean in the later Bronze Age. Furthermore, since many LM IA and LM IB Type
I Figural: zoomorphic rhyta were so detailed, it is thought that the molds for the vessels “must have been extraordinarily realistic statuettes, that were, perhaps, made from wood or metal” (Koehl 2006:14). If indeed these later zoomorphic rhyta were molded on metal prototypes, perhaps earlier zoomorphic rhyta were also inspired by metal figural rhyta.

Ceramic examples: Whole body figural rhyta are the earliest rhyta on Crete. These are the only types of rhyta to occur prior to the Protopalatial period, although the type does continue into MM IIA (Koehl 2006:280–281). Three examples of rhyta in the shape of bulls were found at Phaistos in the bench of room IL, dating to MM IIA (Fase Ib iniziale) (Levi 1976, pl. 161a–f; Levi and Carinci 1988, pl. 64d; also Koehl 2006:73, nos. 15–17, fig. 1, pl. 2:16). These were painted with various white and red loop patterns set on a dark ground. It is suggested that perhaps these motifs represent hunting nets (Koehl 2006:73). Another figural rhyton in the shape of a woman with a long bell skirt and elaborate hairdo was found in a drainage pit at Phaistos dated to MM II (Levi 1961–1962a:395, fig. 35; Koehl 2006:77, no. 35, pl. 5). Traces of black slip were found on her skirt, although it is likely that the skirt was elaborately painted as well.

Date and Distribution: Whole body figural rhyta were found in the EM period, but do not seem to extend very much longer past MM IIA. The examples from Phaistos, three of which were buried in the bench of a room (IL) possibly used as a cultic space, might indicate that these particular examples were heirlooms at the time of their deposit.

RHY 2. Figural animal head rhyta

Description: Rhyta in the shape of animal heads. Wide neck (see Koehl 2006, Type III Head-shaped rhyta). In the Middle Minoan period, only bull’s heads are known.

Metal examples: The animal head rhyta of precious materials found in the Aegean may have been inspired by metal animal head cups imported from the Near East or Anatolia.
In a letter from the director of the royal workshops to the king of Mari, Mukannishum writes that he has ordered to be made “two drinking vessels of silver in the form of a bull’s head, weighing 650 g; eight drinking vessels in the form of an ibex head and one drinking vessel of red gold, weighing (nearly) 3 kg, 1 silver drinking vessel in the form of a gazelle’s head weighing 200 g, weighed with the king’s personal set of weights” (Bottero et al. 1964, XIII:8; Dalley 2002:59). No precious metal cups were found as early as the Old Babylonian period (EB IV–MB I), but later silver examples from Anatolia (MBA) give some idea of what some of cups described at Mari may have looked like (Dalley 2002:60, fig. 27, bull and stag’s heads). And, just like what likely happened in the Aegean, these more costly cups engendered ceramic copies. Clay animal head cups were found in Syria (Dalley 2002:61, fig. 29, calf head?) as well as Anatolia (Dalley 2002:61, fig. 28, bull and lion’s heads). That metal animal headed cups made their way to Crete may be ascertained by the Keftiu tribute scenes in various tombs in Egypt (albeit, from the later LBA). In this scenes, persons said to be from the Aegean, carry what have been described as metal vessels, including large bull’s heads (silver inlaid with blue paste?). The same choice of motif—bull, lion, and other bovidae—from Anatolia and the Near East parallels the repertoire of animal headed rhyta on Crete. It is possible that the idea (if not actual examples) for animal cups (without holes in the bottom) came from Anatolia or the Near East, but that the Minoans adapted these particular objects into rhyta for their own ritual purposes.

Ceramic examples: Thus, even if there is little evidence for metal zoomorphic figurines in the Middle Minoan period, there does seem to be some indication that Figural rhyta in the shape of animal’s heads may be imitating rhyta made from precious materials. Ceramic examples from MM II and MM III (?) in the shape of bull’s heads have been found at Phaistos (Levi 1961–1962a, fig. 28; Levi 1976, pls. 162c, LXVIIIa, c [53:9], LXVIIIb, d [53:10]; also Koehl 2006:127, no. 349, pl. 28) as well as Kommos (Betancourt
1990:163; Koehl 2006:127, no. 350, fig. 13, pl. 28). These can be compared to the extant metal and stone rhyta found in later contexts, such as the silver bull’s head from Shaft Grave IV at Mycenae (Schliemann 1878:215, 218; Koehl 2006:115, no. 294, fig. 12, pl. 22), the serpentinite bull’s head from the Little Palace at Knossos (Karo 1911:252; Evans 1921:427, 438; 1928:408, 527–530, 533, figs. 329–332; Koehl 2006:118, no. 307, pl. 24) or the stone bull’s head from Zakros (Platon 1963:184–185, pl. 152a; Warren 1969:89; Platon 1971:2, color photo, 64, 158, 161–163, 160 photo; Koehl 2006:116, no. 295, pl. 22), to name a few. Even though the ceramic animal head rhyta do not seem to be direct imitations of metal and stone animal head rhyta (as each animal head were individualistically rendered), it seems possible that the clay examples may have been cheaper versions of rhyta made from more precious materials.

_date and distribution:_ Figural animal head rhyta were found in MM II (Fase Ib) and MM III contexts. Two of the bulls’ heads from Phaistos (Levi 1976, pls. LXVIIIa, c [53:9] and LXVIIIb, d [53:10]) were found in the “canale sulla roccia” in the palace and on the “Acropoli Mediana,” respectively.

**RHY 3. Piriform Rhyta**

_Description:_ Piriform rhyta are jug-like vessels with constricted necks, a wide flaring rim, piriform-shaped bodies, and small constricted base pierced by a hole at the base (see Koehl’s Type II Piriform class; 2006:22–26). Koehl (2006:22) differentiates this class into two subclasses, depending on the presence (Type II RH/SH Piriform) or absence (Type II HL) of a handle. Piriform rhyta are more common in the Late Minoan period, however, a few examples are known from the Middle Minoan period.

_Ceramic examples:_ Although no metal examples of rhyta of this class have yet been found, many of the ceramic rhyta of this class display “metallic” features. Three rhyta display clay rivets at the join between the handle and rim, one from Phaistos (see below),
one possible example from Knossos (Koehl 2006:85 no. 80) and another from Zakros (Dawkins 1903:259, fig. 37; also Koehl 2006:85–86, fig. 5:82). This latter rhyton is decorated in Barbotine work, but the clay rivet (and torus ring) on this example indicate that the shape was drawn from metallic models. Many of the rhyta of this class from this period and later (Koehl 2006, figs. 5–7) also display the neck torus. As some necks appear to have been made separately from the body (e.g., Koehl 2006, fig. 7:109 and 138) or were painted to imply that they were made separately (e.g., Koehl 2006, fig. 6:96, 101–104, fig. 7:108, 123–124, and 137), it seems like, just like some jugs (JUG 1), the metal prototypes for these piriform rhyta were probably made in two or three pieces. The torus ring would have covered the join (see also 3.II.2 Torus Rings and Separate Necks).

One rhyta that encapsulates many of these “metallic” features in one vessel is a specimen that was found at Phaistos (Levi 1976, pl. XLVb [53:11]; also Koehl 2006:24, fig. 5, pl. 9:78). In addition to the clay rivet on the handle, this rhyton also featured a high up-swung handle, a torus ring around the neck, and a cut-out petal rim (see also 3.II.3 Cut-out Petal Rims). The torus ring is painted orange with superimposed red dots, probably a reference to a copper reinforcing band with rivets. This vessel is the earliest rhyton on Crete with clear “features that may have been inspired by metal rhyta that are no longer extant” (Koehl 2006:24). Besides the obvious structural details imitating metal (rivet, collar, handle, tapered base), the rim and neck on this rhyton is also reminiscent of features seen on other ceramic vessels that may also have metal antecedents. The rim of one rhyton is cut to resemble flower-like petals and features molded “spirals” on the top. This cut-away rim is reminiscent of the “creamy-bordered” rims of some basins from Knossos (MacGillivray 1998, pls. 63: 548–549 and 91:548–549; see under BAS 1) and the cut-out petal rims on stands from Phaistos (Levi 1976, pl. 62b, 62c, pls. LXXIV, XXVIIc; see under STD), including the painted rim on the famous stand with appliqué flowers, also from Phaistos (Levi 1976, pl. XXVIIa [53:16]). The molded spirals on the
rim of the ceramic rhyton, which if they are meant to evoke “whorl-shells,” have similarities with metal cups with added rims from the mainland (RD CUP 1) and with large basins from Crete (see BAS 1). The fact that the neck and rim is painted a different color from the body (white) may indicate that two different materials were used to fashion the original metal rhyton, in this case, possibly silver and gold. The practice of using one material for the neck and another for the body is also seen for on jugs with “metallic” traits, including four jugs also rendered in the “creamy-bordered” style (Evans 1935, pl. XXIXd, XXIXf; also MacGillivray 1998, pls. 90:542, 91:543–544 [51:17]; JUG 1). Other fragments of vessels with cut-out “petals” at the rim were found at Knossos (Evans 1935, fig. 86, pl. XXIXa, b, c; Koehl 2006, pl. 9:80). Due to the narrow opening at the mouth and the petaloid rim of these vessels, Koehl (2006:85) wonders whether these fragments may also have been rhyta in the same style as the rhyton from Phaistos with cut-away petal rim (Levi 1976, pl. XLVb [53:11]). Found in Kouloura 3, these fragments of vessels with cut-out “petals” may possibly date to MM II A (Evans 1935:119).

In the same class as the rhyton with petal rim in shape are two fragments of rhyta from Knossos that may have belonged together (MacGillivray 1998, pls. 21:539 and 90:539 [53:13]; pls. 30:1005 and 149:1005 [53:12]; also Koehl 2006, fig. 6:90, 91 reconstructs the pieces together). It is unlikely that the vessel would have had a handle (see Type II Piriform HL class, Koehl 2006:24–26). The fragments were decorated in vertical “tortoise-shell ripple” striations: on the shoulder and at the base. The pieces together are similar in shape and decoration to two other Type II HL Piriform rhyta, both from Gournia, House B, room 11 (Betancourt and Silverman 1991:75, nos. 685–686, fig. 32, pl. 34; also Koehl 2006:88–89, figs. 6:102, 6:104), allowing for a reconstruction of the whole vessel. These latter rhyta are later in date, however (LM IA). Although these pieces are stylistically MM IIIA due to the “tortoise-shell ripple” decoration, it is also
conceivable that they could date to the end of MM IIB, especially if this rhyton was the first of its kind with this decoration (see Betancourt 1985:113 for the motif and under 4.1.2 under “Tortoise-shell ripple”).

**Date and Distribution:** The piriform rhyton with cut-out petal rim (Levi 1976, pl. XLVb [53:11]) was found in room LXI of the Southwest Quarter of the palace. It is dated to MM II (Fase 1b). The piriform rhyton with “tortoise-shell ripple” from Knossos was found in different deposits. The lower half of the vessel [53:13] was discovered in the “West Polychrome Deposit” (MacGillivray 1998:33–34), whereas the upper half [53:12] was found in “South Polychrome Deposit” (MacGillivray 1998:46–49). Both contexts were similar in that represent a probable filling operation in the area after a seismic event. The deposits are dated to MM IIB–MM IIIA.

**RHY 4. Globular Rhyta**

**Description:** Globular rhyta are vessel-like rhyta with constricted necks, flaring rims, and globular-shaped bodies. The base is either flat or slightly pointed. No handle. A hole pierces the base (see Koehl’s Type II Globular type; 2006:26–28).

**Ceramic examples:** The earliest globular-type rhyton was found at Phaistos (Levi 1976, pl. 115a, d [53:14]; also Koehl 2006:94, no. 140). It is described as complete (Koehl 2006:94, no. 140), but comparisons with other globular rhyta (see Koehl 2006, fig. 8) indicate that the vessel probably had a separately attached neck and rim. The neck was probably short with a flat, flaring rim. The decoration on this rhyton shows two panels of retorted spirals enclosing zones of alternating diagonal lines, or a “chevron” pattern. The spirals may perhaps be imitating repoussé spirals, and the “chevron” band may be emulating a number of ornamental bands.
Two fragments of a globular rhyton (presumably belonging to each other) were found in the same deposit at Knossos (MacGillivray 1998, pls. 78:398, 78:399 [53:15]).67 The fragments likely belonged to a globular rhyton. The rim fragment of the piece is described as having a thick orange band at the rim with added red dots (MacGillivray 1998:142 no. 198). Again, this is a probably reference to a reinforcing band at the neck (see Davis 1977:337 for examples of this practice on Minoan vessels in the Shaft Graves at Mycenae). Both pieces are painted in white “crescents”/thick vertical lines around the whole body. The decoration is reminiscent of the white “crescents” on other vessels, such as for example, on the bottom of a pyxis (PYX 2) from Phaistos (Levi 1976, pl. 117k [53:7]), which has been interpreted here as a way of evoking torsional fluting (see 4.1.1 Torsional Flutes). Thus, it is likely that the decoration on this rhyton was also meant to evoke fluting as well, suggesting metallic antecedents with this decorative technique.

Date and Distribution: The fragments of rhyta from Knossos with torsional fluting [53:15] were found in the “West Polychrome Deposit,” which has been dated to MM IIB–IIIA (MacGillivray 1998:33–34). As torsional fluting is more commonly seen on ceramics dating to the earlier half of the Middle Minoan period (MM IB, MM IIA),68 perhaps this particular rhyton was an heirloom at the time of its deposition. On the other hand, the tortional fluting seen here may perhaps be the incipience of the “tortoise-shell ripple” motif, which has been found on vessels dated to MM IIB–IIIA. The globular

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67 In his catalog, MacGillivray (1998:142 no. 398) mentions that this is a “fragment of the bottom.” However, in the same description, he mentions “a thick orange band with added red dots at the rim” (1998:142). Since fragment no. 399 has the hole at the base of the rhyton (which is complete) and fragment no. 398 has what appears to be a lip or rim, it is more likely that this is the top fragment and that both sherds belong to the same vessel.

68 The exception to this is a molded basin with torsional flutes from Knossos (Evans 1921:242–243, suppl. pl. IIIb; 1935:120–121, fig. 88) whose date is uncertain, but could be early (MM IB–MM IIA) because of the molded flutes or later (MM IIB–IIIA) because of its resemblance to other basins from this period.
rhyton from Phaistos was found in room LV of the Southwest Quarter of the palace in a context dating to MM II (Fase Ib).

5.XIII STANDS (STD)

“Stand” is a term used here to refer to a type of vessel with a wide-mouthed bowl/dish set on a pedestal base. As each stand is pretty much unique in size, shape, and decoration, some of these objects have been known by different names: “fruitstands,” “piedestalli,” kraters, offering tables, etc. To avoid trying to impose any sort of functional or too-finely attuned typology to these objects, they are discussed here together under the unifying rubric.

The defining feature of the stand is a relatively tall pedestal section of the vessel. At the base, for stability, the pedestal is usually set on a wide, flat foot. The main body of the vessel is the bowl or dish set upon the pedestal. In most cases, there is no access from the bottom of the bowl to the hallow pedestal, although there are exceptions. The height of the pedestal varies. The “metallic” features on these stands differ according to each vessel. The following list of stands are emblematic of the kinds of “metallic” features seen on these kinds of vessels.

STD 1. Stand with flower appliqués

*Description:* Pedestaled vessel with deep bowl. Pedestal sits on flat base, which is decorated with cut-away “petals.” Added torus rings around the base of the bowl and the base of the pedestal. These are painted orange with red dots. Two horizontal handles on the bowl. One small hook around the bevelled rim and holes (two or three?) in the rim presumably for the insertion of other hooks. Two chain links hanging from the hook. The hook and chain links are possibly metal. Four large white ceramic flowers attached to the pedestal and two sets of twin flowers were set just below the rim perpendicular to the
handles. A large painted band of alternating white and red squares resembling a checkerboard surrounds the mid section of the bowl. The pedestal and upper half of the bowl is decorated with an orange “corral” motif. Below the checkerboard motif is an orange band superimposed by red dots. The outer rim is painted in white “triangles,” which evokes the cut-out petals of the base.

_Ceramic example:_ A number of “metallic” features on this unique stand from Phaistos suggests metal antecedents (Levi 1976, pl. XXVIIa [53:16]). Although a more common feature of the rim, the cut-out “petals” around the base of this stand is evocative of the gilded added metal rims of certain cups (RD CUP 1) and basins (BAS 1), seen in Crete and the mainland. The cut-out rim was perhaps a means of imitating the scalloped edge of these added rims, or, perhaps, the petal rim may have once been a metallic feature on otherwise lost metal vessels (see also 3.II.3 Cut-out Petal Rims). That the cut-out petals around the foot is meant to suggest an added decorative base attachment on this stand is suggested by the “ribbed edge” on the interior of the petaled feature (see Levi 1976, pl. 62a). This ribbed edge in ceramic is identical to the “cross-ribbing” seen on the interior edge of many metal RD CUP 1 and BAS 1 added rims (see, e.g., Davis 1977, fig. 207; Matthäus 1980, pl. 39:323, 325). This ribbed edge represents the fine finishing gold wire at the edge of the added rim. The presence of the “ribbed edge” on the interior end of the petal feature of the base, then, suggests that the foot of the original metal model was covered with an additional decorative feature. The creamy white color of this feature is a nod to the usual practice of gilding these “added rims” (see 3.II.3 Added Rims). The cut-out petals around the foot was also found on STD 3 (Levi 1976, pl. LXXIV [53:18]) and in a more derivative form on two other pedestaled vessels (Levi 1976, pls. 61a, 61e). The painted white “triangles” on the rim of this stand was also likely meant to evoke a petal rim. Although painted on this example, actual cut-out petal rims were found on two other stands—STD 2 (Levi 1976, pl. XXXVIIc [53:17]), STD 3 (Levi 1976, pl. LXXIV [53:18]).
supporting the likelihood that some metal stands were decorated with petal cut-out bands both around the rim and foot.

The flower appliqués around the pedestal base and just below the rim are unusual features in ceramic. This is the only vessel known from Phaistos or Knossos with these particular clay additions. It is possible that these flowers were modeled on metallic appendages. The shape and decoration of the clay flowers are very similar to the features of a free-standing gold flower discovered in the house tomb at Chrysolakkos, near Malia (Evans 1921:75, fig. 47; Demargne 1930:410, fig. 4), whose MM I–II date is close to the date of the ceramic stand. The gold flower from Malia is thought to be a pin, but, perhaps, just like two metallic small goat heads from Gournia that may have been attached to vases (Silverman 1974:12–13), perhaps metallic flowers were occasionally attached to special ritual vessels (see more under 3.II.2 Cut-out Petal Rims).

In addition to the plastic flower adornments and the added “metallic” decorative features, the small hook and chain links are highly suggestive of metallic antecedents. It is unlikely that a chain composed of ceramic links could support the weight of anything suspended to the chain. The links would likely be too weak. The presence of three (maybe four) hooks around the rim of the vessel (at least two holes, in addition to the preserved hook, were seemingly reconstructed with hooks in them, cf. Levi 1976, pl. XXVIIa, pl. 62a, and Hadzi-Vallianou 1989, fig. 6) suggests that more than one chain was intended, seemingly contra Marinatos and Hirmer’s theory that a ladle could have been attached to the preserved chain (1960:121). Rather, the spacing of the holes/hooks around the rim hints at the suggestion that the vessel was meant to be suspended (or at

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69 The base of this vessel was missing. Therefore, it is not possible to say with certainty whether this vessel was set on a pedestal, making it a stand, or whether the base was closed, which would suggest it was a basin. Levi and Carinci 1988:340, pl. 11g, call it a “fruttiera.”
least emulating a metal vessel meant to be suspended). Since ceramic chains were not likely, it is more realistic than metal chains were looped around the hooks and joined above the vessel. If this were the case, then perhaps this vessel (or its metal counterpart) was swung, like modern-day incense burners (cf. JAR 4 for the use of ceramic vessels with metal handles). This, however, can only be speculation at the moment.

The presence of two clay torus rings around the base of the bowl and the base of the pedestal are indicative of the manner in which metal stands of this kind were made. Given that torus rings were used to cover the join between two sections of a vessel, if indeed this clay stand were representative of an actual metal model, then the torus rings on this example suggest that the original metal stand was built from three pieces: the bowl, the pedestals, and the separate foot. The orange color of the rings and the red color of the imitative “rivets” on the band recalls the torus rings on the small jug with “coffee bean” shapes (JUG 5; [52:17]) and the rhyton with petal rim (RHY 3; [53:11]), for example, which themselves recall the practice of using copper strengthening bands on certain metal vessels from the Shaft Graves at Mycenae (Davis 1977:337).

In decoration, the stand is a mix between “metallic” decorative features and “ceramic” traditions. The “corral” motif is likely drawn from the potter’s imagination. The checkerboard pattern may perhaps be a reference to a decorative ornamental band (see under 4.IV Ornamental Bands) and the orange band with red dots may perhaps be a reference to a strengthening band. The same orange band and checkerboard pattern is seen on an ewer (JUG 1), which was found in the same room as the stand (Levi 1976, pl.

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70 In light of these hooks and the chain on this vessel, the position of the three ceramic lugs with rivets on the “candeliere” from Phaistos (Levi 1965–1966, fig. 25a–b; also Levi and Carinci 1988, pl. 11f) is suggestive. Basically, the “candeliere” is a vessel on a stand. The lugs on the “candeliere” suggest that the original metal lugs had rings through them. Again, were the rings used to suspend or swing the vessel? What these features may have been used for is difficult to say at the moment.
XXVIIb [51:18]). It is likely the two were used as a set (see also 6.III.1 Ceramic Vessel Sets).

*Date and Distribution:* This unique stand with flower appliqués was found at Phaistos in room LV of the Southwest Quarter of the palace. It cannot be dated any more precisely than MM II (*Fase* I b).

**STD 2. Low offering stand**

*Description:* Low pedestaled vessel with dish-like top. Slight dip towards the center of the dish. Cut-out petal rim around the lower edge of the dish. The petals are incised with two “veins” and painted white. They hang downward. Another set of white “petals” tilting upwards around the base of the foot. Stand is pained over the whole body and pedestal with swirling white motifs.

*Ceramic example:* Just like the stand with flower appliqués (STD 1) and the stand with notched petals (STD 3), this low offering table was also adorned with a frieze of white cut-out petals around its “rim” (Levi 1976, XXVIIc [53:17]). The white color of the petals recalls the practice of gilded added rims at times applied to metal cups (RD CUP 1) and certain basins (BAS 1; for more information on the metallic origins of cut-out petal rims, please see 3.II.3 Added Rims and Cut-out Petal Rims). The painted swirling motifs on the vessel are not particularly “metallic” in appearance, although, theoretically, inlay cut-outs may take any shape. As this low offering table was found in the same room as the stand with flower appliqués (STD 1), it is possible that the two different types of stands were made as a set for different purposes.

*Date and Description:* This low offering stand was found at Phaistos in room LV of the Southwest Quarter of the palace. This is the same room in which STD 1 and its matching
ewer were found as well (see above). Perhaps this offering table was used in conjunction with these other objects during some form of ritual activity.

STD 3. Stand with cut-out petal rim and base

*Description:* A relatively tall pedestaled vase set on a wide foot. Deep bowl. Rim is incised to resemble frieze of petals. Each petal is incised with two “veins.” The outer edge of the foot is carved into upward-facing “triangles.” The triangles are likely an attempt to evoke another frieze of cut-out petals, as seen, for example, on STD 1 and STD 2. At the first carination point of the vessel, another band of notched triangles parallels the incised decoration around the foot. These triangular notches face downward, however. The rim and the two notched friezes are painted white. The rest of the vessel is painted in a manner evocative of inlay work.

*Ceramic example:* Just like STD 1 and STD 2, this stand was decorated with a frieze of cut-out petals around the rim (Levi 1976, pl. LXXIV [53:18]). The notched foot and band around the body is also likely a reference to petals. This “metallic” trait is likely emulating a technique of adding gilded bands and rims to some metal vessels (for more, see BAS, 3.II.3 Added rims, Cut-out Petal Rims). With the exceptions of one type of cylindrical spouted jar (Levi 1976, pl. XLlb [51:1]) and a rhyton with a petal rim (Levi 1976, pl. XLVb [53:11]), the only other ceramic vessels with cut-out petal rims are stands (STD 1, STD 2, STD 3) and basins (e.g., MacGillivray 1998, pls. 63:548 and 91:548, 549; BAS 1). In the case of another vessel with petal rim, it is even difficult to discern whether this vessel without a base was even a stand or a basin (see Levi 1976, pl. 184e; also Levi and Carinci 1988, pl. 11g). Given this unique distribution of the cut-out petal rim, it is possible that stands and basins were used together in a set (see under 6.III.1 Ceramic Vessel Sets).
Although it can not be corroborated by any specific extant metal examples, the decoration on this stand is very evocative of inlay work. On the two lower registers of the stand, the motifs are simple, staid, and repetitive, characteristic features of the inlay work on some metal vessels (and weapons) from the Shaft Graves at Mycenae (see Xenaki-Sakellariou and Chatziliou 1989) (see also 4.VII Inlay and Enameling). The lowest register displays pendant flowers composed of individual pieces, and the middle register is composed of staid, simple “tear drop” shapes. While the spiral motif around the upper register is repetitive, as an inlay motif, it is a little more sophisticated than the inlays of the lower half of the vessel. For one, it is more “finicky” and would require more precise cutting. Nevertheless, it is possible. Consider the decoration on a straight-sided cup from Knossos (Evans 1921, fig. 186 [33:8]). The cup is decorated in a series of repeated double loops and flanges. At fixed intervals, red dots are painted in the center of the double loop and where adjoining loops meet. In design, this cup is likely imitation metal ajouré work, that is to say in a technique of leaving large open spaces in one sheet of metal. The metal sheet is cut out into a repeated pattern and then affixed to the surface of the vessel. In this case, by small copper rivets (see Xenaki-Sakellariou and Chatziliou 1989:11 for use of rivets on daggers and cups in Shaft Graves). The same technique could have been used on the metal stand emulated by the ceramic one. The red dots and the red lines on the tail ends of the spirals could be representing copper rivets and bands (see also 4.IV.1 Bands with Dots for use of copper bands to prevent cut-outs to come off the surface of the vessel). Thus, the spirals could also represent inlay work as well.

This stand with spirals and other inlay-inspiring motifs may not have been the only stand emulating inlay and enamel work. Another candidate is another stand from Phaistos (Pernier 1935, pl. XXIIa). In this case, what is noticeable is the large rosette motif around the interior of the bowl. This simple rosette pattern is reminiscent of the simple rosettes on such inlaid pieces as the gaming board from the “West Temple
Deposit” at Knossos (Evans 1921:470–472 and 480–482, fig. 337, reconstruction fig. 344 [32:3]), the faience rosettes on an ivory lid from Tylissos (Evans 1921:482, fig. 345 [32:4]), a Minoan gaming board with inlaid faience rosettes found in Shaft Grave IV at Mycenae (Evans 1921:483, fig. 346 [32:5]; Karo 1930, pl. CLII:555–556, and p. 244 for the Minoan origin of the faience objects), and the inlaid silver rosette on the base of the Vapheio cup from Midea (Davis 1977, fig. 97 [31:2]). The rosette on the stand may be derivative of the inlaid rosettes on these other objects (see also, 4.VII Inlay and Enameling). Even the simple, repetitive motifs around the body of this vessel may also be indicative of inlay work.

**Date and Distribution**: The stand with petal rim and possible inlay work was found at Phaistos in room LI of the Southwest Quarter of the palace. It was found in a MM IIB mature context (*Fase II*). The decoration of the stand, if indeed it is modeled on metallic inlay work, demonstrates the skill of the Minoan metalworker in inlay work at this moment in time. It shows the increased sophistication of the technique compared to the early experiments in inlay as seen on examples dating to the MM IB and MM IIA periods. The other stand possibly emulating enamel work was found in room VI of a shrine, also dating to a MM IIB mature phase. The late date of both of these stands suggest that inlay and enamel work had probably reached a sophisticated level by this time.

**STD 4. Stand with figural design and ornamental bands**

*Description*: Tall pedestaled vessel with bowl-like top and large flat base. Thick, flat rim extension. Decorated with dancing female figures on the inside of the bowl, around the base, and around the outer edge of the rim extension. The rim extension is covered in a pointillé design of S-shapes, and linked-dot bands frame the inner and outer edges of the rim and base.
Ceramic example: One of the few vessels with figural painting on it, this stand was found in rooms XXVIII and LIV of the Southwest Quarter of the Phaistos palace (Levi 1976, pl. LXVI [53:19]). This stand is an example of a stand with “metallic” decorative features and “ceramic” painted designs. It is cited here to demonstrate that decorative added bands were probably used on metal stands for decorative purposes.

Around the inner and outer lips of the rim and the base were painted bands of white parallel lines punctuated by red dots. This band of dots is similar to the added bands seen on some cups and bridge-spouted jar (e.g., Pernier 1935, pl. XX [23:3]; Levi 1976, pl. LIIa [23:1]; see 4.IV.1 Bands with Dots), which, themselves, recall the rows of gold cut-out circles on the electrum goblet from Shaft Grave IV at Mycenae (Karo 1930, pls. CXII–CXIII; Davis 1977:208–220, no. 83, figs. 172–173; also Xenaki-Sakellariou and Chatziliou 1989:29, no. 18, pl. XII [23:8]) or the gold and electrum strips with bosses on the silver ewer from Zakros (Platon 1971, fig. on p. 87; Davis 1977:102–105, no. 13, figs. 76–77 [21:8]). If these bands are, in effect, imitating metal bands, then perhaps certain metal stands were decorated with inlaid strips of silver or gold and cut-out copper circles. The punctuated S-shapes around the rim are similar in design to the pointillé S-shapes on a tall carinated cup found in one of the rooms (LIV) in which fragments of this stand were recovered (Levi 1976, pl. 133q [46:18]). The S-shapes are also reminiscent of the stamped backwards S-shapes and dots/rosettes found on a lustrous metallic-looking sherd from the “Royal Pottery Stores” at Knossos (Evans 1921, fig. 182b [28:9]). Perhaps the S-shape, a motif engraved into one of the gold flowerbeds of the electrum goblet from Shaft Grave IV at Mycenae (Xenaki-Sakellariou and Chatziliou 1989, pl. XII:1, XII: 2) was considered special in some way. This stand was not the only one with possible “metallic” bands. Other stands may have also been modeled on metal stands with added bands (Levi 1976, pls. 21a, 61a, 61e).
Date and Distribution: Fragments of the stand with the female figures was found at Phaistos in rooms XXVIII and LIV of the Southwest Quarter of the palace. It is dated to MM II (Fase Ib). Found next door to this stand (in the sottoscala of room LIII–LIV) was a bowl, also painted with female figures (Levi 1976, pl. LXVII). Just like certain basins may have been used with stands (see above and 6.III.1 Ceramic Vessel Sets), it is also possible that this bowl was used as a set with the stand.

5.XIV TEAPOTS (TP)

The teapot shape on Crete is a long-lived one. It appears already by the early EM II period (see Betancourt 1985:24, 30, fig. 13 teapot, pls. 2I, 3E). It continues in various shapes throughout the EM into the MM period. By the MM period, its shape is semi-globular, and the spout is not so extravagant as in the EM IIB and EM III (see Betancourt 1985:36 fig. 17 teapot, 45, fig. 27F, pl. 4B, 4E, 4H [EM IIB]; Betancourt 1985:54, fig. 34 teapot, 59, fig. 39C [EM III]). The typical shape in the MM is likely derived from earlier models (see Betancourt 1985:74, fig. 48 teapot). There are a couple of new teapot shapes that are introduced in this period that may have metallic origins. These are considered below, include a teapot shape with long, narrow spout (TP 1), a teapot set on a pedestal base (TP 2), and various teapots resembling bridge-spouted jars with extravagant spouts (TP 3).

TP 1. Teapot with long narrow spout

Description: Teapot with ovoid body, beveled rim, raised base, one vertical handle, and a long, narrow spout.

Metal examples: Two silver teapots were found in tombs at Byblos with the same profile as one ceramic example from Phaistos (Montet 1928:189–191, pls. CXI, CXII, nos. 746, 747; also Davis 1977:80–81, figs. 60–61 [54:1–2]). One teapot was found in the royal
grave of Abichemou, whereas the second was found in the grave of his son Ypchemouabi. Although similar in appearance, according to Davis, the later teapot [54:2] was probably a counterfeit of the first (1977:79–83). Both vessels shared similar features: a high shoulder tapering to a raised conical base, a straight neck, a rolled over rim, one vertical ribbon handle, vertical fluting on the body, and a long narrow spout, triangular in section. On the earlier example [54:1], the body of the vessel (mid-way between spout and handle) was punctured by a small hole, from which a small tube was fused to it on the inside (Davis 1977:81). Although sometimes considered Minoan in origin, the original teapot was more likely an import to Byblos, probably from Anatolia (Davis 1977:81–82). The shape itself is “specially characteristic of a widespread family of clay vessels from North Syria and Anatolia” (Evans 1928:826; e.g., Tufnell 1969:10; also Schaeffer 1948, figs. 182:16, 25, 183:14, 193:10, 27, 31; Davis 1977:81–87), but the triangular spout is a feature more at home in Anatolia than in the Levant or Crete (e.g., Özgüz 1959, pl. XXXIX:1 [Kültepe]).

Ceramic examples of teapots with conical bases and straight necks, similar in shape to the ones at Byblos, have been found in ceramic versions in Anatolia as well (e.g., Fischer 1963:42–43, pl. 34 no. 346 [Bogazköy]; Koşay 1966, pl. 12 no. h200 [Alaça Hüyük]). Overall, the shape and specific details, such as the horizontal incisions around the neck, which is frequently found in Anatolian metalwork and in ceramic (Davis 1977:83), points to an origin in Anatolia. If this were indeed the case, then this teapot is another piece of evidence for the theory that Anatolian silver vessels were making their way to Byblos or another port in Northern Syria, where Cretan merchants were waiting to bring them home (see more under 6.II.1 Origins. Anatolia and the Near East).

Ceramic examples: On Crete, not many examples of ceramic teapots with narrow spouts were found. One particular example is similar in profile to the silver teapots from Byblos (Levi 1976, pl. XLIVc [54:3]). The ceramic example does not have a vertical like the metal examples, nor an upswung ribbon handle, but these are features that were more
difficult to render in clay, thus, perhaps the profile was sacrificed somewhat to accommodate the medium in which it was made. What the ceramic example does have is a raised conical base and a long narrow spout.\textsuperscript{71} Raised conical bases are not common in the Middle Minoan period,\textsuperscript{72} and only this teapot and TP 2 share this feature on teapots. A raised base is sometimes an indicator of metallic antecedents, especially in conjunction with other “metallic” features (Walberg 1987a:37). The painted decoration of orange triangles surrounded by white swirls and flanges is not particularly “metallic”—and may derive from a ceramic tradition—but the clay knob mid-way between the spout and handle is interesting in that it is found at the same location on the body as the purposeful hole on the original silver teapot from Byblos (see above). Perhaps the hole, fitted with a knob or hook, once allowed a lid to be tied to the vessel. The counterfeit teapot from the same site did have a lid, suggesting the likelihood of a cover on the original. Perhaps the clay knob on the ceramic teapot was used for the same purpose (i.e., helping to tie down a cloth around the neck with rope and clay).

