

SECTION 1: POTTERY AND PAINTING PRACTICE

INTRODUCTION

In his last lecture, delivered posthumously by Karin Nys at the 8th Postgraduate Conference on Cypriot Archaeology (POCA) in 2008, Professor Paul Åström was concerned that current Cypriot ceramic studies might undermine the classification systems formally established in the 20th century (ÅSTRÖM *forthc.*):

“Younger generations of archaeologists develop new theories and methodologies with the results of the work of the older generations as a basis. Sometimes young archaeologists express a negative view on the cultural historical approach of the previous generation of archaeologists. Of course their classifications, typologies and chronologies must be refined in the light of new finds. But for the pioneers it was necessary to build up classifications, typologies and chronologies as a basis for future research.”

Without the dedication of the earliest pioneers and their determination to provide chronological parameters, this current research would not be possible. Without their instigation of excavations and research projects in Cyprus the material used in this study would not have been available. This current study does seek to continue to further our knowledge of the behaviour of communities of potters in the Middle to Late Bronze Age. This may ultimately have a bearing on how ceramics have been used as a foundation for the relative chronology of Cyprus and the East Mediterranean.

The following research into White Painted Wares (WP) in the Middle Bronze Age, and its subsequent impact on our interpretations of Proto White Slip (PWS) and White Slip (WS) wares characteristic of the Late Bronze Age, originates within the research goals of the Synchronisation of Civilizations in the Mediterranean in the Second Millennium BC (SCIEM 2000). The internal development of Cyprus, with specific reference to the complexities of regional analysis, has been a major focus within the SCIEM 2000 project (HEIN 2009, 40). The regionalism project underpins the importance of studying material in its environment and any relative chronological sequence within that location. The incredibly rich resource of ceramics on the island offers a tantalising

glimpse of the social environment of distinct communities, at the same time making the task of synchronisation a complex one.

In the Middle and Late Bronze Age periods, pottery, and probably commodities within pottery vessels, was exported across the East Mediterranean, Anatolia and Egypt. Given the strategic maritime location of Cyprus in an interlinking seascape (MANNING and HULIN 2005, 277, fig. 11.1), it is no surprise that Cypriot goods were exported, but the mechanisms by which they were circulated in the Mediterranean are not fully understood. Synchronising the civilisations of the Mediterranean through the appearance of these exports in local sequences around the Mediterranean is a major aim of the SCIEM 2000 project (BIETAK *et al.* 2008). The Cyprus department within the SCIEM 2000 frame has focussed on the export of Bichrome Ware in the Late Bronze Age (HEIN *etc.* *forthc.*) but it has also been aware of the need to understand the internal development of Cyprus (HEIN 2009).

The aim of this present study is to understand the ceramic development across the island to allow, for example, any synchronisation processes using pottery to be as meaningful as possible. This is especially difficult since it is generally agreed that the internal sequence within Cyprus suffers from the hangovers of an enforced island-wide chronological sequence. This arose through the classification of pottery from multiple tomb groups and intermittent synchronisms with Crete at the inception of the Middle Bronze Age. While over one thousand vessels have been recorded as exports to the Levant and Egypt in the Middle Bronze Age, they do not provide island-wide synchronisms. The bulk of the material exported appears to come from the south-east of the island from the excavated settlements of Enkomi and Kalopsidha (MAGUIRE 2009a). For this reason, caution in establishing the absolute chronology for the whole of the island has previously been called for (MAGUIRE 1992). In the series of levels excavated at Tell el-Dab^ca and elsewhere in the Levant, however, it is quite clear that there is a succession of exported wares e.g. White Painted Pendent Line Style (WP PLS) predates White Painted V (WP V), White Painted Cross Line Style

(WP CLS) spans from the same timeframe as WP PLS and is contemporary with WP V; WP V and Red on Black (RoB) predate PWS but are probably contemporary with it, and all of the aforementioned predate WS and Base Ring (BR) (BIETAK *et al.* 2008). This is the general consensus of the succession of wares as they were produced in Cyprus although we still do not know whether consumption and deposition in Cyprus are reflected in the settlement or mortuary record of the rest of the Levant. We also have some preconceived ideas about the distribution of ceramics and their apparent social, political and cultural meaning (see FRANKEL 2009, 19–20). This has led to attempts to present an “historical evolution” (MERRILLEES 1971) of the beginnings of the Late Bronze Age based primarily on the evidence of the distribution of ceramic styles of pottery. This culture-historical approach, in which “spatially delimited clusters of pottery Wares...constitute separate and distinct cultural provinces throughout the island during the Bronze Age...” (MERRILLEES 1979, 125), is not able to take into account underlying fusions between distinct communities since it relies solely on stylistic parameters to interpret social behaviour.