The “metallic” nature of the ceramic teapot from Phaistos is made more evident in comparison with another teapot, this one made from faience, that was found in the “Treasury Deposit” at Knossos (see Evans 1928:824–826, figs. 540, 541). This greenish faience teapot is even more similar in profile to the silver examples, except for the addition of two side horizontal handles, which may represent the “assimilation to the arrangement found on the hole-mouthed bridge-spouted vases so common in Crete throughout Crete in the MM Age” (Evans 1928:826, fn. 1), or in other words, the adaptation of the form to local tastes. Instead of flutes around the body, the faience teapot

\textsuperscript{71} In Levi and Carinci 1988, pl. 44e, the tip of the spout is reconstructed as this part of the spout was not recovered. One assumes that enough evidence of the remaining part of the spout existed to allow the conservator of the piece to reconstruct the spout in this manner.

\textsuperscript{72} Raised conical bases only begun to be used in earnest by the end of the period, MM IIB, and into the MM IIIA period and beyond.
had a band of raised circles around the collar of the neck, perhaps representing a repoussé added band. More importantly, this teapot was adorned with two torus rings, one around the neck and one around the base of the body. The ring around the neck was painted a slight lilac color, perhaps an allusion to a silver or copper band.

Two teapots of a similar nature were found with a “crinkled” rim, one from Phaistos (Pernier 1935, pl. XXXIV [54:4]) and one from Knossos (Hogarth and Welch 1901, fig. 24 [54:5]). Both have side horizontal handles and a long narrow spout of the same kind as the other teapots of this group. The “crinkled” rim is likely a derived form of the lobed rim (see 3.II.3 Rims). Perhaps these two teapots, with their added handles and “crinkled” rims were adaptations of this teapot shape.

Date and distribution: The original Byblos teapot was found together with Egyptian artifacts inscribed with the name of Amenemhat III (Montet 1928:155–157, pls. LXXXVIII–LXXXIX), the sixth king of the Twelfth Dynasty, a period contemporary with MM II. The ceramic teapot was found in room 11 of the Southwest Quarter of the Phaistian palace. The excavators have labeled this pot a Fase Ib date (MM II), even though, according to Van de Moortel (2006, table 3), there were two deposits in this room, a MM IB larnax fill and a mixed debris fill, which she calls MM IIB late. Given the MM III(B) date of the faience teapot (Evans 1928:826), it is perhaps more likely that the ceramic teapot should be dated to MM IIB. Perhaps the faience teapot was an heirloom or a vessel purposely made with “archaizing” features. The teapots with “crinkled rim” are not dated any more precisely than MM II (Pernier Fase II).

TP 2. Teapot on pedestal

Description: Teapot with globular body; tall, narrow neck; thin, angled, cut-away spout; two horizontal ribbon handles on opposite sides of the spout; raised, pedestal foot.
**Metal example:** A bronze example of a teapot with a similar—although not exact—shape as the ceramic examples on Crete was found in Anatolia, in the Central Anatolia District of Çorum, dating to the later half of the EB II (Özgüç 1980:472, pl. XI:2 [54:6]). The bronze teapot does not have a pedestal base, has only one strap handle (broken in the middle), but it does have a narrow spout and a long narrow neck. It does provide some idea of what the ceramic teapots may have been imitating.

The “angled” spout (cut-away tip of the spout is bent at approximately 45 degrees from the rest of the spout) on the ceramic examples is a metallic form, of which various examples have been found at sites in the Troad, dating to EB II–III (Bittel 1959, nos. 12–18, figs. 14–20; also Betancourt 1979, fig. 6 [12:3]; also Reeves 2003, cat. nos. 210–216). This spout type is typical for many teapot shapes, one of the strongest indicators of the metallic origins of these types of vessels. The pedestal base is not common in the Middle Minoan period (at least until the end of the period). Its presence on this vessel type, in conjunction with other “metallic” features, also suggests metallic antecedents (Walberg 1987a:37).

**Ceramic examples:** The teapot with long neck and pedestal base is not very common. One example was found at Phaistos (Levi 1976, pl. XVI [54:7]) and another at Malia (van Effenterre and van Effenterre 1963:93, pl. XXXV:8513 [54:8]). The teapot from Phaistos is painted in a series of alternating vertical “bands” of different motifs: a double rows of red dots; a double row of white dots; and a single row of four-petaled white flowers. The base of the spout and the handles are surrounded by orange circles. The decoration is evocative of inlaid bands and pointillé work (4.IV Ornamental Bands). The pedestal base is a different lighter color than the rest of the body, a feature reminiscent of the practice of making the neck of certain rhyta and jugs in a different material or of gilding/covering in silver foil the neck of these same vessels (see 3.II.2 Torus Ring and Separate Necks).
A small projection on the lip of the rim opposite the spout may represent a clay rivet or a hinge attachment for a lid (?).

The Malia teapot is slightly different in profile, but it resembles the Phaistos example. It too is set on a pedestal base, but the spout is wider and longer (Effenterre and van Effenterre 1963:93, pl. XXXV:8513 [54:8]). At the base of one of the handles is a projection that has been described as a “tête d’os” (“head of a bone;” van Effenterre and van Effenterre 1963:93). This is the same type of projection that is seen on wide mouth jug (JUG 4) from Phaistos (Levi 1976, pl. 81e [52:14]). It appears to be a form of cylindrical lug. This “laid on” handle type is thought to be good a indicator of “metalness” (Walberg 1987a:37). Van Effenterre and van Effenterre recognized this teapot shape as metallic, whose general appearance reminded them of “des vases à libations d’origine exotique et probablement métallique dont Evans a reconnu l’apparition comme signe d’écriture (Evans 1909:197, signe 40a, rapproche du qebeh egyptiaen de l’ibrik perse, et connu a Knossos par une aiguière de faience bleue trouvée dans la salle du trône73)” (1963:93–94). Rather than any Egyptian or Persian teapot, the cylindrical lug—which recalls in shape the spool handle—seems to suggest, as does the metallic teapot from Çorum (Özgüc 1980:472, pl. XI:2 [54:6]) that this shape is more common in Anatolia.

Date and Distribution: The teapot with long neck and narrow spout [54:7] from Phaistos has been dated to MM IB (Fase Ia). It was found in the “condotto in room LIX” of the Southwest Quarter of the palace. The teapot from Malia was found in room I of la “maison des morts” in the necropolis at the site (Chrysolakkos). It is likely just as early as the Phaistos example. The jug with similar lug protrusion was found in an MM IB/IIA (Fase Ia/Ib iniziale) context as well.

73 Here, they are referring to the blue faience teapot found in the “Treasury Deposit” at Knossos, here called TP 1 (see above).
TP 3. Teapot with extravagant spouts

*Description*: Teapots that resemble bridge-spouted jars, but do not have the bridge-spout. Each vessel has a unique appearance. The spout is extravagant.

*Ceramic examples*: No bridge-spouted jar or teapot of this shape with exaggerated spout has yet been found. However, the extravagant spout in ceramic is a good indicator of a feature that seems to defy the normal parameters of the material in which it is made, but which is more normal in another medium. In other words, the extravagant spout in metal is feasible due to the rigidity and malleability of the material, but, in ceramic, spouts of this kind actually reduce the structural integrity of the vessel. Thus, there is a good chance that teapots with extravagant spouts are emulating metal prototypes with spouts of this kind.

A number of teapots with exaggerated spouts were found at Phaistos. Each are unique. One teapot seems especially “metallic” in nature (Levi 1976, pl. 32c [54:9]). This teapot has the body of a bridge-spouted jar (globular body, two horizontal side handles), but around the shoulder is a raised notched ridge. The spout is long and extends over the ridge; at the tip, the rim of the spout flares outward into a flat circular platform. The edges of the platform are rolled inward. The platform is incised with shallow grooves. The platform extends into a flat lip. The raised ridge, reminiscent of cut-out petal rims, the flat platform with “rolled” rim, and the incised notches/grooves are features not commonly seen in ceramic, but which would not be unusual in metal.

Another teapot from Phaistos has a spout that resembles a wide, open flower, except that the spout on this teapot seems to have an inner channel running around the edge of the lip (Banti 1939–1940, fig. 8 [54:10]). The spout on this teapot seems to be a cross of the spouts seen on two individual askoi from Phaistos, one with its lobed rim

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74 Levi and Carinci 1988 (pl. 42) calls these vessels “teapots.”
(Levi 1976, pl. 148d, f; see ASK [35:1]), and the other with its lipped rim (Levi 1976, pl. 148b [35:3]). Both askoi are of a “teapot” shape, only differing from teapots in that they are closed at the top. Since these askoi are related to teapots in shape (and perhaps function), and since both types of vessels have similar-looking spouts, perhaps these vessel types (the askoi and the teapots) share common metal prototypes. Besides the spout, this particular teapot is also decorated in a “metallic” manner. Around the shoulder and mid-body are incised lines arrayed in a chevron pattern. The chevrons run sideways around the shoulder and up-down on the lower part of the body. The incised chevrons are reminiscent of the repoussé chevron pattern on the shoulder of a bridge-spouted jar from Phaistos (Levi 1976, pl. XXXIIIId [25:13]), which in turn is reminiscent of row of double fluting on the added metal band on a later bronze ewer from Sellopoulo, if the row of flutes mirrored each other in a chevron pattern (Matthäus 1980, pl. 33:282 [25:1]). Therefore, perhaps the incised chevrons on this teapot is emulating an added band. On the other hand, the incised chevrons may also be imitating chasing done to the surface of the vessel. It is difficult to differentiate at the moment.

The final teapot with extravagant spout from Phaistos is a teapot with a large, funnel-like spout with in-turned edge and lip (Levi 1957–1958, fig. 151a [54:11]; also Levi 1976, pl. 32a–b). The body of this teapot is carinated at mid-body, and the two horizontal handles extend far from the body. The handles look “laid-on” (see Levi 1976, pl. 32b), a trait that is typical of some metallic handles (Walberg 1987a:37). Around the upper body of the vessel, thin lines of applied clay are added to the surface of the vessel. These lines, slightly slanting to the right, are surrounded by an oval of dark paint, the whole set against a thick, creamy white background. It is not clear whether these applied features are meant to evoke metallic features, but the effect is one of “slits” in the vessel or, alternatively, of repoussé features amidst a gilded background. The flat, in-turned rims of the vessel and the spout are evocative a finished, hammered metallic rim.
The angular body of this teapot recalls the body shape of a number of other teapots (e.g., Levi 1976, pls. 29b, 29d, 28k) and a bridge-spouted jar with angular shoulders (Levi 1976, pl. 28k). These teapots do not have extravagant spouts, but the “metallic” spouts, handles, body shape, and decoration (see e.g., painted flutes on base of Levi 1976, pl. 29b, or impressed semi-circles on shoulder of Levi 1976, pl. 28k) do hint at the suggestion that these vessels may have shared common metallic prototypes with this teapot.

Date and Distribution: The date of the teapots with extravagant spouts all fall to within MM IIA (Fase Ib iniziale or Fase Ia/Ib iniziale). The teapot with flat rim was found in the southern area of the palace (Saggi Sud); the teapot with incised shoulder was recovered at Haghia Triada (?); and the teapot with appliqués was found in “Bastione II.” The teapots with angular bodies (but not extravagant spouts) from Phaistos are also dated to the same period—to MM IB (Fase Ia) or MM IIA early (Fase Ia/Ib iniziale). The find contexts vary from secondary contexts (“Grande Frana”), palatial contexts (room IL, “Bastione II”), and the settlement site of Haghia Fotini.

5.XV TUMBLERS (TMB)

Tumblers are a type of conical cup with no handles. They are differentiated from the more rounded goblets (“egg-cups”) by the lack of a flaring base (see Betancourt 1985:74, fig. 48, compare the “tumbler” and “egg-cup” side by side) and can be distinguished from the more generic conical cup—which began its life in the EM II period (Betancourt 1985:36, fig. 17 “conical cup”)—by its general tapering profile, relative tallness, and fineness (at least after MM IB when it was made on the wheel) (Betancourt 1985:75). In the MM period, MacGillivray has identified four types of tumblers, two that are handmade (1998, fig. 2.9 types 1–2) and two that are wheelmade (1998, fig. 2.9 types 3–4) (also Walberg 1987a:147–148, form 39 cylindrical handleless cup). The handmade
versions seem to be a continuation of the EM III and MM IA footless goblet at Knossos (Momigliano 1991:248, no. 288), and are, thus, not included here. The wheelmade examples range in height from ca. 3–7 cm and 11–12 cm and the diameter at the rim ranges from ca. 5–6 cm and ca. 11 cm, depending on the size.

Metal examples: Metal conical cups have been found, beginning in the Early Bronze Age, (e.g., tall vertically-fluted tumblers from Ur: Zettler and Horne 1998, fig. 105 [gold]; 1998, fig. 106 [silver]; fig. 114 left [plain]). Middle Bronze Age examples are known from Anatolia—e.g., gold tumbler from Kültepe (Toker 1992, fig. 44 [54:12])—and from Tôd in Egypt as well. A short silver fluted conical cup (Bisson de la Roque 1950, pl. XCI: 70606 [14:5]) and a taller silver fluted tumbler (Bisson de la Roque 1950, pl. XVI:70618 [54:13]) were found at this latter site. The conical cup/tumbler is a relatively simple shape, however, and it is likely that many regions produced their own versions.

Among the finer wheelmade tumblers from Knossos and Phaistos, it seems that the decoration on these vessels are divided on the main between tumblers that are painted to resemble stone motifs and those that may be imitating metal designs. The use of stone motifs is comparable to the surface treatment of certain fine ceramic goblets/pedestaled chalices, which also imitate stone patterns. It is possible that the use of stone motifs on tumblers, goblets, and chalices is an “archaizing” feature on these types of vessels (see more under 6.III.2 Function of Metal Vessels). The metal techniques seemingly being imitated on tumblers are fluting (vertical and torsional) and added bands and/or inlay.

TMB 1. Rounded tumbler with fluting

Description: Conical tumbler with flat base and painted designs set to resemble fluting.

Ceramic examples: One tumbler from Phaistos (Levi 1976, pl. XIIf [54:14]) seems to be an imitation of a metal tumbler similar to the one from Tôd (Bisson de la Roque 1950, pl.
XVI:70618 [54:13]). The torsional flutes of the metal tumbler are rendered in paint on the ceramic example by long torsional designs painted in red and orange. Below the rim, a white arcade pattern copies the rounded ends of the metal flutes (as also seen, for example, on the semi-globular cups with arcades, 4.1.2 Arcades and SG CUP 2). To emphasize the three-dimensional nature of the decoration, the red and orange painted “flutes” are surrounded by a thin line of applied clay. The applied clay makes it appear if the painted decoration is in recess. The red and orange decoration on the ceramic tumbler may be an allusion to a copper tumbler, even though the examples found at Tôd were made from silver plate.

On a set of tumbler fragments from Knossos, the painted decoration alludes to vertical fluting (MacGillivray 1998, pl. 105:633–635 [54:15–17]). The “fluting” is evoked by thick white vertical lines set against a dark background, a motif seen on other vessels as well (e.g., Carinated cups with fluting CS CUP 2; Semi-Globular cup with fluting, SG CUP 2; and bridge-spouted jars with vertical fluting, BSJ 3). Although only tumblers with torsional fluting were recovered from Tôd, it is possible that tumblers with vertical fluting also existed.

**Date and Distribution:** The tumbler with painted torsional flutes from Phaistos [54:14] is dated to MM IB (Fase Ia). It was found in the lower level of room LXV in the Southwest Quarter of the palace. If this tumbler was an imitation of the type of silver cup found at Tôd, perhaps this may help to narrow down the date when silver vessels of the sort found at Tôd arrived in Crete. The tumblers from Knossos with vertical lines are from the southwest room of the “Royal Pottery Stores” and are, too, dated to within MM IB–MM IIA (pl. 105:633–635 [54:15–17]).

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75 The illustration and catalog entry for MacGillivray 1998:152, pl. 105:635 shows a handle belonging to this “tumbler.” The handle is short and high. The shape may be related to a type of “tasses tronconique” from Malia (Poursat and Knappett 2005:144, pl. 29:972–973), which appears to be a cross between a tumbler and a straight-sided cup. It is said that this type of cup is always made from a fine fabric.
TMB 2. Tumblers with added bands or inlay work

Description: Conical tumbler with flat base and painted designs made to resemble added bands and/or inlay work.

Ceramic examples: As described elsewhere (see 4.IV Ornamental Bands, especially 4.IV.4 Bands with Foliate Designs), added bands in metal are strips of metal that may have been applied to metal vessels to reinforce as well as decorate that vessel. At times, these strips may have been inlaid with simple, often, geometrical designs (circles, semi-circles, triangles) or simple cut-outs. The bands, usually painted orange, may have represented copper strips, and the cut-outs may have been gold (as seen on the later inlaid goblets and cups form Mycenae; see under 4.VII Inlay and Enameling). Small rivets may have been used to attach the bands or cut-outs (e.g., Xenaki-Sakkellariou and Chatziou 1989:11) or, perhaps, small copper strips were laid overttop the cut-outs to prevent them from falling out. One tumbler from Phaistos is a good example of an “early foliate band” (see Evans 1921:269–270, fig. 200 [26:8–10]), which may have been “flower chains cut out of gold foil” (Evans 1921:269). Thick red bands with a criss-cross pattern divide each band of triangles, and a thin orange band runs through the triangles (Pernier 1935, pl. XXIic [54:18]). This design recalls the “linked dots” on some straight-sided cups and bridge-spouted jars, which has been interpreted here as a thin copper wire running over the circle cut-outs (see 4.IV.1 Bands with Dots). If this represents a metal example, it may be a imitation. In addition to this vessel with linked triangles, another tumbler from Phaistos was also decorated in vertical bands. This tumbler features a simple repetition of red and white lozenge shapes over alternating white and dark horizontal bands (Levi 1976, pl. LV1b). If this tumbler were emulating metal techniques, the lozenges and bands may perhaps represent inlaid or ornamental bands.

More common among tumblers is decoration that evokes the inlaying of vertical bands. For example, one tumbler from Phaistos (Levi 1976, pl. LV1a [54:20]) has a large
vertical orange band superimposed by linked red dots. Beside the band are simple foliate designs that recall the triangles on the tumbler with horizontal triangles (see above). The red dots on the orange band may be representing rivets or circle cut-outs. Another possible tumbler also has a vertical “foliate design” (MacGillivray 1998, pls. 7:230 and 57:230 [54:19]). It was classified as a straight-sided cup, but it was not found with a handle. Given the vertical decoration on the vessel, not usual for straight-sided cups, it is more likely this vessel was a tumbler. The “foliate band” also has a series of red dots down the middle, again, a possible reference to rivets. All of the tumblers mentioned here with foliate designs were found in MM IB or MM II contexts. One tall tumbler was found in a later context, in the “West Polychrome Deposits” dating to MM IIB–IIIA. It is also decorated in vertical motifs: alternating bands of pendant semi-circles, small white dots, and orange bands with white dots (MacGillivray 1998, pl. 72:308). Again, these may be depicting inlaid bands. Although this tumbler was found in a later context, the shape of the tumbler is more “firmly [placed] in the MM IB period.” (MacGillivray 1998:69, Type 4 tumbler).

Finally, two tumblers from Knossos (Mackenzie 1903:177, pl. VI:1 [54:21]; also MacGillivray 1998, pl. 107:650 and p. 160, no. 807 ) were apparently decorated in the same way (were these duplicates of the same prototype?). The cup is divided into squares by thick white lines. Within each square is an orange dot (circled in red), from which five or six white crosses extend outward. The base of the vessel has radiating white lines around a red dot. The design of the dot and crosses (one may say a rosette of a sort) is unusual in that the motif is contained within a frame. This technique is connotatively similar to setting a design within a medallion (see 4.VII Inlay and Enameling), and one wonders whether the stiff, repetitive designs of white crosses and red dots were not an early attempt (MM IB–MM IIA) at enameling.
Date and Distribution: With the exception of the tumbler found in a later context (MM IIB–IIIA) from Knossos, all the fine tumblers mentioned here with decoration that may be representing added metal bands or inlay fall within the MM IB (Fase Ia) to MM IIA (Fase Ib iniziale) range or in MM II. The tumbler with triangular bands (Pernier 1935, pl. XXIc [54:18]) was found in the Northwest Quarter of the palace; the tumbler with horizontal bands and diamond motifs (Levi 1976, pl. LV Ib) was found in the bench of room IL in the Southwest Quarter of the palace; and the tumbler with vertical foliate band (Levi 1976, pl. LV Ia [54:20]) was recovered from Piazzale I.

The tumbler with cross designs from Knossos was found in the southwest room of the “Royal Pottery Stores.” The inlay designs on these (mainly) MM IB tumblers provides evidence for the use of simple and geometric cut-out motifs in this early period of experimentation with inlay work.

Vessel shapes are a good indication of “metalness” when the shape of the vessel is paired with structural details and decorative surface treatments. Shapes are often subject to modification over time during due to the repeated replication process. Therefore, the best vessels for recognizing “metallic” shapes are often the earliest. The earliest are often those that will be the “sharpest” in profile, and those that will display “metallic” structural details or decorative surfaces that are most alike the original (see more under sections 6.I.1, 6.I.2). As vessel shape is often conditional upon cultural preferences, the “sudden” appearance of a novel vessel shape in a local context is a good indication of the emulation of a foreign vessel imported from elsewhere. The analysis of the origins of the “metallic” shapes among the Middle Minoan ceramic assemblages of Phaistos and Knossos is discussion under section 6.II Origins of Shapes.
CHAPTER 6
MINOAN SOCIETY

The lack of metal vessels in the archaeological assemblage of Middle Minoan Crete represents a serious loss of knowledge about an important aspect of the socio-economic life of the ancient Minoans. This study offers a novel approach to the “recovery” of these lost metals through the analysis of their ceramic skeuomorphs. Since this is one of the first comprehensive study in Aegean studies to use skeuomorphs to elicit information about the appearance, function, and origins of “lost” metal vessels from Middle Minoan Crete, it was first necessary to properly understand the nature and roles of these imitative objects. In Chapter 2, a novel theoretical approach to skeuomorphs was proposed, one which was able to explain some of the idiosyncrasies of these objects, take into account some of the varying interpretations of these objects in the archaeological literature, and justify some of the differences in appearance among individual skeuomorphs in a large assemblage of such objects. Building on this interpretation of the material, a number of techniques were offered to help identify skeuomorphs in the archaeological record. In the subsequent three chapters, these techniques were applied to the Middle Minoan ceramic assemblages of Knossos and Phaistos in order to draw out some of the “metallic” forms among these assemblages. The attributes that were thought to best encapsulate a ceramic vessel’s “metallic” qualities were its shape, decorative surface treatment, and “metallic” structural details. Given the exploratory nature of this study into the nature of skeuomorphs, each of these attributes (details, decor, shape) was individually treated in its own chapter not only as a means of managing a large corpus of material, but also as a way to ascertain the level of information that might be gathered from the analysis of each of these “metallic” features. The present chapter, then, while also serving as a means of summarizing the data gathered from Chapters 3–5, is divided into sections that explore
the contributions each individual “metallic” attribute may offer to the understanding of metal vessels and Minoan society. As each trait was the result of different underlying processes, each of the sections is different in its scope and subject. Thus, section 6.I, which summarizes the distribution of the various structural details and decorative surface treatments on vessel types over time in order to reach conclusions about the appearance of metal vessels (among other things), deals with very different matters than sections 6.II and 6.III, which uses ceramic vessel shapes to reach conclusions about the origins of Minoan metal vessel prototypes and the function of past metal vessels and their skeuomorphs in Minoan society. By approaching the material in this manner, it was possible to discern some of the possibilities and limitations of skeuomorphs in revealing the character and purpose of past metal vessel assemblages. These observations are discussed in section 6.IV by comparing the proposed model as proposed in Chapter 2 with the data obtained from the Middle Minoan “metallic” assemblages of Knossos and Phaistos.

6.1 DISTRIBUTION OF “METALLIC” FEATURES

An overview of the “metallic” shapes identified from the Middle Minoan ceramic remains from Knossos and Phaistos reveals that not every skeuomorph exhibited the same “metallic” attributes, nor was every “metallic” trait expressed in the same manner or appeared on the same vessel types at the same time. This suggests that various factors were at play in the potter’s decision to emulate certain metal vessels and in his decision to express his choices in ceramic. While it is unlikely that the archaeologist will ever know all the underlying factors that led to all the potter’s decisions, the analysis of the synchronic and diachronic distribution of the “metallic” features on pottery types should, at least, provide clues to some of the factors influencing the patterns visible within the archaeological material. Only by knowing which details were emulated as well as the
underlying reasons for this emulation, can one really begin to see the possibilities and limitations in using skeuomorphic material to discuss past metal vessel assemblages.

6.1.1 SUMMARY OF STRUCTURAL FEATURES

In Chapter 3, many of the apparent Middle Minoan ceramic types from Knossos and Phaistos with “metallic” structural features were discussed. Structural features were defined as any clay feature that may be symbolic in its own medium, but which alludes to the manufacturing techniques of metal vessels, an attribute that may actually diminish the structural integrity of a ceramic vessel, or a trait that is imitating one that is particular to metal vessels due to the property of metal to retain its shape. A cursory summary of the data from this chapter reveals that a relatively low number of ceramic vessels in the overall corpus of Phaistos and Knossos pottery had these structural details, but that, at the same time, a relatively high number of unique pottery types in this study did. To quickly assess this distribution in tabular form, please see Tables 2 and 3 for a chronological summary of structural details by type and by attribute.

The analysis of the distribution of structural details reveal that the majority of these features seem to be good indicators of “metalness.” As opposed to some painted decorative motifs that become integrated into the ceramic repertoire and that may then be applied, in the derivative stage of emulation, to all manner of shapes, structural features do not appear to “migrate” to other shapes. Occasionally, painted decoration may replace three-dimensional structural features (such as, for example, painted cut-out rims), but this painted emulation only occurs on the same object type that displayed the original structural detail. In addition, it seems that ceramic vessels with these structural details also tend to frequently feature “metallic” surface treatments, indicating that the two treatments—structural details and surface decoration—go hand in hand. As the most “metallic” surface treatments tend to occur on the earliest examples of any particular
vessel type (see below), and, as the structural features appear on the most “metallic” of vessels, this suggests that the first ceramic copies (with structural details) were modeled on actual metal vessels prototypes—i.e., that the metal vessels were on hand for the potter to see and emulate.

Potentially the earliest vessel types within their own type group, vessels with structural details allow for some speculation about the introduction of various metal vessel groups to Crete (see Table 3). In general, vessels with structural features tend to appear either in the first half of the Middle Minoan period (MM IB or MM IIA) or in contexts dating to the end of the period (MM IIB–MM IIIA). Structural features usually occur on a limited number of vessels within their type group. These features occur at the first appearance of the type and, usually, disappear soon thereafter. The exception are those shapes (RHY, JUG 1), of which the majority of the examples within the group type “retain” the torus ring from the time of their appearance onwards. This trend appears to have been a feature of certain vessels used in cultic contexts (see 6.III.2 Function of Metal Vessels).

The kinds of structural details that occur on vessels dating to the earlier half of the Middle Minoan period (MM IB to MM IIA) include clay rivets, all manner of “metallic” handles, such as loop handles, horizontal handles rising above the rim, and “laid-on” handles (see Table 3). It is also likely that up-swung handles appeared just as early. Ribbon handles occur throughout the period and are, thus, not very chronologically sensitive. Other features that are just as early are extravagant spouts, thin walls, and lobed rims. The lobed rim is a feature that was likely introduced along with the kantharos shape as early as MM IB. The other cups and carinated forms with lobed rims might have been influenced by the kantharos shape. The clay rivets, thin walls, and “metallic” handles appear on novel shapes, previously unknown on Crete (piriform rhyta, jugs with wide mouths, semi-globular cups, demitasses), which are shapes that may have been
influenced by imports from elsewhere (see 6.II Origins of Shapes). Extravagant spouts were known in the EM period, but the types of spouts displayed on the MM examples are different from those earlier examples. The introduction of these shapes at the beginning of the MM period also suggests that the metal vessels on which they were modeled may also have been imported into Crete at this time (for more on origins of the vessel types, see 6.II Origins of Shapes). The exception to this rule are some bridge-spouted jars that were found with clay rivets. As the bridge-spouted jar is a likely local shape that was developed out of earlier EM teapot and jar shapes, the introduction of the clay rivet in the MM suggests that this may have been an iconic “clay shape” that was rendered in metal in the MM period. The bridge-spouted jars with clay rivets, however, also date to MM IB–IIA and MM II, perhaps suggesting a new tradition for the bridge-spouted jar at this time.

At the end of MM IIB into MM IIIA, a whole new set of ceramic types appear with different structural feature types. These features include cylindrical lug handles, spool handles, mid-ribs, cut-out rims and bases, and “stand” bases. The torus ring (around the neck and base) also makes its appearance sometime in MM II. With the exception of cylindrical lug handles, which seem to disappear in MM IIIA, all of these “late” features continue into the Late Minoan period. With the exception of the cylindrical lug handle and the spool handle, which seem to be features that appeared on imported vessels and later grafted to local ceramic shapes, the other “late” structural features seem to be local developments in metalwork. The cut-out rims and bases all appear on a set of vessels (rhyta, basins, stands, cylindrical jars) that were probably used together in ritual contexts (see more 6.III.1 Ceramic Vessel Sets) and which were probably locally made. Mid-ribs and “stand bases,” too, are features that likely grew out of local traditions.

Thus, the chronological distribution of the structural features seems to suggest two distinct periods when new metal types (with their own particular structural features)
were introduced during the Middle Minoan period—during MM IB/MM IIA and also during MM IIB/MM IIIA. These dates roughly correspond to the initial construction of the Middle Minoan palaces (at Knossos and Phaistos) and to the rebuilding of these palaces after a large earthquake in MM IIB. Perhaps we may speculate that, at the beginning of the Middle Minoan, some metal vessels were imported to Crete in order to stock the palaces that were newly rebuilt. Towards the end of the period, new shapes were developed. It is difficult to judge whether the bulk of the new types were imported/made in MM IIB before the earthquake—in which case it was just time to replace the old metal vessels—or after the earthquake—whereby the novel metallic forms could have been made in order to replace the damaged older ones.

6.1.2 SUMMARY OF DECORATIVE SURFACE TREATMENTS

One way to emulate a metal vessel is the capture the “look” of the object. While the silhouette of the vessel may be conveyed through shape or structural features, it is the decorative surface treatment that imparts the final overall impression of “metalness” to any ceramic vessel. In Chapter 4, all the “metallic” decorative surface treatments that could be discerned on pottery were discussed. In metal, decorative techniques usually fall into two types: those that involve shaping the metal for effect (e.g., gadrooning, fluting, repoussé, hammering, incising, chasing) or those used to contrast the natural color of the metal with other substances (patination, adding niello, inlaying, enameling, and gilding or silver plating). In ceramic, these techniques may be rendered in a number of ways: either through approximating the effect of metal decoration in three-dimensionsions (i.e., shaping the clay surface in some manner, such as, for example, in modeling, stamping, or incising) and/or translating the metallic surface treatment through painted motifs and slips. An analysis of the painted decoration of many pottery forms revealed that it was not replicating the actual color of the metal that seemed to be of prime importance in imitating metal vessels, but of capturing the effect of light and shadow produced by the
metal decorative motifs through the contrast of dark and light paints and slips. Once the
decoration on pottery is visualized in this manner, it is possible to recognize the imitation
of certain “metallic” decorative techniques, and, hence, of reconstructing the appearance
of certain metal prototypes. The following section summarizes the distribution of surface
treatments. For a chronological summary of these treatments by type and by technique,
see Tables 2 and 4.

The Minoans seemed to have enjoyed metal vessels with many different
decorative flourishes. Many of the techniques appear to have begun either in MM IB or in
MM IIA. Fluting and chasing seem to have been the earliest decorative techniques used
on metal vessels. These seem to have been the two main techniques on extant examples
of decorated metal vessels from Anatolia, the Near East, and the Cyclades dating to the
Early Bronze Age and early Middle Bronze Age (Davis 1977; Reeves 2003). It is
possible, therefore, that fluting and chasing were introduced to Crete from one of these
regions at the start of the Middle Minoan period (see also 6.II Origins of Shapes).
Gadrooning, which could be considered the “reverse” technique to fluting, in the sense
that the “flutes” were pushed out from the inside rather than inward from the outside,
seem to have been practiced as early as fluting and chasing on Crete, if the ceramic
skeumorphs are any indication. In the Tôd Treasure, gadrooning only seems to have been
an incipient technique (see 4.II Gadrooning and 6.II.2 Origins of Shapes. El-Tôd in Egypt
for more on this context), but metal vessels with gadrooning from Anatolia indicate that
this technique was already practiced in this region. It is not clear then if vessels with
gadrooning were imported into Crete or if the technique was developed on Crete. What
seems probable, however, was that repoussé was a local development. Perhaps repoussé
began as a process of experimentation with the same dies that were used for chasing
(stamping into metal or clay), but used in “reverse,” that is to say, instead of impressing/
stamping metal and ceramic vessels from the outside surface of the vessel, the dies were
used to impress the clay from the inside. Even if this were not the case, it is still thought that some of the dies used on some ceramic wares were the same—or imitate—the ones used on some metal vessels with repoussé work (Evans 1921:242; MacGillivray 1998:57). This would suggest that at least some metal vessels with repoussé work were made on Crete and not imported from abroad. From the ceramic imitations, it appears that repoussé work overtook fluting, chasing, and gadrooning in popularity on Crete, at least by MM IIB. Certainly, by the end of the Middle Minoan period and into the Late Minoan period, the Minoans had mastered repoussé work and had become very proficient at the technique.

While the impetus for fluting and chasing may have originally come from foreign connections, it appears that the Minoans were already experimenting with their own metal decorative techniques at the beginning of the Middle Minoan period. Both inlay work and the addition of ornamental bands seem to have been local innovations. The two techniques may have begun at the same time, with inlay work on the body of the metal vessel perhaps a developmental off-shoot of the process of inlaying ornamental bands. This process seems to have begun at least by MM IB—again if ceramic skeuomorphs are any guide—although inlaying objects in other materials may have begun earlier, in MM IA.\footnote{See for example, the “Vat Deposit” at Knossos, dated to MM IA with pieces of inlay thought to be part of a game board (Evans 1921:169–170, fig. 120; see 4.VII Inlay and Enameling).} Enamel work may have began as an outgrowth of inlay work, perhaps as an experimentation with faience and frit-like materials during the inlaying process. If the Minoans were indeed using enameling agents on metal vessels, this process may have begun by at least MM IIA. By the LM period, this experimentation with “enamels” may have led to the invention of proper niello.

Thus, in terms of re-constructing the appearance of metal vessels used at Knossos and Phaistos during the Middle Minoan period, the analysis of the decorative surface
treatments of the ceramic assemblages at these sites has proved very fruitful. However, unlike ceramic structural details that emulate “metallic” features—which do not “migrate” from shape to shape and seem to occur on the earliest vessels within any vessel type—some decorative surface treatments were more useful than others in terms of reconstructing the appearance of “lost” metal vessels. In general, vessels with three-dimensional (or “plastic”) decoration were the most useful due to the fact that they tended to occur in contexts that were earlier than, or just as early as, the first painted copies of presumed metal prototypes. This general trend can be observed in Table 4. In this table, the vessels with three-dimensional techniques that were found in contexts belonging to a certain time period were marked by a large “X.” Painted vessels were marked with a small “x.” The large Xs indicating three-dimensional decoration indicate that “plastic” vessels occur in the earliest time period for each decorative technique. The pattern (for “plastic” vessels to show as the earliest on the table) is somewhat obscured for two reasons. One, a large number of vessels were dated to the indistinct MM II context (*Fase* Ib usually). According to the excavators of Phaistos, however, “*Fase* Ib substantially corresponds to the entire MM II period” (Carinci and La Rosa 2007:117). Thus, the pottery dated to this phase, in theory, could stylistically fall within MM IIA or MM IIB. Therefore, if one reasonably assigns the MM II ceramics to MM IIA for those with decorative motifs more soundly dated to MM IB and MM IIA and to MM IIB those more soundly dated to MM IIB–IIIA contexts, this would resolve some of the chronological obscurities within the table. The second reason that the pattern within the table is obscured is due to the fact that more than one vessel type is represented within each decoration category. Thus, for example, the large Xs on the table for vertical fluting obscures the fact that vertical fluting on semi-globular cups begins in MM IB and predates the painted examples (MM II), whereas the example of a bridge-spouted jar with three-dimensional vertical fluting was only recorded for MM II. Thus, the large Xs in MM IB and MM II obscure the fact that the earliest examples of ceramic vessels with
three-dimensional decoration were the earliest within their own class. See, for example, Table 8, Example 1 that shows the derivation over time of the gadrooning technique on one class of vessel, the semi-globular cup.

In summary, while the clarity of the distribution of decorative surface treatments seen on Table 4 would be improved by a greater chronological finesse of the pottery, the general trend seems to hold that the earliest skeuomorphs in the assemblage are those vessels with three-dimensional decoration, regardless of the “metallic” technique the potter was emulating. It also happens that these vessels with “plastic” decoration are the most accurate vis à vis extant metal vessels. It also happens that the painted vessels with the “sharpest” profiles, the most frequent clay structural features, and the most “commonsensical” details with regards to real metal vessels are also some of the earliest within their own class. What this suggests is that the “most accurate” skeuomorphs are also the earliest, and, hence, presumably the ones with the closest chronological relationship to the presumed prototype. In terms of the model proposed in Chapter 2, the vessels with three-dimensional decoration and those with “accurate” painted motifs would be considered imitations or close adaptations. Further discussion of these types of skeuomorphs, as well as derivations, can be found under 6.IV Evaluation of the Model.

6.II ORIGIN OF SHAPES

In addition to “metallic” structural features and decorative surface treatments resembling metallic decorative techniques, another way of identifying ceramic imitations of metal vessels is by their shape. “Metallic” shapes were recognized by comparisons with extant metal examples from different regions as well as by a consideration of the surface treatment and structural features of a vessel. Thus, even if no metal parallels of a

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2 There are exceptions, but these are few and can generally be explained by contextual circumstances.
particular ceramic vessel could be found, the presence of a clay rivet or of a striking “metallic” surface treatment on that vessel, for example, allowed that vessel shape to be considered “metallic.”

In order to prevent surface treatments—which, in their derivative forms can be “mixed and matched” with other motifs—to unduly influence the decision to label any vessel shape as “metallic,” the earliest manifestation of a vessel shape was sought. As was discussed in the previous sections (6.I.1 and 6.I.2, see also Tables 2, 3, and 4), there appears to be a strong correlation between the first appearance of a vessel shape/type and the presence of three-dimensional features on that vessel—either structural details (rivets, lobed rims, spool handles) or “plastic” surface treatments (fluting, gadrooning, repoussé work). In other words, there is a tendency for the earliest vessels of any type to be the ones with the most “metallic” appearance. By tracing back a type to its first appearance, then, one is, in effect, most likely to find the imitations that most resemble their metallic antecedents.

Attempting to reconstruct the original appearance of a metal vessel through its (earliest) ceramic skeuomorph can prove useful in a number of different ways. As was demonstrated, the earliest “metallic” skeuomorphs have shown their potential in discerning some of the decorative surface treatments of metal vessels and, to some extent, the method of these vessels’ construction through their ceramic structural details (see section 6.I.1 above). Reconstructing the appearance and shape (form, structural details, decorative techniques) of metal vessels, then, can additionally provide useful information about the origins of the original metal prototypes—whether the metal vessels were imported from abroad or manufactured locally. Knowing which ceramic shapes were inspired by foreign imports and which were likely to have been produced locally may ultimately provide information about the trade in metals between Crete and other regions and increase the knowledge about local workshops. The following section, then, attempts
to identify “foreign” and “local” shapes. In this case, “foreign” traits and shapes are identified here as features that appear “suddenly” (i.e., without local precedent in the archaeological record) on Crete and that can be shown to be more common in another region or have a longer history in that region. Those features that can not be shown to have foreign connections are assumed to be local innovations, but they should also show a progression in their development on Crete as well.

Once the earliest ceramic imitations for each vessel type was ascertained from among the MM assemblage at Knossos and Phaistos, every effort was made to find metal vessel parallels for each type. Those metal parallels that could be found were presented in Chapter 5 (under each major vessel type), and information concerning these parallels were compiled in Table 5.

For the period encompassing the Middle Minoan period on Crete, the metal parallels for the ceramic imitations were mainly found at sites in Anatolia, the site of Tôd in Egypt, and in the Shaft Graves at Mycenae. The apparent lack of parallels in other regions may reside in the poor preservation of metal vessels in these regions for this period or it may indicate that Crete did not import or export metal vessels from these regions at this time.

As most metal parallels for the ceramic vessels on Crete were found in three general locations (Anatolia, Egypt, and Mycenae), it pays to delve a little further into the metal finds found in each region and to understand the relationship between the ceramic skeuomorphs on Crete and these findspots. The following section discusses each context in question, specifically emphasizing the reasons, if applicable, a type can be considered foreign or local, the types of vessels that may have originated in each location, and the possible explanations as to how metal vessels from these locations may have appeared on Crete. In the discussion concerning the Shaft Graves, the metal vessels types found in
these graves are compared to their homologous Minoan ceramic skeuomorphs in an exercise of comparative chronology.

6.II.1 ANATOLIA AND THE NEAR EAST

A fair number of metallic parallels from Anatolian sites were found for the ceramic skeuomorphs on Crete, and another percentage of ceramic vessels from Crete had “foreign” attributes that seemed more at home in Anatolia. The identification of “Anatolian-inspired” pottery forms was achieved through comparison with metal shapes found in Anatolia as well as noting those “foreign” traits in the Cretan pottery assemblage that appear without local precedent on Crete. Reeves’ (2003) work has proved most useful to this study in allowing for the comparison of metal vessels from Anatolia and certain Cretan ceramic types. In her very useful analysis of the social roles of metal vessels (and, to a certain extent, skeuomorphs) from Anatolia and the Aegean over the course of the Bronze Age, Reeves (2003) has, along the way, found and classified many of the metal vessels that have been published in these two regions.\(^3\) This has allowed for comparisons between the ceramic imitations on Crete and the extant metal vessels from Anatolia.

According to the list compiled in Table 5 and Chapter 5, the vessel types that may have some affinity with vessels from Anatolia include two bowl types (BWL 1, BWL 3), small, medium, and tall carinated cups (CS CUP, CM CUP, CT CUP), kantharoi (KTH), some rounded cups (RD CUP 2–4), rounded goblets (GBT 1, GBT 2), and, possibly, a bowl type (BWL 5), some jars (JAR 4), jugs (JUG 4), teapots (TP 2) and figural rhyta

\(^3\) Although sections of Reeves’ work have identified some of the ceramic skeuomorphs of metal vessels found in Crete and Anatolia, the nature of her study was very different from the study presented here. Her stated purpose was not the “study of the different manifestations of metal skeuomorphs during the BA of these regions [as this] would be the subject of a separate thesis” (2003:204).
(RHY 1–2). All of these vessels, except for the rhyta, represent fine tablewares used for drinking, mixing, and pouring beverages.

Of these shapes, some of them are more securely tied to Anatolia than others. One of these is the kantharos. While no metal example of a kantharos has been found in Anatolia, enough examples of ceramic kantharoi have been found at sites in central Anatolia to indicate that the shape was originally conceived in this region. Lobed ceramic kantharoi have been excavated, for example, at Alişar (Schmidt 1932:112, fig. 126, col. pl. II b1670, pl. XI b1676), Kültepe (Özgüç 1950:186; 1953:171, pl. 31, figs. 196–198; 1955:64–72), Alaca Höyük (Koşay 1951, pl. 26 A1a, 170), Boğazköy (Bittel 1933:30–31, fig. 13; Fischer 1963, 70, pl. 121 nos. 1068–1070).

The shape of kantharoi of different sizes may have inspired other carinated cup shapes on Crete, such as CM CUP 2, CT CUP 2, and if the lobe feature was borrowed from the kantharos, then, even other vessel shapes may have benefitted from inspiration from the this vessel type as well (e.g., DT CUP 4, BWL 5).

Less iconic than the kantharos shape are other vessel types that may have had their origins in Anatolia, but are less well-known. This applies to a deep bowl type with two vertical handles (BWL 3), a bowl with cylindrical lugs (BWL 1), a rounded cup type with spool handle (RD CUP 5), and a rounded, globular cup (RD CUP 2). The deep bowl with vertical handles is a new shape that appears in MM II contexts (Fase Ib) at Phaistos. Clay rivets at the join between the handles and the rim on one example from Phaistos (Levi 1976, pl. 120a [37:13]) suggest a metallic origin. No exact metal parallels have been found for these bowls, but deep bowls with rounded bodies and slightly flaring rims, as well as deep, globular cauldrons with the same ceramic shape have been found at Phaistos.

It is possible that bowls of this type were found at Knossos, but that the sherds were thrown away by Evans and MacKenzie or that they were not found in sufficient numbers to publish and illustrate.
Kültepe in Anatolia (Emre 2008, figs. 3, 4; Özgüç 1986:69, pl. 127:1, fig. 58, respectively). At the same time, the deep bowl of this kind is not a shape that appears among the bronze vessels on Crete or the mainland (see Matthaüs 1980). Furthermore, this bowl is the only ceramic bowl shape with two vertical handles. The Minoans seem to prefer one vertical handle (for cups) and two horizontal handles for other vessel shapes, including bowls. The vertical handles on the deep bowl may, perhaps, be an adaptation of high loop handles, as seen on metallic kantharoi-type bowls. The sudden appearance of the bowl and the presence of “metallic” and “foreign” features suggests that, perhaps, this vessel type was imported.

Plain gold and silver rounded cups with round bottoms and hemispherical bodies (RD CUP 2) have been found at Alaca Höyük in Anatolia, for example, dating to the second half of the third millennium (Toker 1992, figs. 16–18). Examples of simple hemispherical bowls have also been found at Acemhöyük (Reeves 2003, cat. no. 285) and Kültepe (Özgüç and Özgüç 1953, nos. 456, 457) in MBA contexts. The shape is a simple one that also appears in silver at Tôd in the MBA as well (Bisson de la Roque 1950, pl. XII:70581, pl. XIII:70584, 70585, 70586). Given the simplicity of the shape, it is possible that the Minoans fashioned similarly simple metal cups, but, the fact that only one ceramic example of this type of cup was found at Phaistos (Levi 1976, pl. 125c [44:10]) seems to indicate that the shape was not popular—in metal or ceramic. It almost seems like this cup was an experiment that was discontinued. It is possible that this bowl shape may have been copied only a few times and then abandoned.

In addition to metallic shapes from Anatolia, another set of vessels have “foreign” structural details that may indicate that the vessels were originally from this region. One

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5 As most of the vessels listed in Matthaüs 1980 are bronze vessels that are more “domestic” in nature, one would assume that these shapes would be longer lasting than, say, tablewares. Therefore, even though most of the metal examples listed in Matthaüs 1980 are dated to the LM period, perhaps the same shapes were also present in the MM period.
such feature is the flaring cylindrical lug handle. This trait appears on a type of bowl (BWL 1), a “candeliere” (Levi 1965–1966, fig. 25), and a number of conical rhyta (e.g., Levi 1976, pl. LXXX; MacGillivray 1998, pl. 16:396 and 78:396). All of these types are found in contexts dated to within MM IIB–MM IIIA, but it may be that this was a unique MM IIIA phenomenon. It does not seem to continue into the LM IA period. The clay rivets “affixing” the lugs to the rim on the “candeliere” and the clay rivet at the handle of one of the conical rhyton suggest that the lugs were modeled on metal prototypes (Levi 1965–1966, fig. 25; Levi 1976, pl. LXXX, respectively). Later examples of bowls with similar-type lugs show that the lugs were useful for suspending metal loop handles, but, of course, a non-pierced lug could also be useful for lifting a vessel or helping to tie down a cover onto the vessel.

No metal vessel with flaring cylindrical lug handles has been found dating to the Middle Bronze Age in the Aegean or in Anatolia, but some shallow metal pans/bowls from Alaca Höyük and Horoztepe in Anatolia do feature pierced cylindrical lugs at the rim, dating to EB II/III (Koşay 1944, MA72; also Reeves 2003 cat. no. 56; Özgüç and Akok 1958:44, pl. IV:3, fig. 14; also Reeves 2003, cat. no. 77, respectively). These lug handles are not of the same shape as the flaring lugs on the ceramic examples, but it does demonstrate that lug handles were used on metal vessels in Anatolia at an earlier period than the ceramic examples found on Crete. Ceramic examples of vessels with lugs at sites in Anatolia during the MBA are closer in appearance, however. Some of them do have flaring “horns” at the ends of the handle, which may indicate a change in style in the lug handle at this time (e.g., Beycesultan: Lloyd and Mellart 1962, fig. P23:7, 9, 22; Reeves 2003, fig. 8.34). The closest similarity in lug style is seen on later metal vessels from Iron Age contexts (8th century BCE). Bowls from the sites of Fidanlık-Ankara and Gordion among others have near parallel lug handles (Toker 1992:206, pls.88–95 ). Unfortunately, these are later than the Cretan examples, but it does help to demonstrate that the flaring
cylindrical lug was known in Anatolia. Thus, while it is possible that the cylindrical lug is a local Minoan invention, the fact that it appears in Crete for a short period of time without local precedent (but appears in other regions) suggests that the cylindrical lug of this type may have been copied from imported metal vessels, perhaps from Anatolia.\(^6\)

The case of the cylindrical lug seems to parallel the case of the spool handle, which may have originated in Anatolia as well (Davis 1977:72–73, fig. 55). For example, metal pans with spool handles were found in the Troad dating to EB II or III (e.g., Bittel 1959, no. 1, fig. 1a, 1b, 2a, 2b; no. 3, fig. 4 bottom right; no. 5, fig. 6 top right; Reeves 2003, nos. 155, 217, 219–221), and metal vessels with spool handles are known, for example at Kültepe in MBA levels (e.g., Özgüç 1959: 258, fig. 419 for ceramic example; 1986b, pl. 124, 16, 17)\(^7\) and Karapinar (Temizer 1954, fig. 15; Toker 1992, no. 34, handle is shown with no. 33, but it belongs to no. 34). The spool handle first appears on Crete on a sherd found at Knossos with attributes that are clearly not Minoan (Evans 1921:245 fn. 3, fig. 183b:1). In shape and surface treatment, however, the vessel—which appears to be a deep bowl or goblet—has parallels with Anatolian metal and ceramic vessels (Davis 1977:73). The sherd itself has “metallic” qualities: a lustrous appearance and two large flat clay rivets at the join between the handle and the rim (Davis 1977, fig. 35). Perhaps this ceramic vessel—a copy of a metal prototype—was imported into Crete at the same time as its metal counterparts from Anatolia. The sherd itself has been dated to sometime between the end of MM II or MM III (Evans 1921:245 fig. 183b:1), and Minoan vessels with spool handles begin to appear within this time. The spool handle occurs on a type of ceramic cup from Knossos (RD CUP 5) as well as, more famously, on some

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\(^6\) Lug handles do appear earlier in Crete in the EM period (e.g., Betancourt 1985, figs. 13, 17, 20, 29; Betancourt 2008, fig. 4.3; Davaras and Betancourt 2004; Warren 1969:20–21, 27–28), but the flaring cylindrical lug is a new type of lug handle that only seems to appear in ceramic at the end of MM IIB–MM IIIA.

\(^7\) The Tôd cup with spool handle (Bisson de la Roque et al. 1953, pl. XXXI:15148) may also have links with Anatolia.
straight-sided cups, beginning in MM IIIA. Perhaps due to the weight of the spool handle in ceramic—the handle on the Knossos cup (RD CUP 5) was irreparably broken—only stone or metal straight-sided cups with spool handles are known (otherwise called “Vapheio cups”).

The case of the Vapheio cup reveals an interesting phenomenon. Straight-sided cups (with ribbon handles) first appear in MM IA and continue in use throughout the Middle Minoan period. It is only in MM IIIA that they acquire the spool handle. As is hinted by the “foreign” sherd from Knossos, the spool handle may have arrived on Crete on metal vessels such as bowls or goblets. With the exception of RD CUP 4, which may very well be an imitation of one of these imports, the Minoans chose not to copy the whole metal vessel itself, but decided to adopt the spool handle instead. This form they grafted onto a shape already known—the straight-sided cup—and a new iconic shape was born. Perhaps the Minoans also adopted the flaring cylindrical lug at the same time and grafted it to other vessel types as well.

A few other ceramic shapes may have Anatolian connections, but the relationship is still not clear. The list includes animal-headed and conical rhyta (RHY 1–2), teapots (TP 1–2), rounded goblets (GBT) and tumblers (TMB). In the latter two examples, goblets and tumblers are known from earlier periods on Crete and are relatively easy shapes to produce in clay and ceramic. Metal examples of each type were found outside of Crete, but this may have been a case of parallel development in different regions. It has to be noted, however, that the conical goblet (MacGillivray 1998:67, fig. 2.8) and the rounded tumbler shape (TMB 1) are new in the Middle Minoan period, which may indicate fresh inspiration from new metal prototypes. The teapot with long spout (TP 1) has parallels with two silver teapots from Byblos (Montet 1928:189–191, pls. CXI, CXII, 8)

8 The metal parallel for the rounded tumbler was found at Tôd, but, if the Tôd material does, in fact, prove to be Anatolian, then this tumbler shape would also be Anatolian. More below.
nos. 746, 747). Unfortunately, the origin of these vessels is not clear, but Anatolia remains one possibility (Davis 1977:81–87). Rhyta are such an Aegean phenomena, and it is difficult to conceive of their origins as belonging elsewhere than Crete. Nevertheless, examples of clay and metal animal-headed cups—which may have been adapted into rhyta on Crete—are known from sites in the Near East and Anatolia, dating to the MBA, and ceramic conical rhyta may have appeared slightly earlier at Kültepe than in Crete (see under RHY). This does not suggest that all rhyta forms (piriform, globular, animal-figured) were inspired by Anatolian vessels, only that there may have been some sharing of objects and ideas between the two regions.

As these last examples show, there are some shapes that appear simultaneously in different regions, and it is difficult to pinpoint the exact location of their origins. It is possible that some of the shapes were simple enough to have been invented locally in each region, and then there is the possibility that perhaps ideas and metal goods were shared at one nexus point. The suggestion here is that this nexus point may have been a site in the Cilician plain (southeastern Turkey) or a port site on the north Syrian coast, perhaps Byblos.

Many of the metal (and ceramic) parallels for the ceramic skeuomorphs on Crete can be connected to Kültepe. The earliest Anatolian-inspired ceramic vessels on Crete (kantharos and possibly other carinated cups, lobed cups, etc) are dated to MM IB on Crete. While the kantharos shape was found at sites all around Anatolia in the MBA, one of the earliest examples was found in level Ib at Kultepe (Özgüç 1955:64–72; Davis 1977:90, fig. 69). It is fairly close in appearance to the silver kantharos from Gournia, and it was found with a lobed cup, parallels of which are also found on Crete (e.g., Levi 1976, pl. XVIIc; MacGillivray 1998, pl. 153:1030). Those vessels with “foreign” inspirations that possibly begin in MM IIA on Crete (RD CUP 2) have parallels from Kültepe and Acemhöyük. This also includes those vessels with connections that are not
certain: rhyta (RHY) and tumblers (TMB). The teapot has links to Anatolia and Byblos, whereas ceramic spool handles are only known, so far, from the sites of Kültepe (ceramic vessel) and Tôd (metal vessel).

The parallels with Kültepe may not just be coincidence. According to the compilation of metal vessel examples from Anatolia during the MBA period, Reeves notes that the only extant metal vessels from this period were found at Kültepe, Acemhöyük, and Titris Höyük during the early part of the period (contemporary with Kültepe Levels II) and Kültepe, Acemhöyük, plus Tarsus, and Konya-Karahöyük for the later part of the period (contemporary with Kültepe Level Ib/Ia) (Reeves 2003:135, 137 tables 4.1, 4.2, figs. 5.1, 5.2). It also happens that the only silver vessels recovered for this period in Anatolia were found at the sites of Kültepe and Acemhöyük (Reeves 2003, figs. 5.4, 5.5). The site of Kültepe is known from the extensive archives from the merchants’ houses in the karum at the site.\(^9\) The texts speak of a trade in tin and textiles from the Aššur area for silver from Kültepe (Larsen 1967:86–92). They also provide information about viticulture, with wine being used as a trade item as well (Gorny 1996:147, 164). This may prove to be relevant if the proper tablewares were exported along with the beverage with which they were meant to be used. Of the sites in which metal vessels were found, all but one are located in the Taurus mountains or in Cilicia, which is the floodplain and closest port to the eastern Taurus range. The lone example outside of the central plateau was Titris Höyük, which is located between the Taurus Mountains to the north and the extensive Mesopotamian floodplain to the south, on the banks of the Euphrates (Algaze et al. 2001).

The concentration of sites from Cilicia and the eastern Taurus mountains with metal vessels may have to do with an exploitation of the rich silver mines in the region.

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\(^9\) Acemhöyük is also thought to have had a karum on site (Macqueen 1996:29).
Large deposits of lead and silver were thought to have existed in Anatolia in the Taurus mountains of Anatolia (Yener and Özbal 1986; Stos-Gale and Gale 2003:92) and perhaps also in the Amanus range, on the eastern side of the Taurus, the possible location of the “silver mountains” mentioned in some Mesopotamian tablets (Prag 1978:40).

Undoubtedly, silver from the mines of this region in Anatolia was exported to other sites in the region. In the MBA, Byblos was an important port of trade, where, incidentally, a relatively large number of silver vessels were found, including two teapots and two shallow cups with spirals executed in repoussé that have been shown here to have ceramic parallels on Crete (see TP 1; SG CUP 4). Like the silver vessels from Tôd (see below), the origins of the vessels are debated. They are thought to be foreign to the local Byblite tradition. According to Davis (1977:82–83), however, the features on the original teapot (the other is thought to be a counterfeit) are more at home in Anatolia. The triangular spout, for example, occurs in central Anatolia (e.g., at Kültepe: Özgüç 1959, pl. XXXIX:1), and ceramic examples of teapots on conical bases and vertical collars have been found in the same general region as well (e.g., Alaca Höyük: Koşay 1966, pl. 12, no. h200; Bogazköy: Fischer 1963:42–43, pl. 34, no. 346). Thus, it is possible that the silver vessels found at Byblos were originally from Anatolia, specifically, the Taurus region of Anatolia. If Byblos (or another port of call on the north Syrian coast) was indeed an emporium for Anatolian (and Near Eastern) goods, this may also explain the possible “Near Eastern” shapes among the skeuomorphs at Knossos (see TP 1, BWL 6; RD CUP 3), all except the teapot dating to between MM IB and MM IIA.10 That the Minoans had visited the north Syrian coast at this time is suggested by Minoan objects found at Byblos in MBA levels (Dunand 1937–1939:77, 191, 193, 311, fig. 178, pls. CLXIV:4170, CLXXVII:2986; Smith 1965:13, figs. 19, 20d; Cadogan 1983:514; Betancourt 1998), as

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10 Two pairs of vessels were found in the same context. Two from the North-west pit (Group D), and two from the Early Chamber beneath the West Court (Group A). It appears as if they mainly date to MM IB.
well as the presence of Byblite objects on Crete (Branigan 1966). Thus, even though the
evidence for a link between Crete (skeuomorphs), Anatolia (source of metal vessels), and
Byblos (port of trade for Anatolian silver vessels) is at this date still tentative, there are
enough tantalizing clues to suggest that the Minoans may have imported silver and silver
vessels from either a port in Anatolia or on the North Syrian coast, probably some time at
the end of MM IB.

6.II.2 TÔD IN EGYPT

Many ceramic skeuomorphs from Crete during the Middle Minoan period resemble, in
shape and decoration, a number of metal vessels found at Tôd in Egypt. That a site in
Egypt should provide so many metal vessel parallels for Minoan pottery seems almost
counterintuitive, and, seemingly, from the beginning, there has been debate concerning
the origins of the finds from the site.

The site of El-Tôd is located approximately 20 km south of Luxor, in Egypt. During
excavations of the site in the 1930s, four large chests inscribed with the name of
Amenemhet II—the third king of the Twelfth Dynasty—were found in a foundation
deposit below a temple dedicated to the god Montu. The chests were filled with a treasure
trove of imported luxury goods, including objects of gold, unworked lapis lazuli from
Afghanistan, precious stones, cylinder seals from Mesopotamia, and a large number of
folded silver bowls and cups (Bisson de la Roque 1950; Bisson de la Roque et al. 1953).
These silver vessels, which comprised the majority of the find (153 vessels in total), were
clearly not Egyptian in style or shape, and, almost from the first, were thought to have
parallels with some Middle Minoan pottery forms (Bisson de la Roque et al. 1953: 21–
35). This fact, combined with good provenience of the find, has led scholars since then to
argue for or against a Minoan provenience for the vessels, and, in consequence, to argue
for an absolute or relative date for the Middle Minoan period vis-à-vis the date of the treasure.

Initially, many scholars working with Aegean material agreed with a Minoan attribution for the vessels, only differing in the date of the chronological links. Hutchinson (1962:105, 196), for example, dated the Tôd vessels to MM IA or MM IIA, while Kantor (1965:11), seeing parallels in MM IIA pottery, argued that the MM II period must have begun at the time of the Tôd deposit or during the reign of Amenemhet II. She did not believe that the metal vessels had come directly to Egypt from Crete, but rather that they arrived in Egypt via Syria. Branigan (1970:187) agreed that the vessels were possible Minoan imports, but pushed back the date of the treasure to as early as MM IA, whereas Hood (1961–1962:94), Warren (1980:496), and Warren and Hankey (1989:131–135) saw more parallels between the metal vessels and certain MM IB to MM IIA pottery shapes.

Other scholars, however, were more circumspect in their assessment of the origins of the silver metals, and, hence, cast some doubt on the synchronism between the Egyptian finds and Middle Minoan chronology. Chapouthier (1953:33–34), arguing that contact between Crete and Egypt was unlikely in the Twelfth Dynasty, attributed the Tôd Treasure to Asiatic artisans working with Cretan models. Dessene (1957:46, fn. 2 with references) and Culican (1966:30) both suggested a Syrian origin for the treasure, whereas Schachermeyr (1964:80), as well as Davis (1977:72–74) attributed the finds to Anatolia. Hood (1978:154), while agreeing that the vessels may have come to Egypt as tribute from a Syrian ruler, argued that the silver vessels could have been made in Crete, nevertheless. Maran (1987), building on the work of Kemp and Merrillees, who postulated a later date for the founding of the Tôd deposit (1980:290–296), wanted to see a connection between the Egyptian finds and some mainland Greek pottery forms from the Shaft Grave period. Laffineur (1988:17–30) too, saw some parallels with the
Mycenaean world, but concluded that, ultimately, the so-called Tôd Treasure was composed of a group of objects that came from three different geographical areas and three chronological phases, thus limiting its chronological value. Warren (1980) disagreeing with Kemp and Merrillees, set about to refute the notion that the finds were deposited in the New Kingdom. His work was supported by Porada (1982), who reasserted that the objects in the Tôd Treasure should be seen as clearly either earlier or contemporary with the Middle Kingdom based on the iconography of the cylinder seals and the nature of the rest of the finds. Still not convinced, another cadre of scholars, while admitting to some slight affinities between the Tôd Treasure and Middle Minoan pottery, nevertheless believe that this influence is too slight to make any definite connection between them (Betancourt and Weinstein 1976:335; Cadogan 1983:515–516; Walberg 1984).

Thus, in summary, while it is agreed that the silver bowls and cups from Tôd are clearly not Egyptian, it is apparent that there is no consensus among scholars on the origin of the metal vessels. Opinion is divided on whether the silver objects were manufactured on Crete, the Greek mainland, in Anatolia, or in Syria. The crux of the problem seems to reside in the fact that if the metal vessels were made elsewhere than Crete, then the apparent similarities between Middle Minoan pottery and the Tôd Treasure should be seen as a coincidence and not an indication of any link between the two. The problem behind this reasoning, however, is the basic assumption that any sign of similarity between the Tôd vessels and Minoan pottery should automatically suggest that the metal vessels were originally manufactured in Crete, and, hence, that the vessels found at Tôd were Minoan. This need not be the case. If it were assumed that the metal vessels were not made on Crete, but were imported from elsewhere and copied in Crete, this would eliminate much confusion. If one assumes a common source for the silver vessels—Davis (1977:75) believes that all but one vessel from the collection form a
consistent group from a common origin—and assumes that the original manufacturers exported these objects to other regions (i.e., Syria, Crete, and also mainland Greece), who then proceeded to selectively copy certain features of these silver vessels, this would explain the affinities between the Tôd Treasure and objects from all these regions. This would also help explain why not one place would be an exact parallel for the Tôd finds; each region would interpret the metal vessels in their own way in ceramic, imitating them according to local tastes.

It is logical to assume that the region with a long history of metalworking and, perhaps, more important, the resources (access to raw materials) to produce metal vessels, should be seen as a possible source of origin for silver metal vessels. One of these sources in the MBA was Anatolia. The Taurus mountains (and perhaps the Amanus mountains) were a rich source of silver, and the sites in the region with extant silver vessels, texts from the MBA that speak of a lively trade in silver, the presence of foreign merchants in the region (karum), and the identification of ancient silver mines all point to a rich history of silver mining in the region (Larsen 1967; Prag 1978; Yener and Özbal 1986; Maxwell-Hyslop 1995:248; Stos-Gale and Gale; 2003:92; see more above, under 6.II.1 Origins. Anatolia and the Near East). That objects made from silver from the Taurus were widely disseminated across the region is suggested by the lead isotope ratios from many silver objects found in Turkey, North Syria, and Mesopotamia that can tentatively be linked to several different well-defined Taurus ore fields (Sayre et al. 1992). The link with Taurus silver is also tentatively suggested by an analysis of the lead isotope ratios of several objects from the Tôd Treasure. Some of the ingots from the collection point to either a Taurus or Thasos / Chalcidice field, but, admittedly, more analysis of the silver vessels themselves are needed to confirm a sure source of origin (Menu 1994).
Further links between Tôd and Anatolia are suggested by some shared metal vessel shapes as well as manufacturing techniques that appear in both regions. Apart from long-handled shallow pans with spool handles known from Troy and the Troad that generally date to EB III, the only metal vessels with spool handles have been found at Tôd (Bisson de la Roque 1953, pl. XXXI:15148) and two sites in Anatolia, Kültepe (Özgüç 1986, pl. 124, 16, 17) and Kayapinar (Temizer 1954, fig. 15). This also includes the ceramic imitations of vessels with spool handles, one of which was found at Kültepe (Özgüç and Özkü 1953:258, fig. 419). The spool handle does not appear in the Aegean until the MM IIB–MM IIIA period, refuting the argument that the demitasse from Tôd with the spool handle should be seen as Mycenaean (e.g., Maran 1987; Laffineur 1988). The same argument applies to the raised central boss feature with ring around it found on some bowls from Mycenae and Tôd (Bisson de la Roque et al. 1953, pls. XXXVIb, XXXVIc; Davis 1977:129–133, 136, nos. 26, 27, 30, figs. 100–103, 105). This feature is not known in the Aegean until the Shaft Grave period (Davis 1977:74), but the omphalos base with two surrounding circles is a technique seen on some of the same pans that had spool handles (e.g., Eskiyapar: Özgüç and Temizer 1993, figs. 48, 50, p. 618, pl. 117; Maxwell-Hyslop 1995, fig. 1:5). At Alaça Höyük, one-handed gold and silver cups have rounded or strap handles that are either soldered or attached by rivet to the lip and body of the vessel. These are features that occur on vessels from Tôd as well as Eskiyapar (Toker 1992, nos. 16-18 [Alaça Höyük] and no. 32 [Eskiyapar]; Bisson de la Roque 1950, pl. XIII:70583). And, finally, some shapes, such as semi-globular cups with gadrooning or fluting, which comprise the majority of the vessels at Tôd (Bisson de la Roque 1950; Bisson de la Roque et al. 1953) are also found earlier (at Alaca Höyük: Koşay 1944, pls. CI, CV) and later (at Kmik: Emre and Cinaroğlu 1993:683, no. 24, fig. 21, pl. 126:1; Maxwell-Hyslop 1995, figs. 1, 4) in Anatolia as well.
While the evidence for the origin of the Tôd treasure in Anatolia unfortunately hinges on clues from a limited assemblage of metal vessels found at sites in central and southeastern Anatolia, the evidence is, nevertheless, compelling. That the vessels found at Tôd were originally Anatolian may help to explain the presence of ceramic imitations on Crete that resemble the Tôd material. As was suggested above (6.II.1 Origins. Anatolia and the Near East), the Minoans may have undertaken trading expeditions to southeast Anatolia or the northwest Syrian coast to acquire silver. On these trips, they may have picked up vessels very similar to the ones that eventually made their way to Egypt. This would explain why all “foreign” shapes from among the ceramic imitations on Crete were either Anatolian (or, minimally, from the Near East) or from Tôd. The source of silver (and the metal vessels made from this material) was likely the same for each region.