This research will search beyond the hierarchical stylistic measurements used in ceramic classification. It will seek to examine the subconscious behaviour of the practitioner. Before embarking on this study of embedded behaviour in pottery painting practices across the island, an overview of the current classification system and its importance is necessary.

CERAMIC CHRONOLOGY AND CLASSIFICATION

There were many antiquarian investigations in Cyprus at the end of the 20th century which were largely unscientific. They produced a large number of artefacts from the Bronze Age, primarily from tombs. The ceramic material was classified into types in an age when type-fossils were *de facto*. These types were thought to illustrate cultural classes which could be attributed to races which were classical or primitive (MAGUIRE 2009a, 69ff). In the era of the 1920s and 1930s, however, when the methods of Oscar Montelius were internationally well received, the pioneering Swedish Cyprus Expedition, led by Einar Gjerstad (1927–1931) sought to examine, systematically, the archaeology and chronology of Cyprus. The specific intention of these pioneering individuals was to establish the chronological development of the island as a whole. The legacy of their meticulous methods and detailed observations of thousands of artefacts from settlement, sanctuary and tomb excavations is admired to this day. Following in the footsteps of Gjer-

stad and his colleagues, Paul Åström continued to expand our knowledge of the later Bronze Age chronology and ceramics by publishing the sections on the Middle and Late Bronze Ages (ÅSTRÖM 1972a, 1972b). Porphyrios Dikaios and James Stewart presented the Early Bronze Age (DIKAIOS and STEWART 1962) within the same Swedish Cyprus Expedition series of publications. Fundamentally, these scholars produced a typological and chronological framework through the detailed analysis of artefacts from tomb and settlement evidence. This provided a greater insight into the workings of ancient Cypriot societies than had ever been previously attempted on this scale. Nevertheless, there are still inherent difficulties in the standard classification system which relies on top-down, hierarchical style, shape and motif categories.

Paul Åström showed that while a chronological perspective was essential in these times of limited settlement archaeology, many more inferences on the distribution of ceramics could be realised. He endeavoured at every opportunity to glean more information on the social archaeology of Cyprus through archaeological investigation. The nomenclature used to divide the WP Wares included chronological divisions WP II–VI. This suggested a broad evolution from WP II–VI and that while wares and styles overlap they generally succeed one another in the MCI–III framework. The bulk of the pottery used in the classification, however, does come from the north of the island from tombs but it has been unified with the south, centre and south east of the island even though there are no examples where styles of the north, centre and south or south east are found in relative stratigraphic sequences. Presence and absence seriation from tomb groups has been the only alternative.

Although ware groups exist in the White Painted sequence, they have also been divided into stylistic groups, primarily based on distinctive motifs such as White Painted III–IV Pendent Line Style or White Painted IV–VI Cross Line Style (ÅSTRÖM 1972a). These are ideal descriptive labels and researchers know which class of pottery is being referred to. The wider social significance of this pottery is not clearly defined. Beyond these most popular styles, other distinct groups have not been isolated. This is probably due to the motifs on many other vessels being more complex in their design structure. The stylistic attributes were thought to characterise separate cultural areas: a linear style representing an Eastern cultural area while geometric motifs more representative of a Northwest cultural area (ÅSTRÖM 1972a, 275). In some instances styles were not derived from observing

design element variation but from functional or technological variation. In White Painted V Fine Line Style (WP V FLS), the execution of the motifs is the defining characteristic. In White Painted III–IV String Hole Style (WP III–IV SHS), the addition of perforated or unperforated clay nodules positioned mid-neck, base of neck and on the handle terminals defines the style, even though string-holes are found across styles. For example, string-hole projections are found on White Painted III–IV Wavy Line Style (WP III–IV WLS) at Galinoporni Tb 2 and Ayios Iakovos Tb 7 no. 1 (GJERSTAD *et al.* 1934, pl. CVIII.9). Ultimately, certain styles occur abroad and they have been used to link an island-wide Cypriot sequence to absolute chronologies (ÅSTRÖM 1987, MERRILLEES 1977, 1992, 2002). The fact remains that very few sites of the Middle Bronze Age and early Late Bronze Age, with the exception of Kalopsidha (ÅSTRÖM 1966) and Enkomi (DIKAIOS 1969), have produced relative stratigraphic sequences. The styles which are exported abroad occur primarily in tombs, and in the eastern part of the island. We know very little of the spatial and temporal development of these ware groups and styles but, with the publication of more material, our knowledge is constantly expanding (MAGUIRE 2009a, 26ff).