With this proviso, that the Tôd Treasure finds represents a group of silver vessels from the same source of origin as the group of metal vessels that made their way to Crete, it is possible, then, to use the metal vessels from Egypt as examples of what the original metal prototypes in Crete may have looked like. According to the summary of ceramic types on Table 5, the Minoan vessels that share similar shapes with some of the metal examples at Tôd include shallow bowls with vertical handles (BWL 2), rounded globular cups (RD CUP 2), semi-globular cups (SG CUP), demitasses (DT CUP), and tumblers with fluting (TMB 1). In terms of the collection of metal vessels from Tôd, it appears, then, that most of the major shapes represented in the Tôd Treasure were also found in Crete in ceramic form. This may suggest that the same group of vessels that found their way to Egypt also made their way to Crete, perhaps as a set. As most of the vessel types

11 Evidence from Egypt suggests that the Twelfth Dynasty kings made expeditions into “Asia” (present-day Syro-Palestine and North Syria), including as far as the Lebanese coast (perhaps Byblos?) during the reign of Senwosret I, Amenemhat II’s father (Redford 1992:78). Perhaps the Tôd Treasure was booty or tribute from this region. This would explain the presence of North Syrian cylinder seals, Afghan lapis, and other “Syrian” finds from the treasure (see Redford 1992:71–92).
are tablewares presumably used in drinking, perhaps the assemblage at Tôd and at Knossos and Phaistos of similar tablewares represents part of a drinking set (see below, 6.III.1 Ceramic Vessel Sets).\textsuperscript{12}

The earliest ceramic imitations of the same types of metal vessels found at Tôd are dated to MM IB, including, for example, a near exact ceramic copy from Phaistos of the silver tumbler with torsional fluting from Tôd (Levi 1976, pl. XII\textsuperscript{[54:14]}; Bisson de la Roque 1950, pl. XVI:70618) and a molded semi-globular cup with plastic gadroons from Knossos (MacGillivray 1998, pl. 153:1031 \textsuperscript{[42:1]}). Most vessels, however, are dated to the transition from MM IB to MM IIA and MM IIA. As all of the shapes with parallels to Tôd are new in the Cretan repertoire with no previous local tradition, this implies a “sudden” introduction into Crete, i.e., the shapes seen at Tôd were probably imported to Crete for the first time sometime at the end of MM IB into MM IIA. This date may prove useful for establishing links between the Minoan chronology and the better-established Egyptian one. If indeed vessels of the same sort were imported into Crete and Egypt at the same time, this would imply that the beginning of the Twelfth Dynasty (Amenemhet II was the third pharaoh of that dynasty) was roughly contemporary to a period between the end of MM IB and MM IIA. Of course, all of this assumes that Tôd-like vessels were also exported to Crete at the same time as the ones found at Tôd. It is also possible that the Minoans had imported some metal vessels before/after another group of vessels found their way to Tôd, and it is also conceivable that the vessels interred at Tôd were antiques, in which case, the corresponding Egyptian date could be pushed down somewhat.\textsuperscript{13}

\footnote{As mentioned above, perhaps the drinking set was meant to consume wine. The region around Kültepe as well as North Syria seem to have also been producers of wine (Gorny 1996:147, 164; McGovern 2003:168-180)}

\footnote{See footnote 11 for the suggestion that the Tôd treasure vessels may have been slightly older than Amenemhat II’s reign.}
6.II.3 SHAFT GRAVES AT MYCENAE

Besides the extant metal parallels from Anatolia and Tôd, the other large group of metal parallels for the ceramic skeuomorphs on Crete were those found in the Shaft Graves at Mycenae and, to a lesser extent, from other sites on mainland Greece. Much attention has been given to the finds from these graves, a fortuitous discovery of a trove of luxury goods, including a large number of gold and silver vessels. The first graves to be uncovered were the six Shaft Graves from Grave Circle A at Mycenae, which were discovered and excavated at the end of the nineteenth century CE, first by Greek archaeologist Pittakis in 1841 and then by Schliemann in 1874 (Schliemann 1878; Karo 1930). Approximately one hundred years later, another thirty-five inhumations were uncovered in Grave Circle B by Papadimitriou and Mylonas between 1952 and 1954 (Mylonas 1972–1973). Both Grave Circles represent the presumed burial grounds of a number of elite members of the citadel (between MH III and LH II A).

Much of what is known about Minoan and Mycenaean metalwork is due to the discovery of these vessels at Mycenae and the subsequent analysis of the vessels since then (e.g., Karo 1930; Vermeule 1975; Davis 1977; Laffineur 1977; Xenaki-Sakellariou and Chatziliou 1989). Among the scholars who have examined the metal vessels from the Shaft graves, Ellen Davis’ work (1977) remains seminal in identifying Minoan metal working techniques and in distinguishing these from Mycenaean practices (see 3.I Metalwork in the Aegean). This knowledge has proved invaluable in identifying ceramic skeuomorphs and in reconstructing the appearance of the original metal models. The discovery of the metal vessels in the Shaft Graves has also provided an invaluable opportunity to compare the traditional context dates of the metal vessels with those of the ceramic skeuomorphs on Crete that resemble them and to see whether the skeuomorphs may shed some light on the actual depositional date of the metal objects. In theory, metal vessels are notoriously curated for long periods of time, whereas ceramic vessels are
presumably deposited, in the majority of cases, after a relatively shorter lifespan. Therefore, the ceramic imitations should more accurately date to the period of their use, and, by extension, can more accurately date the period of use of their metallic prototypes.

In order to test this theory, while at the same time discussing the nature of the finds in the Shaft Graves, all the silver and gold metal vessels from these contexts are compiled in Table 6. The following discussion is based on this table.

The overall chronological dating of the group of graves from both Grave Circles A and B generally encompass the end of the MH period (MH III) through to LH II. Although the precise phasing of the graves themselves are still being sorted into these three larger periods, most scholars agree that Grave Circle B is the earlier cemetery and that the most recent of its graves overlap with the oldest from Grave Circle A (SG II and VI). This overlap is thought to have occurred at the end of the Middle Helladic (MH III) period, which would render most of the Grave Circle B material as slightly earlier than SG II and VI, but still dated to within the MH III period. From this point, the schemas differ somewhat, with various sub-divisions in the phasing of the rest of the graves, but, in general, SG V, IV and III are dated to beginning of LH I (with SG III slightly later than the others) and the burials in SG I as being the latest of them all, dating to LH I–LH IIA (see Dickinson 1977; Matthäus 1980; Kilian-Dirlmeier 1986; Graziadio 1991; Dietz 1991). On Crete, the “end of MH III” would be contemporary with MM IIIB, while LH I and LH IIA would equal LM IA and LM IB, respectively (see Warren and Hankey 1989).

According to the traditional dates for the Shaft Graves, the earliest graves are those dating to Grave Circle B and Shaft Graves VI and II. Relatively few gold and silver vessels were found in these contexts, but their dates are suggestive (see Mylonas 1972–1973:424–425). In Grave Circle B, metal vessels were found in Graves Nu, Gamma, Iota, 

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14 Bronze vessels are not included in this list as few ceramic skeuomorphs were found to resemble them.
Delta, and Alpha. According to Davis’ study, all the vessels, but one—a silver ewer—were manufactured locally (Davis 1977: 136–137, no. 30, fig. 105). Of these graves, Iota and Alpha are considered among the oldest in the cemetery, hence in the Shaft Grave sequence (Graziado 1991:406, table 1). Along with the silver ewer, a faience cup, also found in Grave Alpha (Mylonas 1972–1973:31–32), looks very much like a faience cup that was recovered from the “Temple Repositories” at Knossos (Evans 1921:498–499). The *terminus post quem* for Grave Alpha, then—and, hence, most of the rest of the Shaft Graves—would then be some time between MM IIIB and LM IA, the date assigned to the “Temple Repositories” (Panagiotaki 1998b). The straight-sided cup with vertical flutes and repoussé mid-rib from Grave Gamma (Davis 1977:130–133, no. 27, figs. 102–103) would seem to fall within that date as well. Ceramic skeuomorphs with the same type of decoration occur at Phaistos in a MM IIIA context (e.g., Levi 1976, pl. 121r), but seem to gain in popularity in LM IA and LM IB. As a copy of a Minoan model, perhaps one may assume that the metal cup was not as early as MM IIIA, but slightly later.

Of all the metal vessels in the Shaft Graves, only the straight-sided cups with doubled mid-ribs and arcades do not have ceramic skeuomorphs on Crete dating to before MM IIIA. These metal examples were found in SG VI, II, and V (Davis 1977:137–141, nos. 31–34, figs. 108–111). The lack of skeuomorphs in this period would seem to suggest that Minoan metal vessels of the same type were manufactured after this period, in MM IIIB or LM IA, and thus outside the purview of this dissertation.

The ceramic skeuomorph with the most resemblance to the straight-sided cups with doubled mid-ribs and arcades is a straight-sided cup that was found in the “Monolithic Pillar Basement” at Knossos (Evans 1921, fig. 183a:4 [17:12]; also MacGillivray 1998, pls. 142:979 and 143:979). The cup was painted in a way that seems to be a cross between the cup from Nu with double fluting (Davis 1977:125–129, no. 25, figs. 98–99) and the four cups with doubled mid-rib and arcades from Graves VI, II, and
V (Davis 1977:137–141, nos. 31–34, figs. 108–111). The ceramic cup was included in MacGillivray’s study on the Protopalatial pottery from Knossos (1998:167, no. 979), but it may be later than MM IIIA. The ceramic cup was painted with two identical zones of thick, white vertical lines surrounded by painted “arcades.” The lines are superimposed by dots and “S-shapes” are interposed in between the lines. The identical pattern is painted on the inside of the cup as well, a possible reference to the three-dimensional quality of metal fluting. White opposing diagonal lines are painted over the mid-rib. In terms of the painted decoration of “flutes” above and below the mid-rib, the ceramic cup most resembles the gold cup from Nu with “double fluting” (Davis 1977:125–129, no. 25, figs. 98–99). This metal cup was apparently locally made, but it was likely modeled on Minoan prototypes. This metal vessel is the only metal straight-sided cup with “double fluting” in the Shaft Graves. It is also the only one with a pointillé design around the rim. In both these aspects, it resembles the ceramic cup from Knossos. The short round “flutes” on the clay cup are evocative of the deep, rounded flutes on the metal cup. In addition, the dots on the “flutes” of the clay cup are unusual for a feature connected to fluting, but not if they are meant to refer to the pointillé design on a metal cup. Grave Nu is dated to the end of MH III into LH I, and it is one of the latest in the Grave Circle B series (Graziadio 1991:406, table 1).

In some other respects, the painted cup resembles the metal vessels with arcades (Davis 1977:137–141, nos. 31–34, figs. 108–111). Three of the four metal cups have two mid-ribs separated by a deeper channel. These mid-ribs are incised with opposing diagonal lines, and all four display a repoussé arcade motif on the upper half of the vessel. The lower half is either left plain or, in one case, incised with lines set in a chevron pattern. The ceramic cup also has a repoussé mid-rib, which is painted in white opposing diagonal lines, a motif that recalls the incised decoration on the metal mid-ribs. On Crete, the repoussé clay mid-rib occurs on ceramic shapes dated to MM IIIA, save for
one example from Phaistos, that is said to come from a MM II (Fase Ib) context (Levi 1976, pl. 129o [49:13]). This example is the only cup with a doubled mid-rib. If indeed, the date of the ceramic cup from Phaistos is accurate, then, perhaps, the doubled mid-rib should be considered an “old-fashioned” feature in MM III. Another ceramic cup dated to MM II is evocative of vertical fluting (Levi 1976, pl. 123f [48:6]). It is painted with vertical lines—terminating in painted arches—and the rim is crinkled, perhaps as means of evoking the effect of the flutes reaching the rim. The cup does not have a mid-rib, but a horizontal band with dots, which, it has been argued here, represents a technique (the added band) that preceded the mid-rib in strengthening certain metal vessels at their weak spots (see 4.IV Ornamental bands, especially 4.IV.1 Bands with Dots).

Thus, again, if one can trust ceramic skeuomorphs, in the MM II period (these cups are probably MM IIB), there were cups with vertical fluting (with or without bands)\(^{15}\) and plain cups with doubled mid-ribs. The mixing of features and motifs may have resulted, in later periods, in cups with double flutes and mid-ribs (ceramic cup from Phaistos and gold cup from Nu), cups with large rounded flutes (Davis 1977:125–130, nos. 25, 26, figs. 98–101), cups with vertical flutes, no rib, and arcades (Davis 1977:143–144, no. 37, fig. 114), and finally, cups with doubled mid-ribs and arcades (Davis 1977:137–141, nos. 31–34, figs. 108–112).\(^{16}\) All of these cups were apparently locally made. It is possible that the mixing and matching of different techniques on these local cups was developed on the mainland, in which case, this may explain why no ceramic

\(^{15}\) The only metal cup with vertical fluting that was considered to be Minoan was found in Shaft Grave V (Davis 1977:155–156, no. 44, fig. 119). The state of the cup was so corroded and broken, that it may have been an antique when it was deposited. A very similar cup, however, said to be a very “successful” copy of the type of cup found in SG V was found in Grave Iota, one of the earliest graves in the cemetery (Davis 1977:133–134, no. 28, fig. 104). If this cup was not also an antique at the time of deposit, this would indicate, then, that the Minoans were producing cups with vertical flutes (and no mid-ribs) until at least MM III B.

\(^{16}\) Davis (1977:171) describes the cups with arcades as “old-fashioned.”
skeuomorphs, except for the one example from Knossos, were recovered on Crete during the MM period.

That this development happened after a period contemporary with MM II A is suggested by the date of the ceramic cup from the “Monolithic Pillar Basement” at Knossos (Evans 1921, fig. 183a:4; also MacGillivray 1998, pls. 142:979 and 143:979). The “Monolithic Pillar Basement” deposit, in which the cup was found, apparently contained material from two or three floors. One was dated to MM IA, one to MM IB, and the other, perhaps, to MM IIIB–LM IA. MacGillivray notes, however that there were many MM IIB–MM IIIA fragments from filling operations in the area (1998:46). Given the resemblance of this ceramic cup to the metal vessels, then, this vessel could date to either MM IIB–IIIA or MM IIIB–LM IA. The later date, however, seems more apt. If the terminus post quem of the graves in Circle B is roughly contemporary with MM IIIB–LM IA, and the ceramic cup resembles the gold cup from Grave Nu, which is apparently one of the later graves in the sequence of the cemetery, then, it is more probable that this cup came from the floor dated to MM IIIB–LM IA at Knossos. This may also explain the lack of other skeuomorphs of this kind in earlier periods.

Thus, it would seem, the traditional dates of the Grave Circle B and Shaft Graves VI and II conform well to the context dates of the skeuomorphs on Crete. The evidence shows that the shapes of the metal vessels in these graves are later than MM II A, but within the range of dates of their skeuomorphs. This would suggest that the metal vessels were probably buried relatively soon after they were manufactured, i.e., within MM IIIB–LM IA. The comparison of metal vessel shapes and their skeuomorphs on Crete for Shaft Graves IV and V, however, presents another picture.
Most of the metallic parallels for the Middle Minoan ceramic skeuomorphs at Knossos and Phaistos were found in Shaft Graves IV and V. Besides the fact that the bulk of the metal finds in the cemetery were found in these graves, there may be another reason why this was so. The reason that many ceramic forms from the Middle Minoan period on Crete may have parallels from these two graves may have to do with the fact that some of the finds—mostly Minoan-made—may have found their way to Mycenae as early as MM IIB–MM IIIA.

In general, it was observed that the metal vessels from Shaft Grave V and IV can be divided into four different groups: a group mainly composed of local vessels that may post-date MM IIIB (“latest”), Minoan vessels with corresponding skeuomorphs found in contexts dated on Crete to MM IIB–MM IIIA (bulk of the material), a group of corroded, broken vessel pieces that may pre-date MM IIIA (“earliest”), and a series of vessel types that are difficult to date due to their unique nature (e.g., goblets, rhyta, situla, two-handled cup). By dating the earliest and latest vessels within these graves, it should become apparent when the vessels were deposited.

In contrast to the vessels that were found in Grave Circle B (and Shaft Graves VI and II), the majority of the metal vessels from Shaft Graves IV and V were apparently made on Crete (see Table 6). The only vessels that were not thought to be Minoan-made include all the straight-sided cups with ribbon handles (in other words, not the Vapheio cups), a gold kantharos (Davis 1977: 175–176, no. 60, fig. 143), a small globular jar (Davis 1977:176–179, no. 61, figs. 144–145), a lion rhyton (Davis 1977:179–183, no. 62, figs. 146–147), and “Nestor’s cup” (Davis 1977: 183–187, no. 63, figs. 148–150). The problem with the latter types of vessels, however, is that each one of these is considered odd in their manufacturing techniques. Davis (1977:176) thought that the “execution of the bottom moldings and the handles [of the kantharos] [was] irregular,” but attributed it as a local workshop due to its shape. The shape itself is rather more at home in Anatolia,
and it is possible that this was an import from there via Crete (see 6.II.1 Origins. Anatolia and the Near East above). The small globular jar too was odd, and Davis (1977:178–179) could not attribute it to a “Minoan working at Mycenae, or a local Mycenaean, since none of the four vessels [three other lidded vessels from SG III] bears characteristics diagnostic features.” Nevertheless, even she concedes that it appears to “reproduce Minoan shapes but [using] simpler techniques than on other Minoan vessels.” The lion rhyton and “Nestor’s cup” (a goblet with two handles) are both very unique pieces with no parallels. The two were attributed to the Mycenaeans due to their “crude” manufacturing techniques and “Mycenaean style.” It is conceivable that these too were Minoan products that were commissioned by the Mycenaeans, but, due to the unusual nature of the vessels, this can not be demonstrated either way. Thus, with the possible exception of these vessels, the only locally produced metal vessels from SG IV and V seem to have been straight-sided cups.

As was discussed above, many of the straight-sided cups that were found in Grave Circle B likely post-date MM IIIB. The latest of these vessels seem to have been the cups with vertical fluting and those with arcades, three of which were also found in SG V (Davis 1977:140–142, 143–144, nos. 33, 34, 37, figs. 110–111, 114). The other types of straight-sided cups—cups with foliate bands (Davis 1977:173–174, no. 57, fig. 142), plain cups with repoussé mid-ribs (Davis 1977:172, no. 55, figs. 136–137), and cups with repoussé spirals (Davis 1977:141–143, nos. 35, 36, figs. 112–113)—have indeterminate skeuomorphic dates. They can date to any time within MM IIB to LM IA. Ceramic cups with spirals occur as early as MM IIB, but the spiral motif is popular and continues on straight-sided cups down into the LM period.¹⁷ The foliate band is also a popular motif.

¹⁷ A metal cup from SG V has spirals above and below a flattened mid-rib. The mid-rib looks to be a cross between an ornamental strip and a repoussé mid-rib (Davis 1977:156–157, no. 45, fig. 123). This silver cup was broken and much corroded, perhaps indicating that it was an antique at the time of deposition. If this were the case, then this might be the type of vessel was a model for the ceramic cups with spirals from MM IIB.
Even though its earliest incarnation on straight-sided cups and tumblers may have been in MM IIA, the rounded-leaf type of foliate band seen on the metal cup occurs on vessels from MM IIB–IIIA and beyond into the LM period. Finally, all that can be said about the plain straight-sided cup with repoussé mid-rib is that it is later than MM IIB, when mid-ribs likely first appear in ceramic on Crete. Thus, from the evidence gathered about the locally made vessels found in SG IV and V, it appears as if the manufacture dates of these metal vessels conforms with the traditional dating of these two graves, i.e., to within the end of MH III to LH I.

The examination of the metal vessels thought to be Minoan from SG IV and V, however, reveals that the collection of vessels in these graves may have been deposited over a longer period of time than just the end of MH III to LH I, or that some of the finds within these graves were heirlooms at the time of their deposit. The evidence for the chronological range of the metal vessels comes from some of the “latest” shapes and some of the “earliest.”

In general, the metal vessels that were found to have MM ceramic parallels on Crete include straight-sided cups (SS CUP), rounded cups with added rims (RD CUP 1 which share the same techniques as BAS 1), semi-globular cups (SG CUP), jugs with high beaks (JUG 1), a jug with a flat rim (JUG 5, smaller version than ones in Shaft Graves), small globular jar (JAR 2), situla-like jars (JAR 3), and goblets that do not have corresponding shapes in ceramic on Crete, but do provide information about Minoan decorative techniques (Davis 1977:208–220, nos. 82–83, figs. 169–173). Not included in this list of MM vessels is a two-handled cup that was found in SG V (Davis 1977:161–162, no. 48, fig. 126). It is possible that this jar was the latest in the grave. A ceramic cup with almost the exact shape was found in the Royal Road excavations,

18 If this jar was indeed Minoan-made. See above.
probably dating to LM IB final (Hood 1953:25–29; Davis 1977:162, fig. 127). This would imply that SG V was used longer than thought, up until the LH IIA period on the mainland.

With the possible exception of this lone cup, the majority of the other vessel finds within Shaft Grave have ceramic parallels on Crete dating to within MM IIB–MM IIIA. The jugs and the semi-globular cups are relatively long-lived shapes that begin in the first half of the MM period and seem to continue through to MM IIIA, and, thus, lack chronological precision. The other vessels in the graves, however, are more instructive. A jar with a flat rim and repoussé spirals around the shoulder was found in SG V (Davis 1977:149–155, no. 43, fig. 120). This is the only silver jar known of this type, but three similarly-shaped bronze jars were found, each with their own repoussé flourishes on the shoulder. One of these bronze jars was found in SG V (Davis 1977:153, this jar was in fragments), another in the “Northwest Treasure House” at Knossos (Evans 1928:645, figs. 402, 410, 411a), and a third at Thera (Marinatos 1971, pls. 94–95; Davis 1977, fig. 122). The context dates for these finds would suggest a manufacture date circa MM IIIB–LM IA.

The rounded cup (RD CUP 1) that was found in SG V (Davis 1977:157–159, no. 46, fig. 124) has the same foliate band on the rim as a bronze basin from the “Northwest Treasure House” at Knossos (Evans 1928:637–645, figs. 402–405, 409). It is thought that the two vessels were made in the same workshop (Karo 1930:235). The “Northwest Treasure House” context suggests a MM IIIB date, but many examples of ceramic basins —of which the rounded cups were mainland equivalents—were found in MM IIB–MM IIIA contexts at Knossos (see BAS 1). Again, the possibility exists that the metal cup found in SG V was just as early as the ceramic basins. While the shape of the rounded cup does continue into LH IIA, perhaps into LH IIIA, the cup in SG V is stylistically early with well-molded and three-dimensional foliate bands, suggesting a pre–LM date.

A number of Vapheio cups were found in SG V. With the exception of those that were corroded (more on these, below), these include one gold cup (Davis 1977:144–147, no. 38, fig. 115) and two silver examples (Davis 1977:147–149, nos. 39–40, figs. 116–117), said to be of Minoan manufacture. The cups are plain, without decoration. On Crete, the ceramic skeuomorphs indicate that the spool handle appears on ceramic cups, perhaps as early as MM II B.\textsuperscript{19} Vapheio cups with added decoration—either incised lines like on the cups from Vapheio (Davis 1977:258–260, nos. 105–106, figs. 202–205) inlay work, like on the cup from Midea (Davis 1977:263–266, no. 109, figs. 210–213), or repoussé work, like on another cup from Midea (Davis 1977:281–282, no. 117, fig. 228)—seems to have begun at least by LH IIA. Therefore, the plain cups from SG V could conceivably be as early as MM IIIA and as late as LH IIA. Given the dates of the other vessels within the graves, it seems more likely that they are on the earlier side.

The small globular jar (JAR 2) with two horizontal handles is an unusual metal type that appears in SG V and III (Davis 1977:176–179, 242–243, nos. 61, 95, figs. 144, 190–191). Davis could not be certain of the attribution of origin, as the metalworking techniques appeared to be simpler than those observed on other Minoan-attributed vessels (1977:178, 243), but she nevertheless concedes that the shape and techniques used appear to be Minoan (1977:178–179). Ceramic skeuomorphs have been found for the globular jar shape. One ceramic example from Phaistos was found in an apparent MM IIA (\textit{Fase Ib iniziale}) context (Levi 1976, pl. 76b), although the type appears as late as MM IIIA as well (Levi and Carinci 1988, pl. 24). If the ceramic skeuomorphs are dated correctly, this

\textsuperscript{19} A ceramic cup with a spool handle was found in the “Loomweight Basement” at Knossos (MacGillivray 1998, pl. 25:818). MacGillivray states that this cup may have come from the level below the cement floor or the make-up of the plaster dais. He sees this as an "earlier" type than those of MM IIB. So, it may belong to MM IIA, although MM IIB is probably more likely (MacGillivray 1998:41).
would, then, suggest that these metal jars could have been manufactured anytime between MM IIA and MM IIIA.

Whether the gold jars were deposited in the grave in MM IIA, MMIIB, or MM IIIA is another concern. To aid in this question, it would be useful to know what the “oldest” metal shapes may have been. This would provide a *terminus post quem* for the rest of the material. Within SG IV and V, a number of metal vessels were found that appear to have been refitted (with new handles, for example) and curated. This would suggest that some time had passed before these vessels were deposited in their final contexts, which would imply that they were already “old” by this time. Another group of vessels were found in pieces, fragmentary and corroded (see Table 6 for entries with square brackets around them). It is unlikely that the state of these vessels was due to natural erosion in the soil, as all the vessels within the graves then would have suffered the same fate. Perhaps, then, these fragments represent vessels that were already old and used when they were deposited. It was noticed that many of the fragments (handles, jar necks, rims) come from parts of vessels that would have once been gilded or silver-plated (e.g., Davis 1977:191–192, no. 66, figs. 154–155 of silver jar neck with gold foil still adhering). If these vessel parts were intentionally chosen for their intrinsic value, this would suggest a deliberate curation strategy and not a haphazard erosion of the finds.

The metal vessels that appear to have been curated include two gold straight-sided cups with horizontal flutes (Davis 1977:174–175, nos. 58, 59, figs. 140–141) and a silver “Vapheio” cup (Davis 1977:195–196, no. 71, fig. 160). The two gold cups were found in SG IV. Davis attributes the origins of the cups to the mainland due to the treatment of the handles, but, nevertheless, states that the vessels were “decorated in the Minoan fashion...and the artist must have adopted the Minoan technique of forming the channels with a tool while the cup was turned” (Davis 1977:174–175). Thus, it appears as if the body was Minoan-made, but the handle was not. Rather than implying that a mainland
artist used Minoan techniques for the body of the vessel and Mycenaean ones for the handle, it seems more likely that the Minoan-made cups were curated over time. In this scenario, a Mycenaean artist would have replaced the original handles of the Minoan-made vessel once they fell off, explaining the use of both techniques on the same vessel.

The same scenario also seems likely for the “Vapheio” cup with ribbon handle found in SG IV (Davis 1977:195–196, no. 71, fig. 160). In this case, however, the evidence that the original handle was replaced is more secure. Not only is the body thought to be Minoan and the handle Mycenaean, but traces of three rivets from the original handles still remain, visible at the rim. The new handle—the only one of its kind on a “Vapheio” cup—rather awkwardly sits not far from the old handle attachment (Davis 1977:196). Both the Vapheio handle and the straight-sided cup with wide horizontal flutes are features that first appear in ceramic in MM IIB–IIIA, and, while the Vapheio cup type does continue beyond MM IIIA, it does not appear that the cup with horizontal ridges was popular beyond this period. This would imply from the curated pieces, then, that at least the two gold cups were manufactured as early as MM IIB–MM IIIA.

Evidence from the fragmentary vessels seems to suggest a date contemporary with MM IIB–IIIA as well. The vessel types that were found in pieces include straight-sided cups with vertical flutes (Davis 1977:155–156, no. 44, fig. 119), corroded Vapheio cups (Davis 1977:149, nos. 41, 42, fig. 118), a straight-sided cup with mid-rib and repoussé spirals (Davis 1977:156, no. 45, fig. 123), rims from rounded cups (Davis 1977:163–164, no. 50, fig. 130), fragments of cups with foliate bands (Davis 1977:164–165, no. 51, fig. 131), the “Battle Krater” (Davis 1977:222–227, no. 86, figs. 176–178), two rhyta, including a conical type (Davis 1977:227–230, no. 87, figs. 179–180), and various other fragments, including two pieces of a vessel with white “spots” (Davis 1977:168–170, no. 54, figs. 134–135) and one with ornamental pins (Davis 1977:197–198, no. 73, fig. 161). Of these, perhaps the most instructive in terms of chronology are
the latter fragments. The rim fragment with “spots” and the fragment of a vessel with ornamental pins may perhaps suggest a metallic inspiration for the ceramic decorative finish sometimes called the “White-spotted Style” (Evans 1921:417; MacGillivray 1998:64–65). This style is characterized by a random distribution of small spots on a dark ground. This decorative finish is mainly seen on pottery from the MM IIIA period, but examples of pottery with this finish found in earlier contexts, indicate that the “style came into existence before the end of the MM IIB” (MacGillivray 1998:65). As this pottery style does not extend much later than MM IIIA, and if it is assumed that the metallic fragments preserved in the Shaft Graves were made prior/at the same time as the first appearance of the “White-spotted Style” on ceramics in Crete, then perhaps these fragments may be as old as MM IIB in date. Conical rhyta, straight-sided cups with Vapheio-type handles, rounded cups, are all shapes that do not appear until at least MM IIIA, but the evidence from fragments with white “dots” and the straight-sided cups with horizontal flutes would suggest that the oldest vessels were perhaps slightly older than that, thus maybe MM IIB. Thus, the evidence of the “oldest” vessels in the Shaft Graves would seem to point to a date to date contemporary with MM IIB–IIIA.

What does the evidence from the comparison between the metal vessels in SG IV and SG V and the ceramic skeuomorphs reveal about the deposition dates of the vessels in the graves? From the evidence gathered here, it appears as if the earliest vessels were manufactured as early as MM IIB–IIIA, perhaps MM IIB. However, some time had to elapse for some of these vessels to have been repaired in antiquity. This would imply a slightly later depositional date, possibly MM IIIA or MM IIIB. The bulk of the material in the graves are dated by their skeuomorphs to a period contemporary to MM IIB–IIIA to LM IA, and the latest vessel may date to LM IB/LH IIA. Overall, then, it would seem that the dates of the metal vessels (using their skeuomorphs) are either slightly earlier than or contemporary with the traditional dating of these two graves. What is revelatory,
however, is how these dates compare to the evidence from Grave Circle B. In the traditional dating schema, Grave Circle B is earlier than SG IV and V, and the latest graves within Circle B overlap the earliest graves within Grave Circle A (SG VI and II, which are thought to be earlier than V and IV) (see Graziadio 1991:406, table 1). However, as it was suggested above, the metal vessels within Grave Circle B and SG VI and II can generally be dated to post-MM IIIB and pre–LM IB. While many of the vessels within SG IV and V fall within this time range, there is also a contingent of vessels that possibly pre-date MM IIIB. In LM IA, a new slew of metal vessel types were introduced in Crete (see Furumark 1972; Mountjoy 1993), but the majority of shapes seen in the Shaft Graves IV and V are “old-fashioned” by this time. There are two scenarios that may help to explain this seemingly divergent evidence.

The first scenario would imply that all the “oldest” vessels were deposited in the graves as heirlooms sometime after their manufacture. This would encompass most of the Minoan-made vessels, which would have been exported to the mainland probably sometime in MM IIB–IIIA. If we assume that the majority of Minoan-made vessels were manufactured sometime around MM IIB–MM IIIA (all of the pre–LM IA vessel types could conceivably be this early) and were heirlooms, this would also imply that there was a time when metal exports from Crete slowed down (perhaps after the earthquake on Crete in MM IIB), forcing the Mycenaeans to produce their own metal vessels starting from that point onwards. All the locally made vessels do seem to post–date MM IIIA. This would explain the lack of Minoan vessels in Grave Circle B, which appears to have begun life in MM IIIB.

The second scenario would posit a longer occupational period for SG IV and V. As the earliest fragments in the graves seem to have already been “old” by MM IIIA, but the bulk of the newest vessels not much older than MM IIIB, this would imply a depositional date contemporary to either late MM IIB–MM IIIA or MM IIIB for much of
the material. This would extend the traditional date of the graves to before the “end of the MH into the LH I” period and also before Graves VI, II, or the ones in Grave Circle B. This does not mean that deposition did not happen in LH I in SG IV and V, only that the dates of the earliest burials within the graves were perhaps earlier than once thought. Shaft Graves IV and V had some of the most grave goods among both Grave Circles (Dickinson 1977:40, 48). Perhaps the large quantity of grave goods reflects a relatively high number of inhumations (especially if this grave was open longer than the others), whose remains were lost to time.\(^{20}\) This would mean that SG IV and V might have existed before and alongside the graves in Grave Circle B.\(^ {21}\) This scenario would posit two cemeteries open at the same time, perhaps one for, say, a “wanax” and his family and one for “lower status individuals.” The high status burials in Grave Circle A might explain the large amount of burial goods for these graves and the fact that the “best material,” i.e., the Minoan imports, would have been reserved for these burials.\(^ {22}\) It would also explain why only Mycenaean-made vessels—i.e., the counterfeits of the elite Minoan vessels—would have been used by the lower status individuals. The use of Grave Circle A by higher status individuals might also help to explain the location of this Grave Circle nearer to the citadel, and the fact that the memory of this cemetery was preserved when the citadel at Mycenae was rebuilt in LH IIIB (Dickinson 1977:47). While more research is necessary to choose the likely scenario, it is clear that the comparison of the metal vessels with their skeuomorphs can help in this research.

\(^{20}\) See Dickinson 1977:48 for an estimate of the number of bodies in each grave.

\(^{21}\) Some of the pottery from these graves date to MH III (Dickinson 1977:48), allowing the possibility that these graves were open for a longer period than once thought.

\(^{22}\) The evidence from the metal vessels in SG III and I follow the same trends as those in SG IV and V. However, as most of the “Minoan” vessels are irregular in shape and manufacturing techniques, it was more difficult to make comparisons with ceramic skeuomorphs. It is thought that these two graves date to roughly the same periods as SG IV and V (Graziadio 1991:406, table 1).
6.II.4 LOCAL SHAPES

Having reviewed all the possible origins of “foreign” metal vessel shapes, it remains to examine the assemblage of vessels thought to be local innovations. Including all the types that found their way to mainland Greece, the list of vessel shapes that are assumed to have been invented on Crete include askoi (ASK), basins (BAS), a square bowl type (BWL 4), bucket jars (BKT), straight-sided cups (SS CUP), most jugs (JUG 1–3, 5), most jars (JAR 1–3) including bridge-spouted jars (BSJ), stands (STD), goblets (GBT), tumblers (TMB), and many rhyta types (RHY 3–4). Among this list, many include vessel types that are “one-of-a-kind” (i.e., the shape of each vessel varies individually within the type). These include askoi, many rhyta, stands, bucket jars, cylindrical spouted jars, and basins. A brief examination of the findspots of these vessels indicates that the majority of those that were found in primary contexts were found in cultic spaces or within buildings with cultic spaces, as defined and identified by Gesell (1985) for Phaistos and Knossos. Given the functional nature of these vessels, perhaps this is not surprising. Many of these types, such as stands, “sacred ewers,” rhyta, and askoi have long been thought to have been used as cultic implements (Nilsson 1950; Gesell 1985; Hoffmann 1989; Koehl 2006). That each vessel should prove unique and “one of a kind” may, perhaps, have been a function of the care devoted to the manufacture of these objects for religious purposes. While more work needs to be done on the contextual distribution of these ceramic skeuomorphs, for the sake of convenience at the moment, this group of vessel types will be referred to as “special vessels” due to their unique shapes and functions and their possible links to cultic contexts.

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23 Primary contexts are defined as contexts in which, as far as can be determined, the vessels were last used or deposited. This is in contrast to secondary contexts, such as, for example, a deposit used to dispose of material from other rooms before a rebuilding project. Examples of secondary contexts are the “West Polychrome Deposit” and “South Polychrome Deposit” at Knossos (MacGillivray 1998) and the Grande Frana at Phaistos (Levi 1976).
Once the group of “special vessels” are removed from the list of local shapes, one is left with straight-sided cups, goblets, tumblers, jugs, and jars—in other words, vessels used for pouring and drinking. Most of these vessel types have antecedents from earlier periods. Tumblers and simple goblets have a long history, and variations of these shapes occur as far back as EM IIA (Betancourt 1985:37, fig. 17). Many jug and jars shapes, too, begin earlier as jugs with beaked spouts or wide mouths have existed in some form as early as EM IIA and EM IIB as well (Betancourt 1985, figs. 17 jug, fig. 22, 26, 27), and bridge-spouted jars, although first occurring in their MM incarnation by MM IA, have antecedents going back to EM III or earlier (Betancourt 1985, figs. 34, 47). Other jar types that begin in the MM period, such as jars with flat rims or situla-like jars, although considered “new” shapes, are not so far removed from the shapes of other contemporary jars that it is likely that they, too, were local innovations. Even the straight-sided cup shape is a relatively recent invention in the Middle Minoan period, as it appears as early as MM IA (Momigliano 1991; Betancourt 1985). Thus, it would seem that, with the exception of the “special vessels,” most of the “metallic” ceramic vessels for whom no foreign metal parallels could be found were local shapes that were established at a time before the Middle Minoan period on Crete or were jars and jugs that were developed locally out of earlier antecedents.

The fact that the local shapes at the beginning of the Middle Minoan period were already in use by this time provides an interesting dichotomy between these vessels and the new shapes that appear in MM IB/MM IIA. The new vessel types (with the exception of the “special” vessels) all seem to have been inspired by “foreign” shapes—i.e., semi-globular cups, carinated cups, demitasses, kantharoi, bowl types with two handles, and new tumbler and goblet shapes. All of these vessels can be classified as fine tablewares useful for drinking and preparing beverages. As it will be argued below (6.III.2 Function of Metal Vessels), metal vessels were used as fine tablewares during banquets which
involved drinking and feasting. It also appears that the metal vessels (and their skeuomorphs) may have been used and decorated as sets (see 6.III.1 Ceramic Vessel Sets). If, indeed, most of the new shapes used for drinking and mixing beverages were imported from Anatolia, one wonders whether they were not imported as “drinking sets.” If this were so, then, one also wonders whether some of the rituals and behaviors associated with the drinking of wine also did not come from Anatolia as well. Wine was one of the commodities that was also exported from the karum at Kültepe to Assur (Larsen 1974; 1987; Gorny 1996). Perhaps wine was also part of the exchange of commodities along with the silver vessels meant to be used with it? The case example of the import of porcelain vessels from China and Japan to Europe during the 17th to 19th centuries CE indicates that the Europeans also adopted the social habit of drinking tea along with the porcelain (Emerson, Chen, and Gates 2000). On the other hand, even though the Europeans had adopted the implements and the habit of drinking tea, the behaviors surrounding this beverage were quickly adapted and transformed to culture-specific rituals in order to meet their own societal needs. This should provide a warning that, if the Minoans had indeed imported “drinking sets” (and perhaps the liquid to go with them) from sites in Anatolia, it would not be possible to tell from the material alone if they also had adopted the drinking behaviors that accompanied the drinking sets.

Some of the vessel types lacking among the vessels at Tôd are pouring implements, like jars or jugs. Most of the other major shapes represented at Tôd (semi-globular cups, bowl types, demitasses, tumblers, kantharoi), however, are found in skeuomorphic form on Crete. If jugs and jars were once part of the standard collection of silver “drinking vessels” from abroad, one imagines that remains of these vessels would have been found either at Tôd—a seemingly self-contained group of vessels—or in
Anatolia. However, they were not.²⁴ The only metal jugs or jars of the same type as the Middle Minoan ceramic jugs and jars at Knossos and Phaistos were found in the Shaft Graves or on Crete itself. The lack of extant metal jugs and jars in foreign MBA contexts may perhaps explain the persistent use of local jar and jug shapes into the Middle Minoan period at the same time that “new” drinking shapes seemingly came into vogue. Either jugs and jars were not part of the foreign “drinking set” and, hence, the Minoans continued to use their own pouring implements, or the Minoans had their own drinking rituals (that included local implements and, perhaps, beverages) and did not need to import the foreign pouring utensils (or beverages). The fact that it appears as if the Minoans had imported a whole new set of drinking and feasting implements from abroad, except for pouring vessels might also explain the “metallization” of the bridge-spouted jar (and perhaps other jugs and jars types)—originally a “ceramic form”—sometime at the beginning of the MM period (perhaps MM IIA). In order to complement the newly imported metal drinking set from abroad, perhaps the pouring implements were now made from metal.

6.III FUNCTION OF METAL VESSELS AND CERAMIC SKEUOMORPHS

In the previous section, the effort largely centered on identifying the origins of the “metallic” ceramic shapes found at Knossos and Phaistos. In this section, the focus is more on the function of the these shapes/types. According to the model proposed in Chapter 2, skeuomorphs occupy the same functions and purposes as their prototypes. Therefore, by analyzing the contexts and the functions of the ceramic imitations, one may

²⁴ The only pouring vessels with parallels from abroad would be the teapots from Byblos, if, indeed, they were “Anatolian.” These teapots were not found as part of a “set.” Teapots shapes have a long history on Crete and were not new shapes in the Middle Minoan period. It is possible that the teapot may have been replaced by bridge-spouted jars in this period.
also arrive at conclusions regarding the function of the metal vessels as well. This section concentrates on the function of the ceramic types, whereas section 6.III.2 discusses the possible functions of metal vessels, based on the analysis of the function of their skeuomorphs.

6.III.1 CERAMIC VESSEL SETS

In addition to recognizing “metallic” features on certain ceramic vessels, it was also noted that very similar decorative features occur on various vessel types. This fact has been observed by scholars long before now, but most of the discussion regarding “similar-looking” pottery in the Middle Minoan period, when not used for establishing chronological links between phases and sites, has focused on identifying pottery workshops within Crete (Pelagatti 1961–1962; Zois 1968:261; Foster 1982:59–72; Poursat 1984; Walberg 1981:73–75; 1987; MacGillivray 1987; Floyd 1997; Carinci 1997). For example, Pelagatti (1961–1962) has identified five “workshops” at Phaistos and MacGillivray has noted the presence of at least six different “workshops” at Knossos, based on the shared motifs on various vessel types (1987:274–276). What is assumed in these studies is that pottery made in the same way with the same motifs and similar decorative techniques must have been manufactured at the same production center—perhaps, even by the same artist (MacGillivray 1987:274)—and that, furthermore, these production centers (i.e., the workshops) were necessarily located at the site where the similar-looking pottery groups appear (cf. Day and Wilson 1998:353). While there is no denying that pottery types fashioned in the same manner were likely manufactured at the same location, the assumption that each group of similar-looking ceramics necessarily consisted of their own workshop is not taking into account other socio-economic explanations for their presence.
Rather than regarding these similar-looking pottery groups as representative of workshops, this study suggests an alternate interpretation of the material. As will be demonstrated below, identical-looking surface treatments are consistently applied to the same pairing of vessel types (e.g., bridge-spouted jars and cups) or to pottery types that might conceivably have formed a functional pairing (e.g., basin and ewers). This pattern, then, would seem to suggest that pottery vessels were decorated in a way to evoke in the mind of the viewer a connection between the types, perhaps in what can be described as “vessel sets.” The following section examines this possibility, by describing some of the vessel types that appear to have been decorated in the same manner. Of course, not all similar-looking pottery groups need necessarily to have been composed of skeuomorphic pottery types, nor do all functional groups necessarily “look alike.” Therefore, only those main pottery group pairings that have been identified so far from among the ceramic imitations of metal vessels are presented here.

Hand-washing: Basins, Ewers, and Stands

A Linear B tablet from Knossos (KN 93) suggests the functional link between some basins and ewers (Ventris and Chadwick 1956:325, fig. 17; Evans 1928:633, fig. 397). Thought to represent an inventory of separate sets of metal vessels (Evans 1929:633), perhaps representing palatial furnishings (Ventris and Chadwick 1956:325), the tablet displays two sets of vessels. The set on the right includes a basin with a high-looped handle (ideogram 208, Ventris and Chadwick 1956:324, fig. 16) and a ewer with a flat rim (ideogram 205, Ventris and Chadwick 1956:324, fig. 16). The vessel set on the left also consists of a basin and an ewer—of different types than those on the right—as well as a conical bowl with horizontal handles. If indeed these two groupings of objects do, in fact, represent sets of metal vessels, one would expect to find basins and ewers together.

25 MacGillivray (1987:274) does refer to similar-looking pottery groups as “sets,” but still discusses these groups largely within the framework of “workshops”.

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in the same archaeological contexts. As a matter of fact, these two types of objects do occur together, not only as metal sets, but also in ceramic.

A group of metal basins and an ewer were found together in the “Northwest Treasure House” at Knossos (Evans 1928:637–647). Charred wood within the deposit suggests that the metal vessels were stored together, perhaps in a wooden chest (Evans 1928:637). Within this deposit was one plain basin, three other basins with either sacred ivy, foliate, or waz-lilies designs on their rims, as well as a bronze ewer decorated with loops and ribbing (Evans 1928:637–647, figs. 402–405, 407, 410–411). In style and decoration, the ewer and basin with foliate bands from this deposit parallel the silver ewer and round cup (RD CUP 1) found in Shaft Grave V at Mycenae (Karo 1930, pl. CXXXIV; also Davis 1977:149–155, fig. 120). The ewer from Shaft Grave V is very similar in size and decoration to the ewer at Knossos. The only difference lies in the choice of material (bronze vs. silver) and the choice of repoussé design on the shoulder. Whereas the Knossos example has running loops, the Mycenaean specimen has large spirals and an arcade. Both, however, feature vertical ribbing in the open spaces of the design. The rounded cup is even more similar in appearance to the “Northwest Treasure House” basin with foliate band. Both vessels have the same design around the rim. They are so alike that it is thought that both vessels may have been made at the same workshop (Karo 1930:235). The only apparent difference between them is their size. However, this is not surprising, as the rounded cup of this sort appears to have been the functional equivalent on the mainland of the Cretan basin (see under BAS 1). Given the similarity between the basin and ewer in the “Northwest Treasure House,” perhaps the two vessels in the Shaft Grave also represented a set as well.26

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26 Whereas the rounded cup and the silver ewer were found with gilding and gold plate intact (Schliemann 1878:316–317, no. 478; also Davis 1977:149–151, 157) and the vessels found at Knossos were not, it is highly likely that these latter specimens were also once gilded as well.
Further evidence that basins and ewers were conceived as a set is suggested by the discovery of a large group of bronze vessels in the so-called “Tomb of the Tripod Hearth” at Zapher Papoura, near Knossos, dated to the LM III (Evans 1906:34–45, fig. 33, pl. LXXXIX [55:1]). Of all the bronze implements in the tomb, only the ewer, the shallow basin, and a lamp were decorated with a cross-hatched, reticulated pattern (see Evans 1928:634, fig. 398b:1). The other vessels were left plain. The identical decoration on the basin and ewer (and perhaps also the lamp) would serve to highlight their pairing.

Ceramic vessel sets also seem to have been marked by their similar surface treatment. One example of a ceramic basin and ewer set was found at Knossos. It includes a set of vessels in what Evans termed the “creamy-bordered ware” group (Evans 1935:120–121, pl. XXIX [55:2]). The vessels are characterized by the use of a heavy white paint, sporadic use of red for details, and cut-out rims with either impressed shell, spiral, or plant life. The “creamy-bordered” group is comprised of a series of three or more identically painted ewers (MacGillivray 1998, pl. 90:542; pls. 91:543–545 [51:17]), a series of basins with cut-out and stamped rims (Evans 1935, pl. XXIXa, b, e [55:2]; also MacGillivray 1998, pl. 91 nos. 548–551 [36:5]) and, perhaps, a free-standing ceramic flower (see Evans 1935, pl. XXIX [55:2]). One of the basins is called a “stand” and resembles the other large basin/stand with molded torsional ridges on the underside (Evans 1935:121, pl. XXX [36:7]). Due to the smaller diameter of some of the “basin” fragments with cut-out rims, Koehl includes three “creamy-bordered” vessels in his list of rhyta from the Aegean (Koehl 2006:85, nos. 79–81). Presumably, he believes that they are of the same sort as the rhyton with cut-out rim from Phaistos (Levi 1976, pl. XLVb [53:11]). The metallic features of this group include the cut-away petals of one basin, the repoussé spirals on another basin, the torus rings and protuberances on the ewers, and the general “thick white creamy wash” that was applied to this group of vessels, perhaps in
imitation of the gilding on the originals (see 3.II.2 Torus Rings; 3.II.3 Cut-out rims; 5.II Basins).

With the exception of these “rhyta” sherds, the rest of the vessel types were all found within the “West Polychrome Deposits” at Knossos (MacGillivray 1998:33–34). They date to MM IIB–MM IIIA. This is slightly earlier than the date of the metal examples in the “Northwest Treasure House” and the examples in Shaft Grave V at Mycenae, which respectively are traditionally dated to MM IIIB–LM IA and MH III–LH I.27

The function of the basin and ewer vessel set has been preserved through textual evidence. A Linear B tablet from Pylos records the name of the ewer type as qe-re-na28 (Ventris and Chadwick 1956:324, ideogram 204). In ancient Greek, the holy water used to wash or sprinkle one’s hands before a sacrifice was called χερνίψ and the basin used to wash one’s hand the χέρνιβον (Liddle and Scott 1994:782).29 The chernibon (χέρνιβον) was also used for more prosaic reasons, such as washing one’s hands before (and after) a

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27 However, see above under 6.II.3 Origins. Shaft Graves at Mycenae for a discussion about the possible earlier date of Shaft Grave V. If the earliest material in SG V was deposited in MM IIIB–MM IIIA, this would imply that the ceramic vessels in the WPD and the metal vessels from the grave would date to the same period.

28 A recent translation of the term qe-re-na has the term meaning “wicker-work basket” or, by extension, any vessel “covered by a wicker-work design of a basket.” At the same time, the ideogram for the term is a “kind of pitcher with a handle” (Massouridis 2005:140).” The two terms need not be exclusive. A stone example of an ewer from Knossos is carved into a plait-work around the body (Evans 1921, fig. 296; Warren 1969:43, P249). The plait work looks like an imitation of wicker work. Thus, it is possible that some ewers (perhaps more than are suspected) were wrapped in wicker-work.

29 Pollux (Onomasticon 6.92) does, however, say that the term χειρόνιπτρον encompassed both the term for the jug (πρόχος) and the basin (λέβης).
meal. For example, the Odyssey features formulaic scenes of hand washing before a feast, such as the following:\(^{30}\)

Then a handmaiden brought water for their hands in a fair pitcher of gold, and poured it over a silver basin (*chernibon*) for them to wash, and beside them drew up a polished table (Od. 1.136-139).

Thus, it seems as if the basin and ewer were used together to cleanse one’s hands before a ritual or meal. The high spout of the ewer requires it to be lifted high and tipped forward (an action that may have been incorporated in rituals involving libations). The basin was meant to catch the water as it poured over someone’s hands. The action of holding the basin as well as pouring the water from the ewer almost guarantees that two people had to carry out the operation—if the basin was being carried, that is.

If the basin was used to hold the water poured over the hands, one can imagine that the basin would become very heavy. For the sake of convenience, perhaps the basin was set on a stand of some sort. At times, rather than having two separate pieces, the ceramic bowl/basin and the stand may have been built as one (see for example Evans 1921, fig. 133e). The handle on the metal basins may also have disappeared, as there was no longer any need to carry the vessel. This may explain the shape of the “creamy-bordered” basin/stand with what looks like a broken pedestal underneath (Evans 1935:121, fig. 88 [36:7 left]) and the fact that some stands at Phaistos have holes in the center of the bowl, perhaps to let the water flow through to the ground (e.g., Pernier 1935, pl. XXIIa, XXIIb; Levi 1976, pls. 21c, 61b, 61c). Perhaps it is not a coincidence, then, that, besides two rhyta (Levi 1976, pl. XLVb [53:11]; Evans 1935, fig. 86, pl. XXIXb [55:2 top left]) and one cylindrical spouted jar (JAR 1) with petaloid rims (Levi 1976, pl. XLIb [51:1], the other other ceramic vessels with cut-out petal rims are basins

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\(^{30}\) Other examples include *Od*. 4.52, *Od*. 15.135, *Il*. 24.304. For more information about the chernibon, see Marinatos 1929 and Smith et al. 1980 under “Chernibon.”
and stands. Either basins and stands were made to look alike so that they could be used as a set (therefore, both the stand and basin having petaloid rims), or it was important for the receptive part of the vessel (either the basin set on a plain stand, or the bowl part of the stand) to resemble a flower with petals. One does not need to stretch the imagery too far to imagine the bowl part of the vessel as representing the head of the flower, the pedestal as the stem, and the wide foot as the ground from which the flower grows.

Large ceramic basins with wide rims are mainly known from Knossos. Only a couple of basins of the same sort were reported from Phaistos (e.g., Levi 1976, pl. 184).31 It is possible that hand washing and purification were carried out at this latter site with different types of vessels. An ewer (JUG 1; Levi 1976, pl. XXVIIb [55:4]) was found at Phaistos in the same room (LV) as the stand with the flower appliqués32 (STD 1; Levi 1976, pl. XXVIIa [55:3]). These two vessels had the same checkerboard band around the body. Incidentally, two carinated cups also had the same motif. One was found not too far away, in room 11 (Levi 1976, pl. 131d [55:5]) whereas the other was found in room XCIV of House C (Levi 1976, pl. 133g). Perhaps all four vessels originally belonged to the same “set.” If these vessels were used together, perhaps the stand with deep bowl acted as the receptacle for the water instead of a basin.33

31 Incidentally, this basin from Phaistos also had a creamy-bordered cut-out petal rim, just like the examples from Knossos.

32 This object has cut-out petals around its base and painted motifs around the rim that resemble cut-out petals.

33 Incidentally, another offering stand (STD 2) was found in the same room as the chalice and ewer (Levi 1976, pl. XXVIIc). It too had a frieze of cut-out petals running around the rim and the base, painted in a creamy-white color. Even though it was not painted with a checkerboard motif, the petal frieze would seem to link it to the chalice, with its own petal cut-outs around the base, its painted “petals” around the rim, and the actual ceramic flower appliqués.
Pouring and Drinking: Bridge-spouted Jars and Cups

The evidence for the pairing of bridge-spouted jars and cups can only be drawn from the ceramic imitations, as unfortunately, no metal examples of bridge-spouted jars or other Middle Minoan vessel sets have been found. Fortunately, there are many groupings of bridge-spouted jars and various cup types that share identical-looking surface treatments—many of which seem to be based on metallic inspirations. The following list presents some of the bridge-spouted jar and cups with similar decorative treatments that were found in the same contexts.

Ornamental bands with dots: A large group of bridge-spouted jars, as well as straight-sided cups (and a few semi-globular cups), were painted in a similar manner. All had painted ornamental band with dots motifs (see 4.IV.1 Bands with Dots) as well as either chevrons, foliate bands, or spirals. From one context, the MM IIA floor beneath the “Room of the Olive Press,” MacGillivray estimates that 20 out of 31 of the bridge-spouted jars from this context belonged to “sets” (1987:274–276, fig. 1). Another large group of similarly-painted jars and cups were found in the “West Polychrome Deposits” (WPD; pottery within koulouras and surrounding area), a context that probably represents the material dumped into the koulouras from destroyed structures nearby after an earthquake in MM IIB, perhaps some sherds of earlier material were also found within the deposit. MacGillivray (1998:33) states that some EM III-MM IA pottery from the Houses below the koulouras was probably mixed with the WPD material, but this date seems too early for the “earliest” skeuomorphs in WPD, unless some MM IB sherds were found within the early Houses material. If, as it seems, the koulouras were filled in by material coming from the palaces, then it is also possible that some stray MMIB or MM IIA vessels may also have been cleared at the same time as the majority of the MM IIB–MM IIIA material from the palaces.

34 Some of the pottery found in the “West Polychrome Deposits” (WPD) is very similar in decoration to pottery shapes from Phaistos. The comparison between them would suggest that some of the pottery from WPD should be dated to an earlier period. For example, most semi-globular cups with ornamental bands of linked dots (SG CUP 5) are dated to MM IB, MM IIA, or MM II at Phaistos. The lone example from WPD makes it an anomaly (MacGillivray 1998, pl. 14:373). At Knossos, some types that are said to be “firmly placed in the MM IB period,” such as a tall elongated tumbler (MacGillivray 1998:69 Type 4 tumbler) were also found in the WPD (MacGillivray 1998, pl. 72:308). This suggests that mixed with the pottery that was dumped into the koulouras after the earthquake in MM IIB, perhaps some sherds of earlier material were also within the deposit. MacGillivray (1998:33) states that some EM III-MM IA pottery from the Houses below the koulouras was probably mixed with the WPD material, but this date seems too early for the “earliest” skeuomorphs in WPD, unless some MM IB sherds were found within the early Houses material. If, as it seems, the koulouras were filled in by material coming from the palaces, then it is also possible that some stray MMIB or MM IIA vessels may also have been cleared at the same time as the majority of the MM IIB–MM IIIA material from the palaces.
earthquake in MM IIB (MacGillivray 1998:33). While most of the pottery from within these contexts was stylistically dated to MM IIB–MM IIIA, it is possible that some earlier material was also deposited there. If this were so, then some of the straight-sided cups from the WPD and some of the BSJ from the “Royal Pottery Stores” could have potentially formed sets as well. Two sets of pairings from within these deposits include a BSJ and a SS CUP with an orange ornamental band (with red dots) set over large black and white chevrons (MacGillivray 1998, pl. 30:995 and 148:995 [55:7] with pl. 28:947 and 139:947 [55:6]; both from the “Royal Pottery Stores”) and a BSJ and SS CUP with bands of white circles and a large foliate band motif (MacGillivray 1998, pl. 15:379 [55:8] and pl. 10:314 [55:9]; both from the WPD).

*Vertical lines:* A BSJ (Levi 1976, pl. 104a [55:10]) and a number of small carinated cups with painted vertical lines evocative of flutes were found in the Southwest Quarter of the palace, either in room IL (Levi 1976, pls. 134a [55:13], 134d [55:12]) or in room LII, nearby (Levi 1952–1954, fig. 110d; Levi 1976, pl. 134b [55:11]).

*“Coffee bean” shapes:* At times, a small jar or a small jug took the place of the bridge-spouted jar. This was the apparently the case for two sets of jugs and cups with “coffee bean” shapes. This “coffee bean” motif (two oblong crescents facing each other) has been interpreted as representing inlay work (see 4.VII Inlay and Enameling). One set may have consisted of a jug with a flat rim and torus ring (Levi 1976, pl. XLIVa [55:14]) and a carinated cup with the same decoration (Levi 1976, pl. 133i [55:15]). These were found in rooms L and LI, respectively. Another carinated cup with the same “coffee bean” shapes (Levi 1976, pl. LIIa [55:16]) as the other two vessels was found in House C (in room XCIV), and, perhaps, it, too, belonged to the same set.35 Perhaps related to the “coffee

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35 A fragment of a cup was also found at Knossos with what looks like a “derived” version of the “coffee bean” motif (MacKenzie 1903, pl. IV:6 [33:4]). If indeed this represents the same motif, perhaps, this fragment shows that two sets of ceramic vessels may have been produced, one for Knossos and one for Phaistos.
bean” motif was the decoration on another set consisting of jug and cup. On these vessels, the oblong shapes are more numerous and filled in with two dots instead of crescent shapes. It is reminiscent of the “coffee bean” motif, but not exact. Again, a jug, a cup, and, possibly a bowl were decorated in the same way. The small carinated cup (Levi 1976, pl. 133h [55:17]) was found in the bench of room IL—a room near rooms L and LI—and the jug was discovered in room XXV not too far away (Pernier 1935, fig. 226 bottom middle [55:18]). A bowl was apparently found in the same room as this latter jug (Pernier 1935, fig. 226 bottom left). Although the decoration is not the exact match of the jug, the white and dark “flowers” on an orange (?) background gives the same overall impression as the decoration on the jug. Perhaps it too belonged to the same set as the jug and cup.

Repoussé shells: A jug with torus ring (Levi 1977, pl. 77a [55:19]) and SS CUP with repoussé shells (Pernier 1935, pl. XXXb [55:20]) were found in the same building at Phaistos. The jar was found in room LV and the cup in room XIX of the Southwest Quarter of the palace. Given the unique nature of this decoration, it is hard to envisage these two vessels not belonging to each other. Similar-looking cups were also found at Knossos and Palaikastro (Bosanquet and Dawkins 1923:16, pl. 11c; also Evans 1935, figs. 84a, 85; also MacGillivray 1998, pls. 19:433 and 82:433 [55:21]), which may indicate that several ceramic (or metal?) sets were made for different sites.

Another set of similar-looking bridge-spouted jars and cups were, unfortunately, not found together in the same context or building. Therefore, the claim that these objects once belonged to ceramic vessel sets is more tenuous than those above. Nevertheless, two things distinguish these examples—the decorative treatment of these vessels is unique unto themselves, and it happens that the decorative treatments were only applied to bridge-spouted jars and cups. If the decoration was randomly applied, then it is likely that the decorative treatments would have appeared on more than just two vessel types.
Ideally, every similar-looking pair of vessels would have been found \textit{in situ} in their primary contexts. Unfortunately, due to depositional processes, it is likely that many sets would have been divided and dispersed over time. Thus, assuming the possibility that similar-looking pottery groups were once meant to be together, but got split up in time, the following section lists some of the pottery types that may have belonged to sets as well.

\textit{Repoussé spirals:} A bridge-spouted jar (Pernier 1935, pl. XXXV [56:1]) and a semi-globular cup (Pernier 1935, pl. XXIVa [56:2]), from rooms XXIII and VII, respectively, were found at Phaistos. The distinguishing characteristic of these vessels are the two rows of small spirals/semi-circles that were stamped on the surface. Fragments of bowls with a similar decoration were found at Knossos (MacGillivray 1998, pls. 19:437 and 83:435–439 [56:3]) as well as Palaikastro (Mackenzie 1903:16, pl. 11a). Just like the vessels with repoussé shells, mentioned above, perhaps several sets were made for different sites.

\textit{Repoussé circles:} A bridge-spouted jar (Levi and Carinci 1988, pl. 57b [56:4]) and a semi-globular cup (Levi 1976, pl. 131p [56:5]), each featuring repoussé circles, were found at Phaistos. The bridge-spouted jar was found in room LII, and the cup was found not too far away, under room 11. A fragment of a similar type bowl was also found at Knossos (MacGillivray 1998, pls. 19:430 and 82:430 [56:6]), perhaps suggesting that more than one metal vessel set was made, one for Phaistos and one for Knossos.

\textit{Hammered” decoration:} A small number of vessel types were intentionally made to resemble “hammered” sections. These include bridge-spouted jars (Levi 1952–1954, fig. 109e [56:8]; Levi 1976, pl. XXXIXd [56:7]), two demitasses (Levi 1976, pls. 123c [56:9], XXIIIa), and a jar with a loop handle (Levi 1976, pl. 116f [56:10]). The vessels were found in different parts of the site, but perhaps they were once used together.
Enamelled rosettes: A bridge-spouted jar with a rosette motif was found in a context under room 11 at Phaistos (Levi 1976, pl. 110d [56:11]). It is possible that the bridge-spouted jar was paired with a carinated cup from the same room that—although not in reserve—did have a rosette motif in a “medallion” (Levi 1976, pl. 131n [56:12]). Other vessels with the “enameled” rosette from Phaistos include a pilgrim flask (Levi 1976, pl. 76k) and a shallow basin painted a creamy white (BAS 2; Levi 1976, pl. 60d). The basin and the pilgrim flask from Phaistos were found in rooms LV and LIV, respectively. It is not clear if the bridge-spouted jar and the cup once belonged to a set with the pilgrim flasks and the basin. Perhaps, given the relative closeness of their find contexts, the pilgrim flask and the basin from Phaistos may have once been used together.

From this list, while it is apparent that the conditions are not ideal for finding many “sets” in situ, it does appear as if there is a tendency for unique decorative features to occur on limited numbers of vessel types. If indeed this consistent pairing of vessels does denote a functional pairing, then, perhaps a hypothesis may be put forward regarding the function of these skeuomorphs. As “metallic” types useful for pouring and drinking, perhaps, these functional pairs are mimicking pairings of metal vessels with the same function. That is to say, perhaps the skeuomorphs represent metal “drinking sets.”

In the section below, it is argued that many metal vessels (and their skeuomorphs) were used during occasions that featured feasting and drinking (see 6.III.2 Function of Metal Vessels). Certainly, as a possible drinking set, the bridge-spouted jar and its paired cup would have been eminently useful during banqueting and drinking ceremonies. That these were the only vessels that were used during these events, however, is unlikely. A quick summary of the skeuomorphic vessel types (see Table 2) reveals that the majority

36 See also an egg-shell thin semi-globular cup from the Royal Pottery Stores at Knossos (Evans 1921, 241, pl. IIa [56:13]; also MacGillivray 1998, pl. 103:617), which is very similar in appearance to this jar.

37 See also an almost identical pilgrim flask from Knossos (MacGillivray 1998, pl. 20:570, 571, 572).
of the emulated vessels represent fine tablewares—useful for drinking (all manner of cups, tumblers, goblets, chalices), pouring (small jars, bridge-spouted jars, teapots), and mixing (bowls, kantharoi?)—or specialized vessel types that were likely used for cultic purposes (see also 6.III.2 Function of Metal Vessels). Although some other “similar-looking” groups did exist, among these vessel types, however, none occur as frequently and as consistently as the pairing of the (bridge-spouted) jar and the cup. One may perhaps attribute this pairing of decorative sets as coincidental, or, as it is posited here, suggest that the pairing was intentional.

Bridge-spouted jars are found in relatively large numbers—for a pouring type. Usually jars or jugs occur less frequently than the vessels used to drink from them. Also, given that, in most cases, bridge-spouted jars were paired with one, perhaps, two cups (that can be determined), perhaps the specific drinking set that is represented by this pairing represents an individual’s personal set—that is, a set owned by (or loaned to) an individual for drinking during feasts. According to some accounts in the *Iliad*, great personages owned their own cup, which they brought out for special occasions. For example, speaking of Nestor’s “… beauteous cup, that the old man had brought from home, studded with bosses of gold; four were the handles thereof, and about each twain doves were feeding, while below were two supports” (*Hom. II*. 11.634–635). If, indeed, some personages during the Middle Minoan period at the palaces of Knossos and Phaistos brought or were loaned their own drinking set, this would explain the bountiful examples of “metallicized” bridge-spouted jars and cups that were each made with a different metallic decorative technique. It is as if each were made to be unique,

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38 This does not mean that the two groups were mutually exclusive. Tablewares could have been used for religious purposes, and “cultic” vessels could have been used during religious feasts.

39 For example: Group 1: “Ecossais” decoration: bridge-spouted jars (Levi 1976, pls. 107c, 110l), bowl (Levi 1957–1958, fig. 150e), and carinated cup (MacGillivray 1998, pl. 50:170). Group 2: bridge-spouted jar with many large white flowers (Banti 1939–1940, fig. 9b) and a rhyton with the same pattern (MacGillivray 1998, pl. 51:227).
noticeable, and personal. As differentiated styles of consumption (including drinking vessels) was a characteristic of “diacritical feasts,” in which each participant in the feast competed for status and prestige (see below, under 6.III.2 Function of Metal Vessels), the use of “individualized” drinking sets would have set each participant apart while at the same time allowing them to signal their elite status membership (Dietler 1996:98).

The pairing among the other “metallic” skeuomorphs may perhaps be a function of their use in the feast. Ewers and basins may have been used to wash the hands of the guest before the feast (see 6.III.1 Ceramic Vessel Sets); mixing implements would have been used by the host to prepare the drink; and tumblers, goblets, chalices may have had other uses that are unknown at this time.40 The other “special” vessels may have been used in specific cultic rituals, which also would have likely occurred during feasting ceremonies (Dietler 1996).

6.III.2 FUNCTION OF METAL VESSELS

Pursuant to the distribution of the “metallic” features of certain ceramic skeuomorphs, the following section discusses some of the possible uses of metal vessels in the Middle Minoan period at the sites of Knossos and Phaistos.

Metal Vessels as Plate

As discussed above, most of the metal vessel parallels (and the decoration of the skeuomorphs alluding to their metal prototypes) would suggest that the vessels that were emulated were made from gold and/or silver, or else bronze decorated with fine gold trim. As fine tablewares made from gold and silver, the metal vessels at the palaces were

40 Of all the types of vessels with “stone motifs,” tumblers, goblets, and chalices feature highly. Chalices and goblets were also found in stone as well. If, as it has been argued in section 6.III.2 Function of Metal Vessels, the use of stone motifs was considered an “archaic” trait, then perhaps these three vessel types had some religious function that are not aware of at this moment.
likely used in the same way that fine metal plate was used in later periods.\textsuperscript{41} In essence, especially in pre-monetary societies, plate was portable wealth. Silver and gold tablewares were often rendered in the prevailing weight standards of the day (at Mari in the MBA: Dalley 2002:59, 62; Classical Greece: Vickers and Gill 1994:33–52), and were used as payment or gifts by the elite. One example of a text from Mari mentioning silver plate, lists nearly 73 silver vessels to be apportioned to various court officials for “payment” or to be used in court ceremonies (Vickers and Gill 1994:107). These silver vessels were often used in banquets—which were often the occasion for the presentation of gifts (including silverware) as well as the display of these vessels for all to see (Vickers and Gill 1994:107). Many of those gifts were also given to neighboring kings (Dunham 1989:214). As will be shown below, the ceramic imitations of metal vessels were also presumably used during banqueting and feasting; thus, the fine tablewares made from gold and silver may also have been displayed in the palaces at Knossos and Phaistos for all to see, at least during occasions of feasting or ritual events.\textsuperscript{42}

Metal Vessels as Status Objects

As has been stressed several times already, the ceramic skeuomorphs from Knossos and Phaistos likely represent the copies of fine metal tablewares and objects used for ritual purposes. Among the tablewares, cups are the most frequent and varied shapes, followed by bridge-spouted jars, jugs, ewers, and other drinking/pouring/preparing implements. Given this specialization in function and the overall quality of the skeuomorphs, it is unlikely that these objects were used in daily household activities. Rather, it is suggested

\begin{footnotesize}
\begin{itemize}
\item[41] In Europe at least, metal vessels were used as valuable plate up until the 19th century CE at least. Porcelain and more sophisticated banking methods may have put an end to the use of plate as a viable economic option.
\item[42] For example, the “Cupbearer” and Procession Fresco from Knossos, likely depicting a public ritual, depicts objects being carried by kilted youth. Some of these objects are thought to be metal vessels made from precious materials (Immerwahr 1990:88, 174–175, pl. 38–40).
\end{itemize}
\end{footnotesize}
that many of the ceramic skeuomorphs—and the objects that they represent—were used during special occasions marked by feasts. In this scenario, the metal vessels as markers of status and prestige, were being emulated for aspirational purposes.