This relative sequence, built up primarily from the seriation of ware groups and their styles, can then be calibrated by synchronisms with other chronologies in the East Mediterranean and Egypt. There are well-known synchronisms from Egypt and the Levant which can assist with the calibration of eastern Cyprus to the mainland (MAGUIRE 2009a). At the beginning of the Late Bronze Age, Aegean, Egyptian and Levantine synchronisms are found in the north-east of the island, for example, at Morphou-Toumba tou Skourou (VERMEULE 1974, VERMEULE and WOLSKY 1990a). In the established Late Bronze Age, given the apparent standardisation of local ceramics and the increase in mainland imports, the absolute dates of chronological synchronisms seem more easily applied to the island as a whole.

There are some famous artefacts used in synchronising and creating the absolute chronology of Cyprus at this time: the Minoan Kamares Ware cup found at Karmi (STEWART 1963); a Minoan bridge spouted vase from Lapithos (GRACE 1940); the Canaanite jars at Vounous (ROSS 1994) and perhaps, infamously, the White Slip I bowl from Thera (WIENER 2001). Daggers and faience beads have also been identified as coming from Crete and the Levant (see synopses by PHILIP 1991, 85ff, SORENSEN 2006, KEHRBERG 1995). The imported materials are far from being fixed points in time, however. These seminal pieces highlight that

individual pieces belong to long relative sequences in the land of origin and often call into question the absolute chronology already suggested for the Early and Middle Cypriot periods (ROSS 1994, 24–25, KEHRBERG 1995, 195, SORENSEN 2006). From an Aegean perspective, cross-references of Cypriot material found on Thera are not without their own problems (SEWELL 2001, 22ff). MAGUIRE has suggested that where horizons of exports exist, it may be possible to marry a span of dates, obtained from the exported material, with the relative seriation of pottery from excavated settlement sites with long established sequences (MAGUIRE 1992, BIETAK *et al.* 2008). This is a challenging task. Much of the excavated material for the Middle Bronze Age era comes from the very large tomb groups at Lapithos. These tombs were used for multiple interments and over several generations. The seriation of pottery types in these contexts was an important chronological tool at the time of excavation. Since we do not have a settlement sequence from the same era and in the same area, we cannot assess whether the pottery was produced solely for mortuary use or whether it was used in a domestic context and then deposited in the tombs. The settlement of Kalopsidha-Tsaoudhi Chiflik in the east of the island does provide a general sequence of ware types from the Middle to Late Cypriot period as revealed by the strata in Trench 9 but it may suggest non-domestic use (CREWE 2010). However, with the recent synchronisms offered by the settlement excavations of Maroni-Vournes (CADOGAN *et al.* 2001); the WP V FLS found at Kissonerga-Skalia (CREWE *et al.* *forthc.*); the detailed excavation of a burial group at Nicosia-Ayia Paraskevi complete with Levantine connections and WP V Fine Line Style (GEORGIU 2009), and the discovery of WP V Fine Line Style, Red Polished (RP) IV and RP Pencil Burnished variant at Tell el-Dab^ca, Egypt (MAGUIRE 2009a, 31–32), the synchronisation process can begin to include the rest of the island.

Since the 1970s, ceramic studies have built on the initial scientific descriptive techniques used in the classification of data. Researchers have also engaged in analytical procedures to address social behaviour (FRANKEL 1974a). Extensive studies of ceramics from excavation sequences have sought to verify chronological viewpoints and reveal the salient features of societies engaging in such prolific ceramic production and distribution (KARAGEORGHIS 2001, BARLOW *et al.* 1991). Settlement sequences from Marki-Alonia (FRANKEL and WEBB 1996, 2006); Episkopi-Phaneromeni (SWINY 1986), Pyrgos-Mavrokaki (BELGIORNO 2007) and more recently Kissonerga-Skalia (CREWE *et al.* *forthc.*) and the cemetery site of Deneia

(FRANKEL and WEBB 2007), are beginning to provide local stratified sequences and “ceramic signatures” (FRANKEL *et al.* 2007, 154ff). Crewe has re-examined the Enkomi ceramics from the Middle and Late Bronze Age from a technological perspective (CREWE 2004, 2007). This has questioned our interpretations of how Cyprus entered statehood and sheds light on the gradual changes which led to centralised control in the later Bronze Age.

While there are limitations with the current classification system it nevertheless offers umbrella terminology and broad chronological horizons. Researchers have used the ware and style terminology but have continued to examine ceramic variability at the local and individual level to which we can now turn.