Many studies have stressed the importance of drinking and eating, in general, and in communal feasting and drinking ceremonies, in particular, as a means of establishing and maintaining socio-political relationships among individuals within a group (Orlove and Rutz 1989; Hayden 1996; Dietler 1996; Hamilakis 1999; Dietler and Hayden 2001b; Wright 2004a). When conducted within in a society of individuals of approximately equal social standing, the sharing of food and drink provides the means of creating and strengthening the social bonds among the participants (Hayden 1996:128). Feasts of this kind tend to occur during ritual ceremonies, and the communal bond that results has the effect of reinforcing the sense of community and identity among the society (Hayden 1996:128; Wright 2004b). Among groups in which formal status distinctions exist, the differential access to food and drink serves to define and accentuate differences within the society. Feasting then becomes a competitive tool to acquire, legitimize, and reify access to power and prestige within the community (Hayden 1996; 2001; Dietler 1996). Although this competitive feasting may take different forms among different socio-political groups, the type of feasting that best typifies Minoan palatial society in the Middle Minoan period is the “diacritical feast” (Dietler 1996:98–99).

Diacritical feasting is a type of ritual practiced by the society’s elite in order to exclude lower classes, display status, and engage in rank competition within the elite group (Hayden 1996:129; Dietler 1996:98). This competition is expressed through stylistic differentiation rather than quantitative differences (Dietler 1996:98). Thus, feasts may be marked by rare or expensive foods, exotic and costly food service vessels and implements, or the complex and specialized knowledge in preparing and consuming these foods (Dietler 1996:98). While such rarified objects and specialized knowledge manages
to exclude the lower classes from direct elite status membership, at the same time, because this type of feasting relies upon style as the manner of distinction, the trappings of the feast are subject to emulation by those seeking to improve their status (Dietler 1996:98). Such emulation can be only be prevented by the imposition of sumptuary laws or by the control—through cost or limited access—of the accoutrements of the feast. In the absence of monopolization of these items, it is possible that the prestige and symbolic force of these objects may become “devalued,” prompting a shift in elite style as a means of reacting to the emulation (Dietler 1996:98; see also [3]).

Metal vessels, especially metal vessels wrought from silver and gold, were an excellent medium to express the prestige and status of elites during feasting and drinking occasions. Made from rare and costly materials that needed to be imported, metal vessels were not available to all members of the community and thus could be used as a means of excluding those who could not afford them. Imported vessels—and it has been suggested that many of the ceramic skeuomorphs dating to MM IB and MM IIA may have been from abroad (see 6.II Origins of Shapes)—were especially imbued with symbolism, increasing their social value (Helms 1993:3). The consumption of such “exotic” goods allowed the elite to “display knowledge, membership, and perhaps control of distant places and people” (Schoep 2006:53). The extraction and production of metals were conducted outside of the mining sites as well as frequently outside of the palatial sites (Nakou 1995:17). Therefore, control of this activity, access to the trade networks, and the “savoir faire” of the metallurgical process suggested a “powerful connection between this secret knowledge and the assertion of social power” as well (Nakou 1995:18). In addition to the manufacture of vessels, the rarest metals were used for personal adornment and weaponry. Weapons, in the form of ornate and elaborate daggers, swords, and knives, were themselves the embodiment of the (male) elite’s power to defend and coerce the rest of the members of the community. The use of metal during the feast—an occasion of
peace and the laying down of weapons—nevertheless, was able to evoke the coercive power of the sword, and, hence, of the individual yielding it.

For all these reasons, metal vessels were the perfect embodiment of the power, wealth, and prestige of the elite in Minoan society. Therefore, to own metal vessels was to signal that one belonged to this privileged class. As owning metal vessels was of importance in jostling for status and position in Minoan society (or at least one level of society), those individuals who were excluded from participating in the high-level exchange of metals or who are unable to access these elite materials and goods, may have turned to ceramic skeuomorphs as the stand-ins for the genuine metal vessels (Sherratt’s “sub-elite substitutes,” 1999:185; Knappett 2005) as their means of participating in these competitive “tournaments of value” (Appadurai 1986:21). Although not economic substitutes per se—as ceramic vessels could never replace the purchasing power of metal—through the process of “envaluation” of the ceramic proxies, the skeuomorphs themselves acquired over time some of the connotative attributes once only ascribed to metal vessels (Sherratt’s concept of “added-value goods,” 1994:62–63). As such, they could become status objects in themselves.

That ceramic skeuomorphs could have, in fact, become markers of social status and were used during feasting and ritual occasions is suggested by some preliminary studies into the contextual finds of “metallic” vessels. At Phaistos, where much material has been found in situ, a number of studies have examined the distribution of ceramic vessels within various contexts at the site (Speciale 2001; La Rosa 2000; Caloi 2007; Militello 2012). Several contexts contained large numbers of vessels, which, by the size of the assemblage, can be interpreted as collections of vessels to be used in some form of drinking/feasting capacity by a large number of individuals (Militello 2012:262). One assemblage, found in certain rooms of the Southwest Quarter of the palace (rooms IL, XXVII–XXVIII, LIII–LV), was composed of 10–20 “fineware” cups and two to three
times the number of conical cups and pouring vessels, mainly bridge-spouted jars, in plain wares (Militello 2012:262). These were found together with a collection of agrimi horns, pig bones, and ash deposits, suggesting the consumption of meals and beverages. Other deposits with large assemblages of vessels include a total of 9 cups and 24 conical cups from House L, a building thought due to its internal arrangement and furniture to have served as a communal place for gatherings (Militello 2012:256, 262), and the total of 81 cups, 146 conical cups, and 48 bridge-spouted jars from room XCV of House C (Militello 2012:262). A comparable number of cups (28) and conical cups (81) were also found next door, in room XCIV of the same building (Militello 2012:262). Based on the large numbers of vessels from House C, it is thought that this house served as the storage area for the pottery used in the presumed religious ceremonies centered around the causeways, Theatral Area, kouloures, baetyls of the Middle West Court next door (Militello 2012:256). The evidence from these ceramic deposits not only suggests, then, that large collections of drinking and pouring implements were being stored for public/religious occasions within certain rooms of the palace, but also that there existed a hierarchy in the quality of the ceramics used during these occasions.

Although alluded to in these reports to the nature of the “best quality” cups, the distribution of all the “metallic” shapes hereby discussed in this study (see Table 7) supports the observation that the “best quality” forms were, in all probability, emulations of metal vessels. According to the distribution of finds, the greatest variety of “metallic” vessels were concentrated in room IL and surrounding rooms in the same building complex as well as in House C. This is reflected by the observation that the distribution of Kamares Ware mainly occurs in two areas, the Southwest Quarter of the Palace and Room XCIV of House C (Militello 2012:258). The concentration of “metallic” wares in these two contexts is partially explained by the large number of finds in these two areas of the site (Militello 2012:250), but can not fully explain the concentration of the variety
of “metallic” forms in these contexts or the nature of the skeuomorphs: “special vessels” (rhyta, stands, ewers, bucket-jars) and painted tablewares (cups of all kinds, bowls, jugs, jars) made to resemble metallic prototypes. The diversity and character of the “metallic” vessels in these contexts suggest a purposeful relationship between “metallic” skeuomorphs and use of space.

All that is left of the metal vessels that were present in Middle Minoan society are the ceramic copies that were left behind. As referents to metal vessels as well as the means by which the a group of individuals participated in diacritical feasts, the spatial distribution of skeuomorphs may eventually prove useful for locating facilities in which feasting and drinking took place (Hayden 1996:138–139; Hamilakis 1996; Borgna 2004a; 2004b; Wright 2004a; 2004b; Knappett 2005). Perhaps it is not surprising that the finest skeuomorphs (much of what has been termed “Kamares Ware” in the literature) were found at the palace sites of Knossos and Phaistos, cultic sites, and a few other restricted contexts in the Middle Minoan period (Day and Wilson 1998:352).

The palaces, no matter what other functions are thought to have taken place there (Halstead 1981; Branigan 1987; Hägg and Marinatos 1987; Platon 1983; Hamilakis 2002), are sites where people likely gathered for ceremonial and ritual occasions (Gesell 1987; Moody 1987; Tomkins 2012; Militello 2012). And, even though there is a debate about whether elites may actually have lived in the palaces, there can be no denying that the palaces were the focus of this elite symbology. Therefore, this is where the elite would have entertained,

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43 By Kamares Ware, I refer to a pottery characterized by a black lustrous slipped surface with polychrome decoration, wheel-made, and frequently made egg-shell thin (MacGillivray 1986; 1998 contra Betancourt 1985).

44 Gesell (1987) provides a good analysis of the evidence for “public” and “private” spaces within the palaces at Phaistos, Knossos, and Malia. Undoubtedly, different ritual activities and feasting ceremonies would have happened in each space.
held ceremonial feasts during religious functions, and competed for status—among themselves as well as with the elite from other polities (Renfrew and Cherry 1986; Gesell 1987).

**Metal Vessels and Ritual Contexts**

In the analysis of the distribution of structural details by time period (see 6.1.1 Summary of Structural Details), it was noted that of all the structural details, the torus ring was the most consistent feature over time within a group of vessels of the same type. For example, the torus ring appears on almost every example of “sacred ewer” (JUG 1) and piriform rhyton type. The persistence of the torus ring—or any other “three-dimensional” feature—over time on a ceramic type is unusual. Usually, a structural detail, such as a clay rivet, for example, will appear on relatively few vessels for a limited time and then disappear from that vessel type shortly thereafter. The fact that the torus rings were retained and highlighted suggests that it was important to the Minoans to emphasize the “metallic” quality of these vessel types.

Perhaps one of the reasons the Minoans may have wanted to emphasize the “metallic” qualities of the ewer may have to do with the context in which these vessels were found. The majority of these vessels, when not found in secondary contexts, were found in buildings associated with cultic spaces and/or ritual activity, as per the criteria established by Gesell for the palaces of Knossos and Phaistos (1985:85–102, 121–132; 1987) as well as per the functional analysis of the spaces within the palaces (for Phaistos, see Speziale 2001; La Rosa 2000; Caloi 2007; Militello 2012). At Phaistos, the greatest variety of “metallic” vessels were found in the Southwest Quarter of the Palace as well as in House C (see Table 7 and above under Metal Vessels as Status Objects). These two areas of the site happen to have cultic/ritual associations. House C is thought to have been the storage space for the collection of vessels used in the religious ceremonies focused in
the Middle West Court (Militello 2012:256), and the rooms in the Southwest Quarter in which the greatest concentration and variety of “metallic” forms were found also happened to have the highest concentration of specialized cultic implements (especially in rooms LI, LIV, LIII–LV and IL; Militello 2012:263), such as the stand with flower appliqué (STD 1), a ewer with torus ring (JUG 1), a low stand with cut-out rims (STD 2), a globular rhyton with ornamental chevron bands (RHY 4); an ornate stand with cut-out rim and base (STD 3); a cylindrical spouted jar (JAR 1); and a bowl (BWL 2) and stand (STD 4) with women dancing around a presumed goddess figure. These “special vessels” were all imbued with “metallic” qualities. From this, perhaps one may suppose that the Minoans considered metal vessels a proper medium for conducting ritual ceremonies, and, consequently, made sure to emphasize the “metallic” qualities of the skeuomorphs that were used in the cultic contexts when no metal was available.

While the fact that the “special” skeuomorphs found in ritual contexts do indicate that metal seems to have been considered a proper medium for some cultic implements, this fact does not explain the persistence of the torus ring on ewers over the course of the Middle Minoan period. Many of these “special” vessels were unique; therefore, they appear only in one time period and are not repeated. Thus, the fact that ewers were used in ritual contexts does not alone explain the persistence of the torus ring.

That the torus ring was retained on certain vessel types may be explained if one envisages this feature as a “fixed” trait. This kind of trait is described here as any feature on a preservational skeuomorph that manages to evoke a time past and which is retained on an object for a longer period of time than on their contemporaries. That trait may be an allusion to the medium in which the original prototype was once made, a vestigial attribute that no longer functions in the same way as the original attribute, or any other symbolic feature whose purpose is to preserve a traditional form.
A connection with tradition is what the Minoans may have been trying to evoke with the persistence of the torus ring on certain ewers, jugs, and rhyta. The ewer shape, with its high beaked spout and pronounced torus ring, is a special shape that appears on Minoan cylinder seals (Reeves 2003, fig. 8.58), on Linear B clay tablets (Ventris and Chadwick 1956, table on p. 324, ideogram 205), and occurs in clay, stone, and metal on Crete and the mainland. Due to its special status and to its associations with cultic spaces, this shape has been called the “ritual ewer” whose function may have been to pour libations and cleanse instruments/hands before ceremonies (see 6.III.1 Ceramic Vessel Sets for more information). This ewer shape was evidently important in the Minoan (and Mycenaean) religion, as the vessel type continues long into the Late Minoan period and, arguably, into the Classical period as a vessel type known as a chernibon (see 6.III.1 Ceramic Vessel Sets). The contention here is that the torus ring was a trait that was intentionally (and continually) added to ritual vessel types (ewers, rhyta) in order to forge a connection with the past in cultic spaces.

Rituals are very important to humans to mark special occasions, to obtain social acceptance, to demonstrate respect or submission, to strengthen bonds between social groups, and to forge connections between humans and the divine, among other purposes (Malinowski 1948; Turner 1969; Rappaport 1999). Religious rituals, in particular, are suffused with concepts such as tradition, permanence, correctness, and the transcendence of time. What better symbol to use in a religious ritual than an object able to evoke past traditions, but still made from modern materials? The skeuomorph itself becomes a symbol of transcendence. It is a boundary object able to straddle the past and the present.

That ewers and rhyta with torus rings were not the only vessel types with preservational details used in religious contexts is evidenced by a number of other

45 The ewers found in the later Shaft Graves of this shape had repoussé torus rings. It is possible that these examples were local metal “counterfeits” of the Minoan shape.
Minoan religious items with these same traits. The skeuomorphs in these cases were identified as objects that reference media that one presupposes were used prior to the Middle Minoan period in Minoan society (an “archaic” trait). For example, a relatively large number of ceramic objects reference wicker work and basketry, materials that are traditionally thought to have been in use in the Neolithic, prior to the advent of pottery. In some cases, the vessels are fashioned into the shape of baskets (e.g., Marinatos and Hirmer 1960, pl. 84b; Levi 1976, pls. 116a, 116e, 117d; Fiandra 1990, figs. 24–25; Foster 1989:37, fig. 9), and in other cases, the vessels were probably molded around actual baskets to create three-dimensional basketry designs on the surface (Detournay and Poursat 1980:91). Wicker work was even portrayed in stone. A stone ewer was found at Knossos covered in a wicker-work pattern (Evans 1921, fig. 296; also Warren 1969:43, P249), a happy coincidence between the Linear B ideogram for the ewer type and a new interpretation of the term “qe-re-na,” which posits the meaning to be a “wicker-work basket” or by extension, any vessel “covered by a wicker-work design of a basket” (Massouridis 2005:140; see above, under 6.III.1 Ceramic Vessel Sets). That these objects were indeed used in religious contexts is indicated by the fact that many of the basket-shaped vessels were made into rhyta (Koehl 2006, pl. 49), by the context finds of the objects, and by the use of “baskets” in the religious scene on the Haghia Triada sarcophagus (Immerwahr 1990, pl. 50, side A).

Ceramic skeuomorphs with painted motifs resembling stone in the Middle Minoan only occur in a limited number of shapes: tumblers, chalices, goblets, carinated

46 For example, a clay basket-vase and basin were found in the east room and in the antechamber of the shrine at Anemospilia (Sakellarakis and Sapouna-Sakellarakis 1997). Two of these were found on the altar itself. “Outstanding amongst these is a big clay basket without parallel, found in the middle of the upper step of the altar.” It was engraved with Linear A inscription. “The clay basket is of exactly the same shape as the vessel that appears on the well-known relief vase fragment from Knossos, possibly the depiction of a peak sanctuary” (Sakellarakis and Sapouna-Sakellarakis 1997:290). The Linear A motif looks like a grain of wheat. Maybe that is what was in the basket? (Sakellarakis and Sapouna-Sakellarakis 1997:333, fig. 297).
cups, and bridge-spouted jars. The tumblers, chalices and footed goblets are all forms that have antecedents in the EM period (see Betancourt 1985, figs. 13, 17, 27, 34), and it appears as if the footed goblet was the most common drinking cup from this period (Momigliano 1990; Macdonald 2010:209). When new drinking behaviors were introduced in the Middle Minoan period, the function of the tumblers, goblets, and chalices may have been eclipsed by other drinking implements, but their “ancient” connotations may have been retained in some cultic rituals (Macdonald 2010:210). As some of these objects were made from stone “back then,” perhaps this method was preserved into the MM and LM periods.

In addition to shape, even the choice of painted stone motif on the ceramic skeuomorphs was indicative of “times past.” The painted stone motifs on the skeuomorphs take two forms: banded lines and variegated stone motifs. Stones that resemble the banded stone motif include banded tufa, calcite, limestone, marble, and some serpentine varieties (see Warren 1969:124–141 and plates). According to Warren, vessels made from banded stones were mainly popular during the late EM II to EM III/MM I period (1969:142). Even though serpentine continued in use past this time, the banded variety was less common in the Middle Minoan period. Thus, by deliberately painting the ceramic vessels with an “ancient” type of stone, the Minoan potters were evoking the stone vessels used in the past. The variegated stone motif could also have been a reference to “old-fashioned” vessels or to stone materials used for a select group of imported Egyptian vessels. Variegated stones included conglomerate, breccia, gabbro, and some serpentine types (see Warren 1969:124–141 and plates). Again, the use of these stones was most popular in the late EM II to EM III/MM I period (Warren 1969:142). If the variegated stone motif on the ceramic skeuomorphs referenced these local stones, this

47 That is, if the “white dots on a black ground” are excluded as stone motifs. It is highly likely that this motif was emulating metalwork. See under 6.11.3 Origins. Shaft Graves at Mycenae.
would be another case of evoking the use of past vessels. If, on the other hand, the motif is meant to represent a select few Egyptian stone vessels with variegated stone motifs, the intention in this case may simply have been the emulation of presumably prestigious imports.48

A final example of religious implements with “archaic” traits is the use of the “sacred knot” in Minoan religion. The sacred knot consisted of a strip of patterned cloth with fringes at the ends, which was looped into a knot at the middle and the ends left hanging. Sacred knots appear as motifs on pottery, and models of this object made in ivory and faience were found at Knossos, Zakros, and Mycenae. The knot appears on the “Parisienne” fresco fragment from Knossos at the back of the neck of a woman, who is interpreted as a priestess participating in a sacred rite of communion (Castleden 1990:136). According to Barber, who has studied the development of weaving techniques over the course of the Bronze Age, the “sacred knot” was woven in the simplest and most ancient textile manufacturing technique known in Europe, even though the textile industry had, by the Middle Minoan period, surpassed this technique in skill and use (Barber 1991:147). Thus, it would seem that the Minoans felt it was important to retain the “traditional” ways of weaving the sacred knot for use in ritual contexts.

As these examples demonstrate, imbuing sacred objects with preservational traits was not a random occurrence. Thus, even though ceramic ewers, jugs, and rhyta with clay torus rings may have existed alongside contemporary metal vessels with the same feature, the persistence of the torus ring on these clay examples—long into the Late Minoan period and beyond—indicates that the addition of this feature was an intentional strategy,

48 Most of the imported variegated stone vessels from Egypt were manufactured in the Predynastic and Old Kingdom periods (Aston 1994, fig. 21) and exported to Crete in MM III–LM I, one thousand years later than their date of manufacture (Pomerance 1973; McCullough 1997; Phillips 1991:37–44). Perhaps the Minoans were aware of the antiquity of these vessels, or even perhaps they were only aware of the longevity and antiquity Egyptian history through contact with Egypt and neighboring nations in contact with Egypt.
one meant to forge links between the gods and humans by conveying permanence, tradition, and the transcendence of time in ritual contexts.

6.IV EVALUATION OF THE MODEL

In Chapter 2, I offered a novel model of skeuomorphs based on the premise that these objects were the by-products of the underlying processes of emulation and imitation. In this section, I revisit the model and discuss some of the findings from Crete in light of the expectations outlined in the previous chapter and also in light of some of the chronological and contextual challenges offered by the archaeological record of Knossos and Phaistos.

According to the theoretical framework proposed here, I suggest that skeuomorphs were symbolic substitutes that acted on behalf of their prototypes in various types of contexts. Those skeuomorphs that embodied the properties of prestigious status items were deemed “aspirational,” whereas those whose purposes seemed to be the conservation of traditional technological features were labeled “preservational.” The most controversial aspect of this theory, perhaps, was the suggestion that the spectrum of differences apparent among individual skeuomorphs in any assemblage can be attributed to the repeated imitation of the original objects and their copies over time. Thus, in this scheme, it is assumed that, among a large group of skeuomorphs, the earliest would be the most “accurate” vis à vis their prototypes, whereas the least evocative would be the latest. If indeed there is merit to this statement, then, one should expect to see skeuomorphs at Knossos and Phaistos that meet the descriptive criteria for the varying groups of copies thought to occur at different “chronological stages” of the emulation and imitation cycle. That is to say, we should expect to see imitations, adaptations, and derivations at different moments in time.
Imitations and close adaptations were relatively easy to identify in the archaeological record. There was no question about their metallic quality. These vessel types were usually adorned with ceramic structural details or the surface of the vessel was rendered in a three-dimensional fashion. One of the most famous imitations on Crete must be the ceramic copy from the Isle of Christ, near Malia (van Effenterre and van Effenterre 1963:109, pl. XLIV:7882), of its metallic counterpart, a silver kantharos from Gournia (Boyd Hawes et al. 1908, col. pl. C1). In size, shape, and details, the two were almost exactly the alike—as close as a ceramic copy could be. There is no question that the metal vessel was the model for the ceramic one. In this case, one is fortunate to have the metal vessel to compare with the ceramic one. In most cases, this was not possible. Imitations more commonly came in the form of semi-globular bowls from Knossos, such as, for example, an egg-shell thin bowl with a double arcade (Evans 1921, fig. 183a:1); a bowl with repoussé gadroons (MacGillivray 1998, pl. 153:1031); and a bowl with vertical arcades (Warren and Hankey 1989, pl. 6A). The latter two are included on Table 8 as Examples 1 and 3, respectively, under the MM IB column. What is noticeable about these imitations is the lack of handles for each of them. For at least one of these examples (the bowl with the vertical arcades), this is most likely because the original metal bowl also did not have a handle. Consider the metal bowls of this sort from Tôd without handles (see e.g., Bisson de la Roque 1950, pls. XV:70604, 70605). Thus, these few bowls without handles were most likely direct copies of their metal counterparts. In the next column on Table 8 (MM II), one can see that the semi-globular vessels have now been transformed into cups due to the addition of a handle. That this happened quickly after the appearance of the imitations may perhaps be evidenced by the semi-globular cup (in Example 2) dating to the same period as the imitations (MM IB). Thus, it is likely that the semi-globular cup shape was a close adaptation of the semi-globular bowl shape. It

49 Although it is possible that the handles were not recovered, enough of the vessels were found for at least two of the examples to suggest that they were never there.
appears as if the Minoans were not comfortable with the bowl as a drinking implement and converted the shape into a cup to meet their own social and aesthetic needs.

The grafting of the handle on the semi-globular cup shape was not the only visible adaptation in the Cretan assemblage. It is possible that the small carinated cup was once originally a small kantharos shape. Consider the carinated “cup” with two handles from Knossos (Hogarth and Welch 1901, fig. 21 [45:2]) that looks like a smaller version of metal (Davis 1977, fig. 143) and ceramic kantharoi (Davis 1977, fig. 25). Early carinated cups (possibly MM IA) with one handle have the same shape and appearance as the one with two handles (Momigliano 1991, figs. 28:7, 28:8). These were likely adaptations of the original shape, but, in this case, rather than a handle being added, one was removed. Other forms that appear to have been grafted from different vessel shapes include the Vapheio cup, which is a combination of the straight-sided cup shape and the spool handle that likely first appeared on Crete on bowls, and the large basin with molded underside, which appears to be a cross between a bowl with torsional flutes and a large basin (Hogarth and Welch 1901, fig. 16; Evans 1921, suppl. pl. IIIb; 1935, fig. 88; Davis 1977, fig. 58). Of course, more examples of adaptations and imitations in the Middle Minoan period were found, but, for the sake of simplicity, one can say that most of the vessels with visible structural details and all of the ones with “plastic” decoration were most likely either imitations or early adaptations (see Table 2 for list of these vessel types).

As previous analysis of these objects has shown (see 6.1 and Tables 3 and 4), the ceramic vessels with “plastic” decoration or structural details are the very types of skeuomorphs that were found in the earliest contexts for any one type. In general, one set of skeuomorphs were dated to MM IB or MM IIA and another set during MM IIB–MM IIIA. The fact that the earliest dated vessels (for any one type) were the ones with the most metallic appearance conforms well with the model proposed here, which postulated
that *imitations* and close *adaptations* would have likely been the earliest skeuomorphs of any metal vessel type.

Complications with the model, however, arise when one has to define and date *derivations*. According to the model, derivations are skeuomorphs that appear to have “diluted” features (from the perspective of the original model). The decorative surface treatment of the derivations should be simpler, more standardized, generalized, or stylized. In this stage, the motifs that once represented a true metallic feature would likely to have entered the ceramic repertoire so that there would be a mix and matching of motifs with little regard for reproducing the original models. Ceramic forms that match this description were found. For example, see the cups under the second column (MM II) in Example 3 in Table 8. It is clear that the painted arches of the top cup reproduce the shape of the rounded flutes on the molded bowl (under column MM IB). The decoration on the two other bowls is simpler still. On the lowest bowl in the figure, the flutes are now rendered as separately painted arches and vertical lines. While still slightly evocative of fluting, the motif is now very simplified and diluted. The cup shown under the MM IIB column is potentially of the same date as those under the MM II column. It was found in a mixed context (“West Polychrome Deposit” at Knossos), and, stylistically, it looks “earlier” than the others (closer in appearance to the molded bowl), but due to the deposition history of the site, one will never know if it was made at the same time as the other bowls or later.  

Example 4 on Table 8 shows another example of derivative forms. The illustration shows a number of straight-sided cups dating to MM IIB and MM IIIA. In MM IIB, a large number of straight-sided cups shared motifs such as the spiral, the chevron, pendant

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50 If, however, one were to accept the basic theory that the earliest skeuomorphs were also the ones that look the most like presumed original prototype, then, perhaps by seriating the ceramics of any one type (from “sharpest” to ones with least accurate details), one could, in fact, better stylistically date some pottery forms found in mixed contexts.
semi-circles, floral bands, and simple bands. Already in this period, one suspects that all of these motifs were applied in a “mix and match” fashion, as so many cups existed, each with its own unique combination of motifs. That these motifs had now entered the ceramic repertoire is perhaps best illustrated by the lowest group of cups (Example 4 on Table 8). It appears that the foliate band (a motif usually applied to plain straight-sided cups) was applied to straight-sided cups with horizontal ridging—a new shape at this period. The grafting of motifs to already existing shapes fits well with the definition of the derivation.

Thus, the problem with derivations does not reside in finding ceramic examples that fit the profile of the model, but, rather, the problem stems from trying to define them. How does one concretize the point at which the derivation process may have begun in the archaeological record? For that matter, at what point does it end? It follows that, if one cannot conclusively point to an object and label it a “derivation,” how does one, then, date it?

The problem with identifying these kinds of skeuomorphs can be attributed to two factors: the emulation process itself and the unpredictability of the archaeological record. As emulation is a dynamic process, the similarity gradient between a prototype and its derived forms runs along a spectrum (see Figure 3). While derivations are technically defined as the point where a foreign surface treatment or profile is applied to a traditional form, in fact, it is very difficult to differentiate between forms in the middle of the spectrum—i.e., in differentiating between adaptations and derivations—especially in the archaeological record.

Many factors may also have influenced the process of emulation for each type. It is possible that certain types were copied more often, hence, prone to quicker changes and dilution than other types (Hodges 1965; Wood 1990:86); certain potters could have
been more accurate on one day and not another; and it is possible that certain ceramic forms were so popular that they underwent little change over time. Thus, various different pottery vessel types may have evinced little change and some much change. Also, there is no way of knowing how much time may have elapsed between each “stage.” As Examples 3 and 4 on Table 8 demonstrates, the “derived” forms could all potentially be dated to within the same time period (MM IIB), whereas the supposed “derived” forms in Example 4 potentially span two archaeological periods (MM IIB and MM IIIA).

As these examples demonstrate, the dating of derivations is conditional on the finesse of stratigraphical dating in an archaeological sample. Whereas it would be possible, say, to measure the time elapsed in yearly intervals for the for the case study of the emulation of Asian porcelains in 16th to 19th centuries Europe, this was not possible to do for the Middle Minoan assemblage. In conclusion, therefore, whereas *imitations*, *adaptations*, and *derivations* can be shown to exist, all the while demonstrating the tendency for these groups to behave as expected chronologically, there was no way of measuring time elapsed between individual iterations of skeuomorphs from the same type group.

Another facet of the model offered here was the suggestion that skeuomorphs occupy the same roles as their prototypes. Although much data could be gleaned from the analysis of the formal attributes of the “metallic” skeuomorphs of metal vessels from Knossos and Phaistos, much more information about the functions and purposes of the skeuomorphs (and hence their prototypes too) could theoretically be achieved through a contextual analysis of these artifacts. One of the challenges with working with an archaeological assemblage, however, is the degree of preservation of the finds in context. Finding skeuomorphs *in situ* would be the ideal when trying to determine the role and meaning behind these objects. Unfortunately, the archaeological record is not always so
obliging—as was the case at the sites of Knossos and Phaistos. Each of these sites has its own stratigraphic and excavation challenges.

One of the largest problems with the recovery of the Middle Minoan ceramic material at both Knossos and Phaistos was the lack of preservation of this phase of the palace. The construction of the Neopalatial palaces at these sites destroyed much of the Middle Minoan material. At Knossos, much of the MM material was found outside of the presumed MM palatial walls, to the west and south, as well as in a few contexts that were preserved under Neopalatial levels within the palace (MacGillivray 1998:17–53). The finds in the palatial contexts were more securely left in situ (although not always excavated as one phase), but the majority of the vessels found to the west and south of the palace were likely dumped within these secondary contexts after an earthquake in MM IIB destroyed parts of the palace (MacGillivray 1998:33–34, the “West Polychrome Deposits” and 46–49, the “South Polychrome Deposits”). Therefore, even if it can be assumed that the vessels from these last two deposits originally belonged to the palace, their exact primary context will never be known.

At Phaistos, more of the Middle Minoan palace was preserved, but it, too, was severely damaged by later occupation. All that was preserved included the western quarters of the palace, as well as an adjoining courts and the houses that surrounded these open spaces (Figure 2). While this uncovered section of the palace has provided much valuable information about the types of skeuomorphs found in cultic contexts, for example, unfortunately, these rooms do not supply information about other types of palatial contexts, such as dining halls, reception spaces, or even domestic quarters, if there were any at this time. Thus, due to the partial preservation of the Middle Minoan palaces at Knossos and Phaistos, much of the ceramic assemblage from these two sites was biased due to the preservation of the find contexts.
Even if many ceramic skeuomorphs had been found in situ, this would still not guarantee that the skeuomorphs were originally used in that context. If indeed skeuomorphs were used as drinking sets, as it was postulated above (see 6.III.1 Ceramic Vessel Sets), the relatively low number of sets found in the same rooms and the evidence of sets found in different contexts seem to suggest that, as the sets were separated or became obsolete, they may have had a second life in a different role. This just provides one example of the complications that an uneven archaeological record may impose upon the analysis of the function of these objects.

Compounding the uncertainty of the archaeological record are the problems with the recovery and publication of the ceramic material during excavation. At Knossos, apparently, a large number of fine and coarse ware fragments were thrown away by Mackenzie (MacGillivray 1998:19), invariably affecting the nature of the assemblage for this site. This rejection of pottery sherds is most likely to affect the recovery of imitations and close adaptations. As these forms are relatively rare and unique, they can very easily be overlooked or dismissed and never published. But, as it has been demonstrated, it is these types of skeuomorphs that can provide the most information about past vessels. Once again, it is difficult to know how the rejection of pottery sherds has biased the ceramic assemblage.

In summary, many processes may affect the recovery of archaeological finds, and, hence, affect the quality of the information that may be drawn from skeuomorphs. Nevertheless, largely through the analysis of the distribution of the “metallic” attributes of these objects (details, decoration, shape), it was possible “re-construct” many aspects of those “lost” metallic vessels: their appearance, their possible origins, and their use as fine tablewares and ritual implements in elite and cultic contexts; in short, just plainly providing evidence that precious metal vessels actually existed in the Middle Minoan period at Knossos and Phaistos.
CHAPTER 7

CONCLUSIONS

Metal vessels undoubtedly played an important role in the social and economic life of the ancient Minoans. Due to the preciosity of these items, which would have caused them to be reused, melted down, looted or curated over time, as well as the vagaries of archaeological depositional processes, these metal vessels do not frequently appear in the archaeological record of Middle Minoan Crete. Rather than relying on the fortuitous discovery of future metal vessels, this study offers an alternative method of “recovering” these “lost” vessels. Through the novel approach of analyzing the distribution of “metallic” features in a large corpus of ceramic material, this study has demonstrated that ceramic “counterparts” of metal vessels have great potential in re-constructing the appearance, function, and roles of metal vessels in Minoan society.

Part model and part case study, this investigation into the “metallic” features of the pottery assemblages of Knossos and Phaistos during the Middle Minoan period has outlined those features and pottery types that best reflect certain aspect of Minoan society. The analysis of the distribution of “metallic” structural features on various ceramic types through time has not only allowed for the identification of “metallic” types, it has also shown that, as features that usually appear on some of the earliest vessels within any type, structural details are good chronological indicators of the first appearance of any ceramic, and hence, metal vessel type. The dating of structural details on ceramic vessels was used with success in identifying two major periods in which most metal vessels were likely imported/manufactured in Crete—at the beginning of the period (MM IB–MM IIA) and at the end of the period, in MM IIB–MM IIIA. Within each period, it was postulated that groups of vessels with their own characteristic features and
shapes were introduced. As many of the ceramic skeuomorphs introduced to Crete in MM IB or MM IIA seem to have been influenced by Anatolian/Northern Levantine metal shapes, it was suggested that the Minoans may have imported a large group of metal vessels from this region in order to stock the newly built First Palaces. The dating of the first “metallic” types on Crete to MM IB may eventually help create a chronological concordance between Crete, Anatolia/Levant, and, eventually, Egypt.

The analysis of the decorative surface treatments of the pottery assemblages of Knossos and Phaistos were very useful in re-constructing the appearance of “lost” metal vessels as well as in identifying some of the local and foreign decorative techniques used on the metal vessels. According to the ceramic skeuomorphs, fluting, chasing, and gadrooning—perhaps introduced to Crete via imported vessels—seem to have been the earliest decorative techniques, appearing in MM IB and MM IIA. Repoussé work may have been invented by the Minoans sometime in MM IIB, perhaps as an outgrowth of experimentation with fluting in “reverse.” Inlay seems to have been a local development that may have begun in MM IB, perhaps earlier. The earliest ceramic skeuomorphs emulating inlay work seem to display simple, geometric motifs, such as triangles, circles, and semi-circles. The inlay motifs appear to become more complex over time. Inlay work on metal vessels may have begun as imbedded motifs within ornamental bands. These ornamental bands were likely used as both decorative elements and strengthening tools to maintain a metal vessel’s shape. Some small thin bands (and rivets) may have been used to prevent imbedded cut-outs from coming off the surface of the vessel. Enamel work appears to also have been a local development that may have begun as early as MM IB or MM IIA as well. The invention of “niello” in the Late Minoan period may have begun as an outgrowth of experimentation with enameling during the Middle Minoan period.

Within this study, it was noted that there was a tendency for “plastic” decorative techniques (three-dimensional shaping of the clay) to appear on some of the earliest
vessels within each ceramic type. As with any analysis that helps in narrowing down the chronological variability of stylistic changes in pottery, the investigation into the decorative surface treatments of the ceramic skeuomorphs of metal vessels has the potential to aid in the differentiation of chronological sequences for the Middle Minoan period, especially for MM IIA and MM IIB, periods in which the pottery is not always clearly defined. With a wider range of contexts and ceramic examples, this differentiation can only be improved.

By analyzing the shapes of the ceramic skeuomorphs, it was possible to ascertain some other facets of Minoan society. A comparison between the ceramic skeuomorphs on Crete with similar-looking metal examplars from Anatolia, Northern Levant, Egypt, and mainland Greece has led to the speculation that many of the novel ceramic types that appear on Crete at the beginning of the Middle Minoan period were influenced by the import of a set of vessels from the silver-rich region of Anatolia, which the Minoans may have possibly encountered in a Northern Levantine port site such as Byblos. The suggestion that the Minoans may have been importing silver vessels from this region helps to contextualize the number of Minoan finds found at Byblos during the Middle Bronze Age and speaks to the Minoan’s trading practices at this time.

Whereas the analysis of the shapes of the ceramic skeuomorphs has helped to elucidate some of the foreign origins of the ceramic types that appear in the Middle Minoan period, an examination into the functional aspect of the ceramic skeuomorphs has led to the speculation that the Minoans were mainly using metal vessels (and their skeuomorphs) during feasting/ritual occasions and in cultic contexts at the palaces of Knossos and Phaistos. According to the evidence of the metal parallels of the skeuomorphs and the decorative surface treatments of the ceramic vessels, it seems as if the majority of the fine metal tablewares were made from silver and partially gilded or inlaid with accented bands/enameded for color contrast. Many vessels specifically used
as religious implements (stands, basins) may have been fashioned from gilded bronze. It
also appears, due to the pairing of select ceramic types through similar decorative
treatments, that many of these vessels (metal and ceramic) were used as “sets.” One set
(ewers, basins, rhyta, stands) may have been used for pouring libations/washing hands,
while the other identified set (cups and bridge-spouted jars) may have been used for the
individual consumption of alcoholic beverages.

As it is assumed that only the “elite” could have afforded the finest metal vessels,
and as it was posited that aspirational skeuomorphs were, in general, used by individuals
who could not afford or were not permitted the originals, the Minoan ceramic
skeuomorphs are assumed to have been used by a group of persons seeking to raise their
own status and prestige during occasions that can be categorized as “diacritical feasts.”
Of the vessels presumably used for cultic purposes, the “sacred ewer” and piriform rhyta
stand out for the retention of the ceramic torus ring over time on the same vessel type.
This trend, persisting on the same ceramic types into the Late Minoan period, was found
to be a quality of some implements used in cultic contexts. These particular imitations
were dubbed preservational skeuomorphs, and it was suggested that this kind of
skeuomorph was a means of evoking and maintaining the past within sacred contexts.
Although strictly outside of the purview of this study, the preliminary observations
concerning the contextual finds of skeuomorphs support the interpretation of a
hierarchical Minoan society whose members (at least in the palaces) used metal vessels
(and their skeuomorphs) in these elite palatial contexts.

In addition to touching on aspects of Minoan society during the Middle Minoan
period, a theoretical framework was proposed here to explain the behavior and varied
appearance of skeuomorphs within the archaeological record. By envisioning
skeuomorphs as the by-products at any given time of the processes of emulation and
imitation within a cycle of reproduction, this study has been able to reconcile many of the
different interpretations of these objects present in the archaeological literature, and it has been able to provide a role and overarching meaning to these objects. Endowing skeuomorphs with a more universal meaning will perhaps allow these objects a more significant role in archaeological studies—of all periods.

In conclusion, it is clear that skeuomorphs have great potential in “reconstructing” not only objects that no longer survive, but also certain behavioral patterns of past societies. The conclusions reached in this study represent only the first glimpses of the possibilities skeuomorphs may offer to the archaeological community. In addition to the conclusions reached here—the re-construction of the appearance of certain “lost” metal vessels, tracing the origin of these metal vessels, pushing back the evidence for the use of certain metallic decorative techniques into the Middle Minoan period—the analysis of skeuomorphs could also be useful in many other ways. The analysis of the regional differences in “local” shapes may, ultimately, provide clues to the location of metallurgical workshops on the island, whereas the regional similarities of “foreign” skeuomorphs may provide evidence for the close cooperation of the elites of two or more sites, which, in the end, may help to elucidate local trade patterns or the extent of one site’s influence over a region.

Applying the emulation and imitation model to many facets of the archaeological record also has merit. Notably, it provides a means of explaining the change in pottery fashions; it allows for a distinction between emigration and emulation in ceramic assemblages; and it shows promise in addressing complicated chronological problems. As Evans pointed out long ago, “it is to the existence of these ceramic copies that we owe the best evidence of the wealth of Minoan lords in precious metals in the palmy days of the Middle Minoan age” (1921:241).
ABBREVIATIONS AND CONVENTIONS

Chronological periods

EM  Early Minoan
LC  Late Cycladic
LH  Late Helladic
LM  Late Minoan
MH  Middle Helladic
MK  Middle Kingdom (Egypt)
MM  Middle Minoan

General

fig.  figure
figs.  figures
fn.  footnote
n/a  not available or not applicable
no.  number
pl.  plate
pls.  plates

Museums

AE  Ashmolean Museum
BM  Beirut National Museum
HM  Herakleion Museum
KSM  Knossos Stratigraphic Museum
MAC  Museum of Anatolian Civilizations
Mus.  Museum
NAM  National Archaeological Museum of Athens
NM  Nauplion Museum

Journals and Book Series

AAA  Athens Annals of Archaeology/ Ἀρχαιολογικὰ Ανάλεκτα Ἑξ Ἀθηνῶν
AJA  American Journal of Archaeology
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tr>
<td>AntCl</td>
<td>L’Antiquité classique</td>
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<tr>
<td>ArchEph</td>
<td>Ἀρχαιολογικὴ Ἐφημερίς</td>
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<tr>
<td>ARMT</td>
<td>Archives Royales de Mari, texts transcrits et traduits</td>
</tr>
<tr>
<td>ASAtene</td>
<td>Annuario della scuola archaeologica di Atene</td>
</tr>
<tr>
<td>CMS</td>
<td>The Corpus der minoischen und mykenischen Siegel</td>
</tr>
<tr>
<td>BCH</td>
<td>Bulletin de correspondence hellénique</td>
</tr>
<tr>
<td>Belleten</td>
<td>Belleten. Türk tarih kurumu</td>
</tr>
<tr>
<td>BSA</td>
<td>Annual of the British School of Archaeology at Athens</td>
</tr>
<tr>
<td>EtCret</td>
<td>Études Crétoises</td>
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<tr>
<td>JAA</td>
<td>Journal of Anthropological Archaeology</td>
</tr>
<tr>
<td>JdI</td>
<td>Jahrbuch des Deutschen Archäologischen Instituts</td>
</tr>
<tr>
<td>JHS</td>
<td>Journal of Hellenic Studies</td>
</tr>
<tr>
<td>JMA</td>
<td>Journal of Mediterranean Archaeology</td>
</tr>
<tr>
<td>JRGZM</td>
<td>Jahrbuch des Römisch-Germanischen Zentralmuseums, Mainz</td>
</tr>
<tr>
<td>CretChron</td>
<td>Κρητικά χρονικά</td>
</tr>
<tr>
<td>MDOG</td>
<td>Mitteilungen der Deutschen Orient-Gesellschaft zu Berlin</td>
</tr>
<tr>
<td>MonAnt</td>
<td>Monumenti antichi della reale Academia dei Lincei</td>
</tr>
<tr>
<td>OIP</td>
<td>Oriental Institute Publications</td>
</tr>
<tr>
<td>Prakt</td>
<td>Πρακτικά τῆς Ἀθηναίων Ἀρχαιολογικῆς Ἑταιρείας</td>
</tr>
<tr>
<td>SMEA</td>
<td>Studi micenei ed egeo-anatolici</td>
</tr>
</tbody>
</table>
TABLES
**Table 1:** Chronology for the Aegean Bronze Age (after Betancourt 2007:3, fig. 1.2).

<table>
<thead>
<tr>
<th>TRADITIONAL CHRONOLOGY DATES BCE</th>
<th>HIGH CHRONOLOGY DATES BCE</th>
<th>CRETE</th>
<th>GREEK PENINSULA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 3000 to about 2000</td>
<td></td>
<td>EM I</td>
<td>EH I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM IIA</td>
<td>EH II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM IIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM III</td>
<td>EH III</td>
</tr>
<tr>
<td>2000–1625</td>
<td>2000–1725</td>
<td>MM IA</td>
<td>MH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM IB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM IIA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM IIB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM IIIA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>MM IIIB</td>
<td></td>
</tr>
<tr>
<td>1625–1525</td>
<td>1725–1625</td>
<td>LM IA</td>
<td>LH I</td>
</tr>
<tr>
<td>1525–1450</td>
<td>1625–1500</td>
<td>LM IB</td>
<td>LH IIA</td>
</tr>
<tr>
<td>1450–1425</td>
<td>1500–1425</td>
<td>LM II</td>
<td>LH IIB</td>
</tr>
<tr>
<td>1425–1300</td>
<td>1425–1300</td>
<td>LM IIIA</td>
<td>LH IIIA</td>
</tr>
<tr>
<td>1300–1200</td>
<td>1300–1200</td>
<td>LM IIIB</td>
<td>LH IIIB</td>
</tr>
<tr>
<td>1200–1125</td>
<td>1200–1125</td>
<td>LM IIIC</td>
<td>LH IIIC</td>
</tr>
</tbody>
</table>
Table 2: Summary of structural details and decorative techniques by type and date. The column labeled “struct. feat.” refers to those clay features that have been added to the vessel to make it appear more “metallic”; “plastic tech.” refers to the specific techniques applied to the clay surface to create three-dimensional decorative effects (as opposed to two-dimensional painted effects); whereas “techniques” refers to the metallic techniques that were evoked by the painted and “plastic” decoration on the pottery shapes. The “date” column lists the range of dates in which the type occurs (not necessarily the date that the structural details first appear; the chronological range of the structural details are addressed in Table 3). Ribbon handles are assumed for all types, except where noted. Types are listed according to the order they appear in Chapter 5.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>PL. NOs.</th>
<th>DESCRIPTION</th>
<th>STRUCT. FEAT.</th>
<th>PLASTIC TECH.</th>
<th>TECHNIQUES</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>35</td>
<td>Non-figural askoi with extravagant spout</td>
<td>spouts, loop handles</td>
<td>--</td>
<td>added bands</td>
<td>MM IIA</td>
</tr>
<tr>
<td>BAS 1</td>
<td>35–36</td>
<td>Basins with added rims</td>
<td>cut-out rim</td>
<td>--</td>
<td>added rim</td>
<td>MM IIB-III A</td>
</tr>
<tr>
<td>BAS 2</td>
<td>36</td>
<td>Basin with inlay design</td>
<td>--</td>
<td>--</td>
<td>inlay or enameling</td>
<td>MM II</td>
</tr>
<tr>
<td>BWL 1</td>
<td>36</td>
<td>Bowl with lug handles</td>
<td>lug handles</td>
<td>--</td>
<td>vertical fluting</td>
<td>MM IIB-III A</td>
</tr>
<tr>
<td>BWL 2</td>
<td>37</td>
<td>Shallow bowl with horizontal handles</td>
<td>handles above rim</td>
<td>--</td>
<td>vertical fluting</td>
<td>MM II</td>
</tr>
<tr>
<td>BWL 3</td>
<td>37</td>
<td>Deep bowl with vertical handles</td>
<td>rivets, “laid-on” handle</td>
<td>--</td>
<td>--</td>
<td>MM II</td>
</tr>
<tr>
<td>BWL 4</td>
<td>38</td>
<td>Square bowl with lobes</td>
<td>lobed rim</td>
<td>--</td>
<td>inlay?</td>
<td>MM IIA</td>
</tr>
<tr>
<td>BWL 5</td>
<td>38</td>
<td>Bowl with lobed or crinkly rim</td>
<td>lobed rim, crinkled rim</td>
<td>--</td>
<td>added bands</td>
<td>MM IB, MM IB-IIA, MM IIA</td>
</tr>
<tr>
<td>BWL 6</td>
<td>38</td>
<td>Pedestaled bowl</td>
<td>thin walls</td>
<td>--</td>
<td>inlay? fluting?</td>
<td>MM IB or MM IIA</td>
</tr>
<tr>
<td>BSJ 1</td>
<td>38</td>
<td>Bridge-spouted jar with angular shoulder</td>
<td>--</td>
<td>shaping</td>
<td>hammering</td>
<td>MM IIA</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
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<td>---------------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>BSJ 2</td>
<td>39</td>
<td>Bridge-spouted jar with gadrooning</td>
<td>--</td>
<td>repoussé</td>
<td>gadrooning</td>
<td>MM IIA</td>
</tr>
<tr>
<td>BSJ 3</td>
<td>39</td>
<td>Bridge-spouted jar with vertical fluting</td>
<td>--</td>
<td>repoussé</td>
<td>vertical fluting, added bands</td>
<td>MM IIA</td>
</tr>
<tr>
<td>BSJ 4</td>
<td>39</td>
<td>Bridge-spouted jar with horizontal ridging</td>
<td>--</td>
<td>incising, shaping</td>
<td>added bands? hammering</td>
<td>MM IIA, MM II, MM IIB-IIIA</td>
</tr>
<tr>
<td>BSJ 5</td>
<td>39-40</td>
<td>Bridge-spouted jar with added bands</td>
<td>--</td>
<td>repoussé</td>
<td>added bands</td>
<td>MM IB-IIA, MM II, MM IIB-IIIA</td>
</tr>
<tr>
<td>BSJ 6</td>
<td>40</td>
<td>Bridge-spouted jar with repoussé work</td>
<td>--</td>
<td>repoussé</td>
<td>repoussé</td>
<td>MM II, MM IB-IIIA</td>
</tr>
<tr>
<td>BSJ 7</td>
<td>40</td>
<td>Bridge-spouted jar with chasing</td>
<td>--</td>
<td>stamping</td>
<td>chasing</td>
<td>MM II</td>
</tr>
<tr>
<td>BSJ 8</td>
<td>41</td>
<td>Bridge-spouted jar with inlay or enameling</td>
<td>--</td>
<td>--</td>
<td>inlay</td>
<td>MM IB, MM IIA, MM II, MM IIB-IIIA</td>
</tr>
<tr>
<td>BKT</td>
<td>41</td>
<td>Bucket Jars</td>
<td>horiz. handles above rim, rivets</td>
<td>incising</td>
<td>--</td>
<td>MM IB, MM IIA, MM II, MM IIB-IIIA</td>
</tr>
<tr>
<td>SG CUP 1</td>
<td>42</td>
<td>Semi-globular cup with gadrooning</td>
<td>--</td>
<td>repoussé</td>
<td>gadrooning</td>
<td>MM IB, MM II, MM IIB</td>
</tr>
<tr>
<td>SG CUP 2</td>
<td>42-43</td>
<td>Semi-globular cup with vertical fluting or arcades</td>
<td>thin walls</td>
<td>incising</td>
<td>vertical fluting</td>
<td>MM IB-IIA, MM IIA-B, MM IIB-IIIA</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
</tr>
<tr>
<td>-------</td>
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<td>---------------------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>------------------</td>
<td>------------</td>
</tr>
<tr>
<td>SG CUP 3</td>
<td>43</td>
<td>Semi-globular cup with torsional fluting</td>
<td>--</td>
<td>molding</td>
<td>torsional fluting</td>
<td>MM IB-IIA</td>
</tr>
<tr>
<td>SG CUP 4</td>
<td>43</td>
<td>Semi-globular cup with repoussé</td>
<td>thin walls</td>
<td>stamping</td>
<td>repoussé</td>
<td>MM IIA, MM II, MM IIB-III</td>
</tr>
<tr>
<td>SG CUP 5</td>
<td>44</td>
<td>Semi-globular cup with horizontal added bands</td>
<td>thin walls</td>
<td>stamping, repoussé</td>
<td>added bands</td>
<td>MM IB, MM IIB-III</td>
</tr>
<tr>
<td>SG CUP 6</td>
<td>44</td>
<td>Semi-globular cup with inlay or enameling</td>
<td>thin walls</td>
<td>--</td>
<td>inlay</td>
<td>MMIB, MM IB-IIA</td>
</tr>
<tr>
<td>RD CUP 1</td>
<td>36</td>
<td>Rounded cup with added rims</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>--</td>
</tr>
<tr>
<td>RD CUP 2</td>
<td>44</td>
<td>Rounded globular cup</td>
<td>--</td>
<td>--</td>
<td>vertical fluting?</td>
<td>MM IB-IIA</td>
</tr>
<tr>
<td>RD CUP 3</td>
<td>44</td>
<td>Rounded cup with constricted neck</td>
<td>--</td>
<td>--</td>
<td>added band?</td>
<td>MM IB-IIA</td>
</tr>
<tr>
<td>RD CUP 4</td>
<td>44</td>
<td>Rounded cup with sharply carinated shoulder</td>
<td>--</td>
<td>--</td>
<td>added bands? repoussé</td>
<td>MM IB</td>
</tr>
<tr>
<td>RD CUP 5</td>
<td>44</td>
<td>Rounded cup with spool handle</td>
<td>spool handle</td>
<td>--</td>
<td>“speckling”</td>
<td>MM IIB-III</td>
</tr>
<tr>
<td>CS CUP 1</td>
<td>45</td>
<td>Small carinated cup with horizontal fluting</td>
<td>--</td>
<td>incising</td>
<td>horizontal fluting</td>
<td>MM IB, MM II</td>
</tr>
<tr>
<td>CS CUP 2</td>
<td>45</td>
<td>Small carinated cup with vertical fluting</td>
<td>--</td>
<td></td>
<td>vertical fluting</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
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<td>-----------</td>
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<td>---------------</td>
<td>------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>CS CUP 3</td>
<td>45</td>
<td>Small carinated cup with torsional fluting</td>
<td>--</td>
<td>--</td>
<td>torsional fluting</td>
<td>MM II</td>
</tr>
<tr>
<td>CS CUP 4</td>
<td>45</td>
<td>Small carinated cup with added bands</td>
<td>--</td>
<td>--</td>
<td>added bands</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>CS CUP 5</td>
<td>46</td>
<td>Small carinated cup with inlay or enamel</td>
<td>--</td>
<td>--</td>
<td>inlay, enamel</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>CS CUP 6</td>
<td>46</td>
<td>Small carinated cup with crinkled rim</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>MM IB</td>
</tr>
<tr>
<td>CM CUP 1</td>
<td>46</td>
<td>Medium carinated cup with plain rim</td>
<td>thin walls</td>
<td>--</td>
<td>--</td>
<td>MM IIA, MM IIA</td>
</tr>
<tr>
<td>CM CUP 2</td>
<td>47</td>
<td>Medium carinated cup with lobed rim</td>
<td>lobed rim</td>
<td>--</td>
<td>--</td>
<td>MM IIA, MM IIA</td>
</tr>
<tr>
<td>CT CUP 1</td>
<td>47</td>
<td>Tall carinated cup with plain rim</td>
<td>--</td>
<td>incising</td>
<td>horiz. fluting?</td>
<td>MM IIA, MM IIB-III A</td>
</tr>
<tr>
<td>CT CUP 2</td>
<td>47</td>
<td>Tall carinated cup with lobed or crinkled rim</td>
<td>rivets, lobed or crinkled rim</td>
<td>--</td>
<td>--</td>
<td>MM IIA</td>
</tr>
<tr>
<td>SS CUP 1</td>
<td>47</td>
<td>Straight-sided cup with ornamental bands</td>
<td>--</td>
<td>--</td>
<td>added bands</td>
<td>MM IA-III A</td>
</tr>
<tr>
<td>SS CUP 2</td>
<td>48</td>
<td>Straight-sided cup with torsional flutes</td>
<td>--</td>
<td>repoussé</td>
<td>torsional fluting, repoussé</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>SS CUP 3</td>
<td>48</td>
<td>Straight-sided cup with vertical flutes</td>
<td>crinkled rim</td>
<td>shaping</td>
<td>vertical fluting, repoussé</td>
<td>MM II</td>
</tr>
<tr>
<td>SS CUP 4</td>
<td>48</td>
<td>Straight-sided cup with horizontal flutes</td>
<td>horizontal grooves</td>
<td>incising</td>
<td>horizontal fluting, repoussé</td>
<td>MM IIB-III A</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>-------------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>SS CUP 5</td>
<td>48</td>
<td>Straight-sided cup with repoussé</td>
<td>--</td>
<td>stamping, repoussé</td>
<td>repoussé</td>
<td>MM II, MM IIB-III A</td>
</tr>
<tr>
<td>SS CUP 6</td>
<td>49</td>
<td>Straight-sided cup with foliate bands</td>
<td>--</td>
<td>--</td>
<td>repoussé</td>
<td>MM II, MM IIB-III A</td>
</tr>
<tr>
<td>SS CUP 7</td>
<td>49</td>
<td>Straight-sided cup with mid-rib</td>
<td>mid-rib</td>
<td>--</td>
<td>repoussé</td>
<td>MM IIB-III A</td>
</tr>
<tr>
<td>SS CUP 8</td>
<td>49</td>
<td>Straight-sided cup with inlay work</td>
<td>--</td>
<td>--</td>
<td>inlay?</td>
<td>MM II, MM IIB-III A</td>
</tr>
<tr>
<td>DT CUP 1</td>
<td>50</td>
<td>Demitasse with no neck</td>
<td>thin walls</td>
<td>--</td>
<td>added bands? inlay? hammering</td>
<td>MM IB, MM IIA</td>
</tr>
<tr>
<td>DT CUP 2</td>
<td>50</td>
<td>Demitasse with ring around neck</td>
<td>repoussé ring</td>
<td>repoussé</td>
<td>added bands</td>
<td>MM IB</td>
</tr>
<tr>
<td>DT CUP 3</td>
<td>50</td>
<td>Demitasse with sharply off-set rim</td>
<td>rivets, horiz. handle, thin walls</td>
<td>--</td>
<td>inlay?</td>
<td>MM IB- IIA</td>
</tr>
<tr>
<td>DT CUP 4</td>
<td>50</td>
<td>Demitasse with lobed rim</td>
<td>lobed rim</td>
<td>shaping</td>
<td>inlay?</td>
<td>MM IB</td>
</tr>
<tr>
<td>GBT 1</td>
<td>50</td>
<td>Short rounded goblets</td>
<td>thin walls</td>
<td>--</td>
<td>gadrooning, added bands?</td>
<td>MM IB- IIA</td>
</tr>
<tr>
<td>GBT 2</td>
<td>50</td>
<td>Tall rounded goblets</td>
<td>thin walls</td>
<td>--</td>
<td>inlay</td>
<td>MM IB- IIA</td>
</tr>
<tr>
<td>JAR 1</td>
<td>51</td>
<td>Cylindrical spouted jar</td>
<td>rivet, added rim</td>
<td>--</td>
<td>inlay?</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>JAR 2</td>
<td>51</td>
<td>Ovoid jar with two horizontal handles</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>MM IIA, MM II, MM III</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
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<td>--------</td>
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<td>------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>JAR 3</td>
<td>51</td>
<td>Situla-type jar with loop handles</td>
<td>loop handles</td>
<td>added clay</td>
<td>hammering, added bands,</td>
<td>MM II</td>
</tr>
<tr>
<td>JAR 4</td>
<td>51</td>
<td>Ovoid jar with loop handles</td>
<td>holes for loop handles</td>
<td>--</td>
<td>repoussé, added bands</td>
<td>MM II</td>
</tr>
<tr>
<td>JUG 1</td>
<td>51</td>
<td>Jug with high beaked spout and torus ring</td>
<td>torus ring</td>
<td>--</td>
<td>repoussé, gilding</td>
<td>MM II, MM IIB-IIIa</td>
</tr>
<tr>
<td>JUG 2</td>
<td>52</td>
<td>Jug with cut-away rim</td>
<td>torus ring</td>
<td>--</td>
<td>repoussé, added bands,</td>
<td>MM IA-IIIa</td>
</tr>
<tr>
<td>JUG 3</td>
<td>52</td>
<td>Jug with trefoil rim</td>
<td>rivet</td>
<td>--</td>
<td>ornamental banding?</td>
<td>MM IB-IIa</td>
</tr>
<tr>
<td>JUG 4</td>
<td>52</td>
<td>Jug with wide mouth</td>
<td>handles</td>
<td>molding or shaping</td>
<td>gadrooning, torsional fluting</td>
<td>MM IB-IIa</td>
</tr>
<tr>
<td>JUG 5</td>
<td>52</td>
<td>Small jug with flat rim</td>
<td>torus ring, up-swing handles</td>
<td>--</td>
<td>added bands, inlay</td>
<td>MM IIA-IIIa</td>
</tr>
<tr>
<td>JUG 6</td>
<td>52</td>
<td>Jug with cylindrical body</td>
<td>torus ring</td>
<td>--</td>
<td>added bands</td>
<td>MM II</td>
</tr>
<tr>
<td>KTH</td>
<td>53</td>
<td>Kantharos with lobed rim</td>
<td>rivets, lobed rim</td>
<td>--</td>
<td>--</td>
<td>MM IB-IIa</td>
</tr>
<tr>
<td>PYX 1</td>
<td>53</td>
<td>Carinated pyxis</td>
<td>--</td>
<td>--</td>
<td>torsional fluting</td>
<td>MM IIA</td>
</tr>
<tr>
<td>PYX 2</td>
<td>53</td>
<td>Wide shallow pyxis</td>
<td>repoussé spirals</td>
<td>stamped</td>
<td>repoussé</td>
<td>MM II</td>
</tr>
<tr>
<td>RHY 1</td>
<td>--</td>
<td>Figural whole body rhyta</td>
<td>rivet, torus ring</td>
<td>--</td>
<td>--</td>
<td>MM IIA, MM II</td>
</tr>
<tr>
<td>RHY 2</td>
<td>53</td>
<td>Figural animal head rhyta</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>MM II, MM III</td>
</tr>
<tr>
<td>TYPE</td>
<td>PL. NOs.</td>
<td>DESCRIPTION</td>
<td>STRUCT. FEAT.</td>
<td>PLASTIC TECH.</td>
<td>TECHNIQUES</td>
<td>DATE</td>
</tr>
<tr>
<td>------</td>
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<td>------------------------------</td>
<td>--------------------------------</td>
<td>---------------</td>
<td>--------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>RHY 3</td>
<td>53</td>
<td>Piriform rhyta</td>
<td>rivet, torus ring, cut-out rim, molded whorl shells</td>
<td>stamped</td>
<td>repoussé</td>
<td>MM II, MM IIB-III A</td>
</tr>
<tr>
<td>RHY 4</td>
<td>53</td>
<td>Globular rhyta</td>
<td>torus ring</td>
<td>--</td>
<td>added bands</td>
<td>MM II, MM IIB-III A</td>
</tr>
<tr>
<td>STD 1</td>
<td>53</td>
<td>Stand with flower appliqués</td>
<td>cut-out rim and base, torus ring</td>
<td>added clay</td>
<td>added rims, added bands</td>
<td>MM II</td>
</tr>
<tr>
<td>STD 2</td>
<td>53</td>
<td>Low offering stand</td>
<td>cut-out rim</td>
<td>--</td>
<td>added rim</td>
<td>MM II</td>
</tr>
<tr>
<td>STD 3</td>
<td>53</td>
<td>Stand with cut-out petal rim and base</td>
<td>cut-out rim and base</td>
<td>--</td>
<td>inlay?</td>
<td>MM IIB</td>
</tr>
<tr>
<td>STD 4</td>
<td>53</td>
<td>Stand with figural design and ornamental bands</td>
<td>--</td>
<td>--</td>
<td>added bands, pointillé</td>
<td>MM II</td>
</tr>
<tr>
<td>TP 1</td>
<td>54</td>
<td>Teapot with long spout</td>
<td>spout, crinkled rim</td>
<td>--</td>
<td>--</td>
<td>MM IIB?</td>
</tr>
<tr>
<td>TP 2</td>
<td>54</td>
<td>Teapot with pedestal foot</td>
<td>spout, foot</td>
<td>--</td>
<td>ornamental banding?</td>
<td>MM IB</td>
</tr>
<tr>
<td>TP 3</td>
<td>54</td>
<td>Teapot with extravagant spout</td>
<td>spout</td>
<td>incising, stamped</td>
<td>added bands, fluting</td>
<td>MM IIA</td>
</tr>
<tr>
<td>TMB 1</td>
<td>54</td>
<td>Tumbler with fluting</td>
<td>thin walls</td>
<td>clay appliqué</td>
<td>torsional fluting</td>
<td>MM IIB-II A</td>
</tr>
</tbody>
</table>
**Table 3:** Summary of “metallic” structural features by date.

<table>
<thead>
<tr>
<th>Metallic structural details</th>
<th>MM IB</th>
<th>MM IIA</th>
<th>MM II</th>
<th>MM IIB</th>
<th>MM IIB–IIIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ribbon handles</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>up-swung handles</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>loop handles</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>horiz. handles above the rim</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“laid-on” handles</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>clay rivets</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>extravagant spouts</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lobed rims</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crinkled rims</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>egg-shell thin walls</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>mid-ribs</td>
<td>x&lt;sup&gt;1&lt;/sup&gt;</td>
<td>x&lt;sup&gt;2&lt;/sup&gt;</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>torus ring necks</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>torus ring bases</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>cut-out rims</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cut-out bases</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>stand bases</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spool handles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

<sup>x1</sup>: BKT (Levi 1976, pl. 27b) has ridges around the center. Not quite a proper mid-rib.

<sup>x2</sup>: SS CUP 2 (Levi 1957–1958, fig. 153b) has slight added ridge of clay around middle.
Table 4: Summary of “metallic” decorative techniques by date. A large X indicates the presence of vessels with “plastic” decoration (as listed under the column “plast. tech.” in Table 2), and a small x indicates the presence of vessels with decoration painted to resemble the technique under discussion.

<table>
<thead>
<tr>
<th>Metallic techniques</th>
<th>MM IB</th>
<th>MM IB–IIA</th>
<th>MM IIA</th>
<th>MM II</th>
<th>MM IIB</th>
<th>MM IIB–IIIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>gadrooning</td>
<td>X</td>
<td>X x</td>
<td>x</td>
<td>X x</td>
<td>X x</td>
<td>x</td>
</tr>
<tr>
<td>chasing</td>
<td>X</td>
<td>X x</td>
<td>X x</td>
<td>X x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>torsional fluting</td>
<td>X x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>X x</td>
<td></td>
</tr>
<tr>
<td>fine horizontal fluting</td>
<td>X</td>
<td></td>
<td>X x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wide horizontal fluting</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>vertical fluting</td>
<td></td>
<td>X x</td>
<td>x</td>
<td>X x</td>
<td>x</td>
<td>x³</td>
</tr>
<tr>
<td>hammering</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>X⁴</td>
</tr>
<tr>
<td>ornamental bands</td>
<td>X x</td>
<td>X x</td>
<td>X x</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>inlay/enameling</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>repoussé shells</td>
<td></td>
<td>X</td>
<td>x</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>repoussé circles/dots</td>
<td></td>
<td></td>
<td></td>
<td>X x</td>
<td></td>
<td>X x</td>
</tr>
<tr>
<td>repoussé spirals</td>
<td></td>
<td>X</td>
<td>X x</td>
<td></td>
<td></td>
<td>X x</td>
</tr>
</tbody>
</table>

X¹: SG CUP 1 (Levi 1976, pl. 179c) is dated by Levi and Carinci (1988) to Fase II (MM IIB). Most of the pottery in room IL, however is dated to Fase Ib.

X²: BAS 1 (Evans 1935:120–121, fig. 88) with molded torsional flutes. Evans (1921:242–243) implies that the basin should be dated to MM IB, but basins are mainly dated to MM IIB–IIIA. It is a hybrid form.

X³: SG CUP 2 (MacGillivray 1998, pl. 14:375) was found in “West Polychrome Deposit” (MM IIB–IIIA). Perhaps this cup was holdover from earlier period.

X⁴: BSJ 4 (MacGillivray 1998, pl. 80:422) are fragmentary sherds with incising. Perhaps derivative at this stage.

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Table 5: Summary of metal vessel parallels organized by vessel type. The table includes information about the presumed provenance of the finds (“Context”), materials in which the metal vessel parallels were made (“Material”), and context date (“Date”) of the metal parallels. If no extant metal example could be found for a type, it was assumed that the vessel type was a local innovation. A single question mark (“?”) indicates a lack of information concerning that type, but a question mark after an entry (e.g. Bronze?) indicates guesswork based on parallels with other metal or ceramic types. Types are listed according to the order they appear in Ch. 5.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>CONTEXT</th>
<th>MATERIAL</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK</td>
<td>Non-figural askoi with extravagant spout</td>
<td>Local</td>
<td>?</td>
<td>--</td>
</tr>
<tr>
<td>BAS 1</td>
<td>Basins with added rims</td>
<td>Mycenae</td>
<td>Bronze, Gold</td>
<td>MH III-LH I</td>
</tr>
<tr>
<td>BAS 2</td>
<td>Basin with rosette design</td>
<td>Local</td>
<td>Silver?</td>
<td>--</td>
</tr>
<tr>
<td>BWL 1</td>
<td>Bowl with lug handles</td>
<td>Anatolia</td>
<td>Bronze</td>
<td>EBA, MBA, IA</td>
</tr>
<tr>
<td>BWL 2</td>
<td>Shallow bowls with two horiz. handles</td>
<td>Tôd</td>
<td>Silver</td>
<td>12th Dynasty</td>
</tr>
<tr>
<td>BWL 3</td>
<td>Deep bowls with vertical handles</td>
<td>Anatolia</td>
<td>Bronze</td>
<td>MBA</td>
</tr>
<tr>
<td>BWL 4</td>
<td>Square bowl with lobes</td>
<td>Local?</td>
<td>?</td>
<td>--</td>
</tr>
<tr>
<td>BWL 5</td>
<td>Shallow bowls with lobed or crinkly rim</td>
<td>Local? Anatolia?</td>
<td>Silver?</td>
<td>--</td>
</tr>
<tr>
<td>BWL 6</td>
<td>Pedestaled bowl</td>
<td>Near East</td>
<td>Silver?</td>
<td>MBA? LBA</td>
</tr>
<tr>
<td>BSJ</td>
<td>Bridge-spouted jars</td>
<td>Local</td>
<td>Bronze?</td>
<td>--</td>
</tr>
<tr>
<td>BKT</td>
<td>Bucket Jars</td>
<td>Local</td>
<td>Bronze?</td>
<td>--</td>
</tr>
<tr>
<td>SG CUP 1</td>
<td>Semi-globular cup with gadrooning</td>
<td>Tôd</td>
<td>Silver</td>
<td>12th Dynasty</td>
</tr>
<tr>
<td>SG CUP</td>
<td>Other semi-globular cups</td>
<td>Tôd</td>
<td>Silver</td>
<td>12th Dynasty</td>
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<tr>
<td>RD CUP 1</td>
<td>Rounded cup with added rims</td>
<td>Mycenae</td>
<td>Silver, Gold</td>
<td>MH III-LH I</td>
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<tr>
<td>RD CUP 2</td>
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<td>Anatolia, Tôd</td>
<td>Gold, Silver, Bronze</td>
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<tr>
<td>RD CUP 3</td>
<td>Rounded cup with constricted neck</td>
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<td>MBA</td>
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<tr>
<td>RD CUP 4</td>
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<td>Anatolia</td>
<td>Silver?</td>
<td>2nd half of EBA</td>
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<td>Silver?</td>
<td>MBA</td>
</tr>
<tr>
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<td>DESCRIPTION</td>
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<td>MATERIAL</td>
<td>DATE</td>
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<td>Anatolia?</td>
<td>Silver?</td>
<td>--</td>
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<td>Medium carinated cups</td>
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<td>Silver?</td>
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<td>Anatolia?</td>
<td>Silver?</td>
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<td>Straight-sided cups</td>
<td>Mycenae</td>
<td>Silver, Gold</td>
<td>MH III–LH I</td>
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<td>DT</td>
<td>Demitasses</td>
<td>Töd</td>
<td>Silver</td>
<td>12th Dynasty</td>
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<tr>
<td>GBT</td>
<td>Goblets with rounded profile</td>
<td>Anatolia, Local</td>
<td>Gold, Silver?</td>
<td>2nd half of EBA</td>
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<tr>
<td>JAR</td>
<td>Cylindrical spouted jar</td>
<td>Local</td>
<td>Bronze, Gold?</td>
<td>--</td>
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<tr>
<td>JAR</td>
<td>Ovoid jar with two horizontal handles</td>
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<td>Gold</td>
<td>MH III–LH I</td>
</tr>
<tr>
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<td>Situla-type jar with loop handles</td>
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<td>Silver</td>
<td>MH III–LH I</td>
</tr>
<tr>
<td>JAR</td>
<td>Ovoid jar with loop handles</td>
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<td>Bronze?</td>
<td>2nd half of EBA</td>
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<tr>
<td>JUG</td>
<td>Jug with high beaked spout and torus ring</td>
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<td>Silver, Gold</td>
<td>MH III–LH I</td>
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<tr>
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<td>Jug with cut-away rim</td>
<td>Local, Anatolia</td>
<td>Silver, Bronze</td>
<td>LM IB, EBA</td>
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<td>JUG</td>
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<td>Local</td>
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<td>--</td>
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<td>Bronze</td>
<td>2nd half of EBA</td>
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<tr>
<td>JUG</td>
<td>Jar with flat rim</td>
<td>Mycenae</td>
<td>Silver, Gold</td>
<td>MH III–LH I</td>
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<td>Jug with cylindrical body</td>
<td>Local?</td>
<td>--</td>
<td>--</td>
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<td>Kantharos with lobed rim</td>
<td>Anatolia</td>
<td>Silver</td>
<td>MBA</td>
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<tr>
<td>PYX</td>
<td>Pyxides</td>
<td>Local</td>
<td>Silver?</td>
<td>--</td>
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<tr>
<td>RHY</td>
<td>Rhyta, whole animal, animal head</td>
<td>Anatolia, Near East, Bronze, Silver, Gold?</td>
<td>MBA, LBA</td>
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<td>RHY</td>
<td>Rhyta, piriform and globular</td>
<td>Local</td>
<td>Silver, Gold, Copper?</td>
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<td>Stands</td>
<td>Local</td>
<td>Bronze, Gold?</td>
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<td>Near East or Anatolia</td>
<td>Silver</td>
<td>MBA</td>
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<td>TP</td>
<td>Teapot with pedestal foot</td>
<td>Anatolia</td>
<td>Silver</td>
<td>2nd half of EBA</td>
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<tr>
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<td>CONTEXT</td>
<td>MATERIAL</td>
<td>DATE</td>
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<td>Teapot with extravagant spout</td>
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<td>Bronze? Silver?</td>
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<td>TMB 1</td>
<td>Tumbler with fluting</td>
<td>Tôd</td>
<td>Silver</td>
<td>12th Dynasty</td>
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<tr>
<td>TMB 2</td>
<td>Tumbler with added bands</td>
<td>Local?</td>
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Table 6: Comparison of metal vessels from Shaft Graves with ceramic skeuomorph context dates. Vessels are listed according to the grave number in which they were found and are categorized as either “Minoan” or “Mycenaean” products, according to Davis’ attribution of their manufacturing techniques (1977). Designations in [brackets] are thought to be antiques at time of deposition. An asterisk * indicates a potential disagreement with Davis’ attribution of the vessel’s origins (discussed in the text). The table also lists Davis’ catalog number for each of the vessels and the context dates of the ceramic skeuomorphs that match the shape and decoration of the metal vessels.

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<tr>
<th>GRAVE</th>
<th>DAVIS NO.</th>
<th>MYCENAEAN VESSELS</th>
<th>MINOAN VESSELS</th>
<th>SKEUOMORPH DATES</th>
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<td>MM IIIB-LM IA?</td>
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<tr>
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<td>--</td>
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<tr>
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<tr>
<td>Iota</td>
<td>28</td>
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<td>--</td>
<td>MM IIIB?</td>
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<tr>
<td>Alpha</td>
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<td>Silver ewer</td>
<td>MM III</td>
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<td>Delta</td>
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<td>SS CUP w. repoussé Lion Hunt</td>
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<td>SS CUP w. arcades</td>
<td>--</td>
<td>MM IIIB-LM IA?</td>
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<td>32</td>
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<td>V</td>
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<td>--</td>
<td>MM IIIB-LM IA?</td>
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<tr>
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<td>--</td>
<td>MM IIIB-LM IA?</td>
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<td>MM IIA-IIIA</td>
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<td>MM IIA-IIIA</td>
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<tr>
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<tr>
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<td>Plain gold Vapheio cup</td>
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<tr>
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<td>Plain silver Vapheio cup</td>
<td>MM IIIA +</td>
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<td>GRAVE</td>
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<td>MINOAN VESSELS</td>
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<tr>
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<td>41</td>
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<td>[Vapheio cup fragments]</td>
<td>MM IIIA +</td>
</tr>
<tr>
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<td>[Vapheio cup fragments]</td>
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<td>V</td>
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<td>Jar with flat rim and spirals</td>
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<td>[SS CUP w. vert. fluting frags.]</td>
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<td>V</td>
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<td>Situla</td>
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<td>V</td>
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<td>--</td>
<td>Cup with two loop handles</td>
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<tr>
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<tr>
<td>V</td>
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<td>[SS CUP w. foliate bands, frags]</td>
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<td>V</td>
<td>52</td>
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<td>Gold Lion goblet</td>
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<tr>
<td>V</td>
<td>53</td>
<td>--</td>
<td>[Large handle] *</td>
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<td>[Rim frag with white spots]</td>
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<tr>
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<td>55</td>
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<tr>
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<td>Bull rhyton</td>
<td>MM</td>
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<tr>
<td>IV</td>
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<td>Silver ewer</td>
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<td>Goblet with gold inlays</td>
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<td>[Siege rhyton]</td>
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<tr>
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<td>Silver goblet w. rosettes</td>
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<td>III</td>
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<td>Gold lidded box</td>
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<td>Small globular jar</td>
<td>MM IIIA</td>
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<td>III</td>
<td>96</td>
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<td>Miniature lidded vessel</td>
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<td>97</td>
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<tr>
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<td>SG CUP</td>
<td>MM IIA +</td>
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Table 7. Context finds of “metallic” ceramic skeuomorphs mentioned in study for Phaistos (see Chapter 5 for vessel types).

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<th>VESSEL TYPES</th>
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<td>SG CUP 2, PYX 2</td>
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<tr>
<td>LXI</td>
<td>RHY 3</td>
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* Room IC is shown as belonging to House B in Militello 2012, fig. 8.6
Table 8. Examples of imitations, adaptations, and derivations at Knossos and Phaistos.

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<td>SS CUP 10</td>
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Figure 1. Plan of the Protopalatial and Neopalatial Palace at Knossos (after Gesell 1985, fig. 18).
Figure 2. Plan of the Southwest and Northwest Quarters of the Protopalatial Palace and surrounding Houses at Phaistos (after Gesell 1985, fig. 66).
Figure 3. A Model of the Emulation and Imitation Cycle.
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<tr>
<td>SIMILARITY</td>
<td>Formal similarity determined by function. No emulative markers</td>
<td>Identical or nearly identical</td>
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**Figure 4.** Characteristics of “objects that look like other objects.”
PLATES
Examples of “objects that look alike” (1–2) and examples of preservational skeuomorphs (3–5). Soap in the shape of Lego blocks (1); Salt and pepper shakers in the shape of batteries (2); Apple Clock (3), Swiss clock upon which Apple clock is modeled (4); iPhone with “rotary” dial application (5).
Status devolution chart (after D. Miller 1982:90, fig. 1 and M. Miller 1997).
Ceramic rivets on jugs (1); bridge-spouted jars (2–3); bucket Jars (4); cylindrical spouted Jars (5–6); rhyta (8); kantharoi (9–12); tall carinated cups (13); and demitasses (14). Not to scale.
Torus ring and separate necks on jugs (1–6); stands (7); and rhyta (8). Not to scale.
Multiple-lobed rims on kantharoi (1-4, 14); bowls (6, 9-12); and cups (7-8, 13). Not to scale.
“Crinkly” rims on cups (1–6) and teapots (7–8). Not to scale.
Added rims on metal rounded cup (1) and Cretan metal basins (2–9). Not to scale.
Bases and Handles. Separate “stand” bases on cup (1) and jug (2). Base with torus ring on stand (3). Up-swung handles on kantharos (5); rhyton (6); amphora (7); and jug (8). Spool handle on silver straight-sided cup (9); ceramic sherd (10); silver cup from El-Töd; and on ceramic bowl (12). Not to scale.
Loop handles on two metallic teapots from Anatolia (1–2), a metal situla from Mycenae (3), a metal “bridge-spouted” jar from Euboia (4), two ceramic askoi (5–6), and some jars (7–8). Jar that likely had metallic loop handle (9). Metal jar with laid-on riveted handle (10). “Laid-on” handles on ceramic open-mouthed jars (11–12). Not to scale.
Exaggerated spouts on teapots (1–2, 10) and askoi (11–12). Metal “bent-angle” spouts from Anatolia (3). “Bent-angle” spouts on ceramic teapots (4–5) and ovoid jars (6–7). Long narrow spout on metal teapot from Byblos (8) and on ceramic teapot (9). Not to scale.
Triangular spouts on cylindrical spouted jars (1–2), metal "bridge-spouted" jar (3), ceramic bridge-spouted jar (4) and bucket jars (5–6). Repoussé mid-rib on straight-sided cups (7–8) and "basin" (9). Strengthening band on bucket jar (6) and straight-sided cup (10). "Sharp" profile on lobed bowl (11). "Egg-shell" Ware semi-globular cups (12–13). Not to scale.
Torsional fluting. Ceramic basin with molded torsional flutes (1). Painted ceramic bowl (2). Silver bowls with torsional fluting (4–7, 9–12). Ceramic bowl (13) and jug (14) with molded flutes. Painted torsional flutes on pyxis (15), carinated cup (16), conical cup (17), straight-sided cup (18), and tumbler (19). Not to scale.
Vertical fluting (continued). Painted vertical fluting on small carinated cups (1–6), bridge-spouted jars (7–9), and jugs (10–12). Silver bowl with tight flutes (13). Tight vertical flutes on ceramic semi-globular cups (14–15). Not to scale.
Vertical fluting (continued). Vertical fluting on the base of semi-globular cups (1-5), demitasse (6), small carinated cup (7), jugs (8-9) and bridge-spouted jars (10-11). Rosette on base and side of semi-globular cup (12). Not to scale.
Horizontal fluting. Gold cup with horizontal fluting (1). Small ceramic carinated cups with horizontal grooves (2–8, 11). Painted horizontal lines on ceramic carinated cups (9–10). Horizontal fluting on ceramic straight-sided cups (12–15). Horizontal incising on tall carinated cups (16–17), semiglobular cups (18–19), a demitasse (20), a jug (21), a bowl with wishbone handle (22), and bridge-spouted jars (23–24). Not to scale.
Vertical fluting on bases of semi-globular jars (1) and rhyta (2-3). Vertical fluting on gold straight-sided cup (4) and ceramic straight-sided cups (5-6). Band of fluting on bronze jar (7) and ceramic jar (8). Modern silver example of gadrooning (9). Gadrooning on metal basins (10-11). Molded gadroons on ceramic bowls (12-13). Painted gadroons on bowl (14). Repoussé gadroons on semi-globular cups (15-16) and bridge-spouted jar (17). Painted gadroons on bridge-spouted jar (18), jar (19), and goblet (20). Not to scale.
Hammering and Added Bands and Strips. Bridge-spouted jars (1-3), situla-like jar (4), demitasses (5-7) with “hammered” profile. Silver jug from Zakros with embossed strips (8). Bronze jars with ornamental/strengthening bands: bands with foliate design (9), double row of fluting (10), vertical flutes (11), ivy motifs (12-13), bull’s heads (14), wavy lines and dots (15), hatched pattern (16), figure-eight shields (17-18). Fragments of silver vessels with repoussé designs from Mycenae (19). Not to scale.
Bands with Dots. Orange bands with red dots on straight-sided cups (1, 3, 5, 8), bridge-spouted jars (2, 4, 6). Torus rings painted orange with red dots on jug (9), rhyton (10), stand (11). Orange band with white dots on straight-sided cup with crinkly (12) and shallow bowl with crinkly rim (13). Tumblers with vertical bands with dots (14, 15). Not to scale.
Linked Dots and Embossed Strips. Linked dot motif on small carinated cups (1-2); straight-sided cups (3-4); semi-globular cups (5-6); and a cylindrical spouted jar (7). Inlaid circles around rim and shoulder of electrum goblet from Mycenae (8). Embossed dots on gold goblet from Mycenae (9) and silver goblet from Midea (10). Repoussé dots on ceramic semi-globular cup (10-13) and bridge-spouted jars (14). Not to scale.
Embossed Strips (continued) and bands with dots. Dots surrounded by white paint on straight-sided cups (1-2) and bridge-spouted jar (3). Dark dots within white band on straight-sided cups (4-6) and semi-globular cup (7). White dots in row on straight-sided cups (8-9); semi-globular cups (10-11); and bridge-spouted jars (12-13). Not to scale.
Bands with Fluting and Chevrons. Ornamental band with fluting on bronze jar (1); ceramic straight-sided cups (2-3, 8-10); ovoid jars (4-5); and bridge-spouted jar (6). Repoussé band of fluting on demitasse (7). Straight-sided cup with possible bands of torsional fluting (11). Small carinated cup with possible band of fluting (12). Repoussé band of chevrons on bridge-spouted jar (13) and teapot (14). Painted chevron bands on bridge-spouted jar (15); rhyton (16); straight-sided cups (17-18); and stand base (19). Not to scale.
Bands with S-shaped motifs on semi-globular cup (1); bridge-spouted jar (2); and carinated cups (4-6). Detail of gold goblet from Mycenae (3). Lustrous sherd with stamped S-shapes (7). Evan’s (1921:269–270, fig. 200) evolution of the “foliate band” motif on ceramic vessels from MM IA to MM IIIA (8-12). Not to scale.
Bands with Foliate Designs (continued). Early examples of “foliate band” on tumblers (1-3) and bridge-spouted jar (4). Later examples of “foliate band” on straight-sided cups (5-8); bridge-spouted jars (9-11); and a semi-globular cup (12). Not to scale.
Chasing. Gold goblet (1), jugs (2-4), and necked jar (5) from EBA II/III sites in Anatolia with chasing work. Silver bowl from Töd with chasing and repoussé work (6). Stamped and incised ceramic semi-globular cups (7-9), small carinated cup (10), teapots (12-13), and bridge-spouted jar (14). Not to scale.
Repoussé Circles and Spirals. Semi-globular cup (1) and bridge-spouted jar (2) with repoussé circles. Metal semi-globular cup (3); straight-sided cup (4); jars (5-6); basin rim (7); and ornamental band on jar (8) with single row of spirals. Shoulder of metal jar (9) and silver bowl from Byblos (10) with double row of spirals. Ceramic bridge-spouted jar (11) and semi-globular cups (12–15) with repoussé spirals. Not to scale.
Repoussé spirals on semi-globular cups (1-3) and basin (4). Repoussé shells on straight-sided cups (5, 9); jug (6); and semi-globular cups (7-8). Metal jars with metal shells affixed to handle (10-11). Ceramic shell appliqués on rim of basin (12). Cut-out rim of ceramic basins with repoussé shells, spirals, and leaves (13, 15). Faience basin with appliqué shells. Not to scale.
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Inlay and Enamelling (continued). Ceramic jug (1) and small carinated cups (2-4) with “coffee bean”-shaped inlays. Tumbler/cup (5) and tumblers (6-7) with triangles / “foliate” band inlays. Ceramic straight-sided cup with imitation ajouré work (8), detail of bowl with imitation ajouré work (9). Detail of game board with “cloisons” (10). Gold goblet with traces of “enameling” substances (11). Ceramic cup with imitation inlay / enamel work (12). Bases of silver bowls with chased rosettes (13-16). Not to scale.
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ILLUSTRATION CREDITS

Plate 1.1  Soap in the shape of Lego blocks from the website “Cool Products That Look Like Other Things,” http://izismile.com/2011/08/26/cool_products_that_look_like_other_things_58_pics.html

Plate 1.2  Salt and Pepper shakers in form of batteries, from the website, “Cool Products That Look Like Other Things,” http://izismile.com/2011/08/26/cool_products_that_look_like_other_things_58_pics.html

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Plate 1.4  Swiss clock upon which Apple Clock is modeled, from article “Apple Pays Up 16 Million Dollars for iPad’s Clock; Swiss Railway Cashes In, from website http://tablet-news.com/2012/11/13/apple-pays-up-16-million-dollars-for-ipads-clock-swiss-railways-cashes-in/

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Plate 2.2  Minoan ceramic cooking pot from Apodoulou. Tzedakis and Martlew 1999:88, fig. 53. MM IIB.

Plate 2.3  Silver kantharos from Gournia. HM 201. Davis 1977:87–102, no. 12, figs. 66. Also, Hawes 1908, col. pl. C.1. MM IB.

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Plate 51.13  Bronze teapot with round body and narrow spout from Kayapınar, Anatolia. MAC 99-32-83. Toker 1992, fig. 34. EBA. Third millennium BCE.

Plate 51.14  Ceramic jar with holes in rim for loop handle (JAR 4) from Phaistos. F. 6149. Levi 1976, pl. XXXIXa. Also, Levi and Carinci 1988, pl. 74c. MM II.

Plate 51.15  Ceramic ovoid jar with holes for loop handles and painted ornamental bands (JAR 4) from Phaistos. F. 807. Levi 1976, pl. 138b. Also, Levi and Carinci 1988, pl. 70b. MM II.


Plate 51.18  Ceramic jug with torus ring and painted bands and checker pattern (JUG 1) from Phaistos. F. 1032. Levi 1976, pl. XXVIIib. Also, Levi 1976, pl. 77b; Levi and Carinci 1988, pl. 31l. MM II.

Plate 51.19  Ceramic jug with repoussé shells (JUG 1) from Phaistos. F. 1041. Levi 1976, pl. 77a. Also, Levi and Carinci 1988, pl. 27e. MM II.

Plate 51.20  Ceramic jug with ridges on neck (JUG 1) from Knossos. K. 196. MacGillivray 1998, pl. 131:873. MM IIB–IIIA.

Plate 52.1  Gold jug with cut-away neck and chased line decoration from Mahmatlar-Amasya, Anatolia. MAC 15076. Toker 1992, fig. 3. EBA. Second half of the third millennium BCE.

Plate 52.2  Silver jug with cut-away neck from Knossos. HM 404. Davis 1977:105, no. 14, fig. 78. Also, Evans 1928, fig. 221b. LM IB.

Plate 52.3  Ceramic jug with cut-away spout and painted vertical lines (JUG 2) from Phaistos. F. 880. Levi 1976, pl. 24f. Levi and Carinci 1988, pl. 30d. MM IB.

Plate 52.4  Ceramic jug with painted torsional lines (JUG 2) from Phaistos. F. 642. Levi 1976, pl. 92i. Also, Levi and Carinci 1988, pl. 32f. MM II.

Plate 52.5  Ceramic jug with painted vertical lines on lower half of body (JUG 2) from Knossos. K. 959. MacGillivray 1998, pls. 8:250 and 59:250. MM IB–IIA.

Plate 52.6  Ceramic jug with cut-away neck (JUG 2) with painted ornamental band and spirals. K. 664. MacGillivray 1998, pl. 20:566. Also, pl. 94:566. MM IIB–IIIA.
Plate 52.7 Ceramic jug with cut-away neck and painted circles (JUG 2) from Phaistos. F. 5476. Levi 1976, pl. XIVa. Also, Levi 1976, pl. 24e. Also, Levi and Carinci 1988, pl. 36b. MM IB.

Plate 52.8 Ceramic jug with cut-away neck (JUG 2) from Knossos. K. 663. MacGillivray 1998, pl. 20:567. Also, pl. 94:567. MM IIB–IIIA.

Plate 52.9 Gold jug with cut-away neck from Shaft Grave III at Mycenae. NAM 74. Davis 1977:237–238, no. 91, fig. 186. Also, Karo 1930, pl. CLI. LH I.

Plate 52.10 Ceramic jug with trefoil spout (JUG 3) from Knossos. K. 745. MacGillivray 1998, pl. 23:668. Also, pl. 110:668. MM IB–IIA.

Plate 52.11 Bronze jug with rounded body (JUG 4) from Eskeyapar, Anatolia. MAC 109-513-68. Toker 1992, fig. 32. EBA. Second half of third millennium BCE.

Plate 52.12 Bronze jug with long neck and “laid on” handle from Polatlı, Anatolia. MAC 10746. Toker 1992, fig. 10. EBA. Mid third millennium BCE.

Plate 52.13 Ceramic jug with “laid-on” handle (JUG 4) from Phaistos. F. 2244. Levi 1976, pl. 82e. Also, Levi 1976, pl. 80c; Levi and Carinci 1988, pl. 29b. MM IIA.

Plate 52.14 Ceramic jug with “laid-on” handle (JUG 4) from Phaistos. F. 1648. Levi 1976, pl. 81e. Also, Levi and Carinci 1988, pl. 29d. MM IIA.

Plate 52.15 Ceramic jug with molded torsional flutes (JUG 4) from Patrikiès. F. 2398. Levi 1976, pl. 16c. MM IA?

Plate 52.16 Ceramic jug with incised and repoussé gadroons (JUG 4) from Phaistos. F. 866. Levi 1976, pl. 28i. Also, Levi and Carinci 1988, pl. 29c. MM IB.

Plate 52.17 Ceramic jug with torus ring and painted “coffee bean” motifs (JUG 5) from Phaistos. F. 511. Levi 1976, pl. XLIVa. Also, Levi 1976, pl. 95d; Levi and Carinci 1988, pl. 38a. MM II.

Plate 52.18 Ceramic jug with flat rim (JUG 5) from Phaistos. F. 1914. Levi 1976, pl. 179d. Also, Levi and Carinci 1988, pl. 38b. MM IIB.

Plate 52.19 Ceramic jug with flat rim (JUG 5) from Knossos. K. 102. MacGillivray 1998, pl. 28:928. Also, pl. 135:928. MM IB–IIA.

Plate 52.21  Ceramic jug with square base (JUG 6) from Phaistos. F. 5303. Levi 1976, pl. XXXIib. Levi and Carinci 1988, pl. 29n. MM II.

Plate 53.1  Silver kantharos (KTH) from Gournia. HM 201. Davis 1977:87–89, no. 12, fig. 66. Also, Boyd Hawes et al. 1908. col. pl. C:1; Evans 1921:191, fig. 139a. MM IB.

Plate 53.2  Ceramic kantharos (KTH) from Isle of Christ, Malia. Davis 1977:89, fig. 67. Also, van Effenterre and van Effenterre 1963, pl. XLIV:7822. MM IB.

Plate 53.3  Ceramic kantharos with deep lobes (KTH) from Gournia. Evans 1921, fig. 139b. Also, Boyd Hawes et al. 1908:60, pl. C:2. MM IB.

Plate 53.4  Ceramic kantharos (KTH) from Gournia. Evans 1921, fig. 139c. Also, Boyd Hawes et al. 1908, col. pl. C:3. MM IB.

Plate 53.5  Ceramic kantharos (KTH) from Anemospilia. Sakellarakis and Sapouna-Sakellaraki 1997, fig. 393B. MM IIB–IIIA.

Plate 53.6  Ceramic kantharos (KTH) with votive kantharoi inside from Myrtos-Pyrgos. Cadogan 1977–78:75, fig. 12. MM II.

Plate 53.7  Ceramic pyxis with painted torsional flutes (PYX 1) from Phaistos. F. 172. Levi 1976, pl. 117l. Also, Levi 1976, pl. 69a. MM IIA.

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Plate 53.9  Ceramic rhyton in the shape of bull’s head from Phaistos. F.2592. Levi 1976, pl. LXVIIIa. Also, Levi 1976, pl. 162c; Levi and Carinci 1988, pl. 64f. MM II.

Plate 53.10 Ceramic rhyton in the shape of bull’s head from Phaistos. F. 1019a. Levi 1976, pl. LXVIIIb. MM II or MM III.

Plate 53.11 Ceramic rhyton (RHY 3) with clay rivet and torus ring from Phaistos. F. 1905. Levi 1976, pl. XLVb. Also, Levi 1976, pl. 115f; Levi and Carinci 1988, pl. 62b. MM II.


Plate 53.15 Ceramic stand (STD 1) from Phaistos. F. 1031. Levi 1976, pl. XXVIIa. Also, Levi 1976, pl. 62a; Levi and Carinci 1988, pl. 11h. MM II.

Plate 53.16 Ceramic low offering stand with cut-out petal rim from Phaistos (STD 2). F. 1053. Levi 1976, pl. XXVIIc. Also, Levi 1976, pl. 62b–c; Levi and Carinci 1988, pl. 10e. MM II.

Plate 53.17 Ceramic stand with petal rim and potential inlay motifs (STD 3) from Phaistos. F. 480. Levi 1976, pl. LXXIV. Also, 1976, pl. 175e; Levi and Carinci 1988, pl. 111g. MM IIB.

Plate 53.18 Ceramic stand with painted ornamental bands (STD 4) from Phaistos. F. 65 and F. 786. Levi 1976, pl. LXVI and LXV; pl. 160. MM II.

Plate 54.1 Silver teapot with vertical flutes and long spout from Byblos. BM 746. Davis 1977:80–81, fig. 60. Also, Montet 1928, pl. XCI. MBA.

Plate 54.2 Ceramic teapot with vertical flutes and long spout from Byblos. BM 747. Davis 1977:80–81, fig. 61. Also, Montet 1928, pl. CXII. MBA.

Plate 54.3 Ceramic teapot with long narrow spout (TP 1). F. 402. Levi 1976, pl. XLIvc. Also, Levi 1976, pl. 99i; Levi and Carinci 1988, pl. 44e. MM II.

Plate 54.4 Ceramic teapot with crinkly rim (TP 1) from Phaistos. Pernier 1935, pl. XXXIV. MM II.

Plate 54.5 Ceramic teapot with crinkly rim (TP 1) from Knossos. Hogarth and Welch 1901, fig. 24. MM I–II.

Plate 54.6 Silver teapot with tall neck from District of Çorum, Anatolia. Öğücü 1980:472, pl. XI:2. EB II.

Plate 54.7 Ceramic teapot with angled spout (TP 2). F. 2029. Levi 1976, pl. XVI. Also, Levi 1976, pl. 41c; Levi and Carinci 1988, pl. 46c. MM IB.

Plate 54.8 Ceramic teapot with laid-on handle (TP 2) from Malia. van Effenterre and van Effenterre 1963, pl. XXXV:8513. MM II.

Plate 54.9 Ceramic teapot with exaggerated spout (TP 3). F. 3095. Levi 1976, pl. 32c. Also, Levi and Carinci 1988, pl. 42i–k. MM IIA.

Plate 54.10 Ceramic teapot with exaggerated spout from Haghia Triada. Banti 1965–1966, fig. 8. MM IIA.
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Plate 54.12  Gold tumbler from Kültepe, Anatolia. MAC 119-7-64. Toker 1992, fig. 44. MBA.

Plate 54.13  Silver tumbler with torsional flutes from El-Tôd, Egypt. Bisson de la Roque 1950, pl. XVI:70618. MK. Twelfth Dynasty.

Plate 54.14  Ceramic tumbler with painted torsional “flutes” (TMB 1) from Phaistos. F. 2279. Levi 1976, pl. Xlf. MM IB.


Plate 54.18  Ceramic tumbler with painted ornamental bands (TMB 2) from Phaistos. Pernier 1935, pl. XXIlc. MM II.


Plate 54.20  Ceramic tumbler with ornamental bands (TMB 2) from Phaistos. F. 4556. Levi 1976, pl. LVla. MM IB.


Plate 55.1  Collection of bronze vessels found in tomb at Zapher Papoura. Evans 1906, fig. 33. LM IIIA.

Plate 55.2  Group of ceramic “creamy-bordered” vessels from Knossos. Evans 1935, pl. XXIX. MM IIB–IIIA.

Plate 55.3  Ceramic stand (STD 1) from Phaistos. F. 1031. Levi 1976, pl. XXVIIa. Also, Levi 1976, pl. 62a; Levi and Carinci 1988, pl. 11h. MM II.

Plate 55.4  Ceramic jug with torus ring and painted bands and checker pattern (JUG 1) from Phaistos. F. 1032. Levi 1976, pl. XXVllb. Also, Levi 1976, pl. 77b; Levi and Carinci 1988, pl. 31l. MM II.

Plate 55.5  Small ceramic carinated cup with painted ornamental band (CS CUP 4) from Phaistos. F. 446. Levi 1976, pl. 131d. Also, Levi and Carinci 1988, pl. 87d. MM II.

Plate 55.6  Ceramic bridge-spouted jar with painted ornamental bands (BSJ 5) from Knossos. K. 67. MacGillivray 1998, pl. 28:947. Also, pl. 139:947. MM IB–IIA.

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Plate 55.7  Ceramic straight-sided cup with ornamental band (SS CUP 1) from Knossos. K. 558. MacGillivray 1998, pl. 30:995. Also, pl. 148:995. MM II–III.


Plate 55.10  Bridge-spouted jar with painted vertical fluting (BSJ 3) from Phaistos. F. 268. Levi 1976, pl. 104a. Also, Levi and Carinci 1988, pl. 54f. MM II.

Plate 55.11  Small ceramic carinated cup with painted vertical fluting (CS CUP 2) from Phaistos. F. 980. Levi 1976, pl. 134b. MM II.

Plate 55.12  Small ceramic carinated cup with painted vertical fluting (CS CUP 2) from Phaistos. F. 193. Levi 1976, pl. 134d. MM II.

Plate 55.13  Small ceramic carinated cup with painted vertical fluting (CS CUP 2) from Phaistos. F. 154. Levi 1976, pl. 134a. MM II.

Plate 55.14  Ceramic jug with torus ring and painted “coffee bean” motifs (JUG 5) from Phaistos. F. 511. Levi 1976, pl. XLIVa. Also, Levi 1976, pl. 95d; Levi and Carinci 1988, pl. 38a. MM II.

Plate 55.15  Small ceramic carinated cup with painted “coffee bean” shapes (CS CUP 5) from Phaistos. F. 655. Levi 1976, pl. 133i. Levi and Carinci 1988, pl. 86e. MM II.

Plate 55.16  Small ceramic carinated cup with painted “coffee bean” shapes (CS CUP 5) from Phaistos. F. 5530. Levi 1976, pl. LIIa. pl. 131a. MM II.

Plate 55.17  Small ceramic carinated cup with “coffee bean” motifs (CS CUP 5) from Phaistos. F. 85. Levi 1976, pl. 133h. MM II.

Plate 55.18  Bottom of ceramic jug with painted “coffee bean” motifs from Phaistos. Pernier 1935, fig. 226 bottom middle. MM II.

Plate 55.19  Ceramic jug with repoussé shells (JUG 1) from Phaistos. F. 1041. Levi 1976, pl. 77a. Also, Levi and Carinci 1988, pl. 27e. MM II.

Plate 55.20  Ceramic straight-sided cup with repoussé whorls (SS CUP 5) from Phaistos. Pernier 1935, pl. XXXb. MM II.
Plate 55.21 Ceramic straight-sided cup with repoussé shells (SS CUP 5) from Knossos. K. 503. MacGillivray 1998, pl. 19:433. Also, pl. 82:433. MM IIB–IIIA.

Plate 56.1 Ceramic bridge-spouted jar with stamped spirals (BSJ 6) from Phaistos. Pernier 1935, pl. XXXV. MM IIB.

Plate 56.2 Ceramic semi-globular cup with stamped concentric circles (SG CUP 4) from Phaistos. Pernier 1935, pl. XXIVa. MM IIB.

Plate 56.3 Ceramic semi-globular cup with stamped concentric circles (SG CUP 4) from Knossos. K. 394. MacGillivray 1998, pl. 19:437. Also, pl. 83:437. MM IIB–IIIA.

Plate 56.4 Ceramic fragments of bridge-spouted jar with repoussé circles (BSJ 6) from Phaistos. Levi 1957–1958a, fig. 119 top. MM II.

Plate 56.5 Ceramic cup sherd with repoussé circles. Levi 1965–1966, fig. 67 bottom, top, second from left. MM II.

Plate 56.6 Ceramic semi-globular cup with repoussé circles (SG CUP 4) from Knossos. K. 401. MacGillivray 1998, pl. 19:430. Also, pl. 82:430. MM IIB–IIIA.

Plate 56.7 Ceramic bridge-spouted jar with molded horizontal sections (BSJ 4) from Phaistos. F. 4901. Levi 1976, pl. XXXIXd. Also, Levi 1976, pl. 107a; Levi and Carinci 1988, pl. 57g. MM II.

Plate 56.8 Ceramic bridge-spouted jar with hammered profile (BSJ 4) from Phaistos. F. 973. Levi 1952–1954, fig. 109e. MM II.

Plate 56.9 Ceramic demitasse with hammered profile (DT CUP 1) from Phaistos. F. 174. Levi 1976, pl. 123c. Also, Levi and Carinci 1988, pl. 82c. MM IIA.

Plate 56.10 Ceramic “situla-like” jar with loop handle (JAR 3) from Phaistos. F. 779. Levi 1976, pl. 116f. Also, Levi and Carinci 1988, pl. 67h. MM II.

Plate 56.11 Ceramic bridge-spouted jar with painted rosette motif (BSJ 8) from Phaistos. F. 428. Levi 1976, pl. 110d. Also, Levi and Carinci 1988, pl. 56o. MM II.

Plate 56.12 Small ceramic carinated cup with painted rosette motif (CS CUP 5) from Phaistos. F. 399. Levi 1976, pl. 131n. MM II.


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