LOCAL VARIATION

Frankel’s seminal research on motif analysis (1974a) diverts the focus from the “all-encompassing typologies and the island wide frame of reference” (1991, 241). He considered the proportional occurrence of design elements from tomb groups which contained White Painted Ware. He then calculated the relationship between these groups. Decoration was analysed independently of functional and technological variation as it was thought to be “a sensitive indicator of any cultural differences” (FRANKEL 1974a, 7). His results showed that the island could be divided into a series of overlapping regions unified mainly by their

interest in the copper trade. The Karpas is characterised by wavy line style; the centre of the island by complex motifs in horizontal bands and the North Coast Style by a heavy formal style using vertical cross-hatched panels (FRANKEL 1974a, 47, 51). Frankel suggests that pottery was manufactured on a household level with communities making their own wares. The spatial distribution of the proportionate occurrence of individual motif element, he maintained, was indicative of social grouping. He also advocated that it is necessary to look beyond the existing classification systems and exploit ceramic variables to achieve specific ends. This is where variability at the individual scale and regional scale can produce results which have different meanings. These meanings are not necessarily related to the monolithic classification systems (FRANKEL 1988, 1991). Broader scale analyses can illustrate that style groups are distinct, and the greater the distance the less similarity between styles, which could indicate that certain areas were in closer contact (FRANKEL 2009, fig. 3).

Analyses of the uniformity of vessel shapes and quantity of vessels deposited across broad groups of tombs, regardless of ware type or style, suggested originally that pottery was deliberately selected from domestic households and was produced by non-specialists (FRANKEL 1988, 50) although more recent studies of household sizes have shown that a degree of craft specialisation did exist (FRANKEL and WEBB



Fig. 1 Map of Cyprus

2001). The magnitude of production in the Late Bronze Age significantly increased, however, when "pottery was mass produced in large quantities and distributed across the island" (FRANKEL 2008, 33)."

INDIVIDUAL VARIATION

ÅSTRÖM (1972a), within his White Painted II–V groups, identified a number of vessels which he felt could be attributed to the same potter or workshop: a WP IV flask from Lapithos Tomb 315A.14 and a WP IV flask from Lapithos Tomb 21 are by the same hand (1972a, 181); a WP II jug from Lapithos Tomb 315 B-C.6 and a WP II amphora from Vounous Tomb 38.19 are probably by the same potter (1972a, 16 n. 12); a WP IV tankard from Lapithos Tomb 29 and a WP IV tankard from Lapithos Tomb 204 (1972a, 184) and a WP II spouted jug and WP II tripod bowl, both Lapithos Tomb 9 are thought to be made by the same person (1972b, 15, 183).

ÅSTRÖM also drew attention to a "group of bowls, jars and jugs characterized by a decoration with very fine, thin lines" (1972a, 77) within the White Painted V ware category. Although specific to the WP V category he did also refer to this same execution on a White Painted III vessel from Dhenia Kafkalla Tomb 6 (ÅSTRÖM and WRIGHT 1963, 244, pl. II.4) where "the decoration, drawn with exactitude, and presenting a mechanical appearance is more varied than in the standard type." (1963, 272). He considered that these could have been made by the one workshop.

HERSCHER (1978, 735) also noted that in other ware groups there was evidence of a potter's work in the chambers of Lapithos Tomb 806 or 6A at the early part of the Middle Bronze Age. She also identified potters in Red-on-Black Polished Ware from the Karpas (HERSCHER 1973). The Red-on-Black Polished potters' groups were extended by MORRIS (1985, 341ff). By looking at themes of decoration, motifs and execution (e.g. number of lines per cm) the work of an individual artist was isolated. Neither Herscher nor Morris take into account the design sequence, brushstroke morphology or brushstroke direction in their analyses. Morris, for example, isolates two artists whose work is related: "Fine Line Style A, B" and "The Fine Line Mimic" artist. It may now be possible to determine if the latter artist were working in the same learning framework as the Fine Line Style artist rather than just copying the style. This would note the design sequence of the artist and the stop and start points of the tool across the vessel. Did the Fine Line Artist Style B always start to the left of the string hole (MORRIS 1985, 345, pl. 305a) ? This behaviour is also seen in Fine Line Artist Style A (1985, 344, pl. 304b) and the Fine Fir-tree artist

(1985, 350, pl. 315b). Similarly, the Open Zig Zag artist, (MORRIS 1985, 348, pl. 313a) has a different design execution sequence from two others in its group (MORRIS 1985, 349, pl. 313 b,c). This piece has the same structure and design execution sequence as the Fine Line Style Artist. An added difficulty in assessing the work of an individual in Cypriot Bronze Age ceramics presents itself in the form of deliberate variability. This is evident at the cemetery site of Deneia where a quantity of Red Polished Black Top bowls seem to have been made with an intent to make each vessel unique and, while not all are of the same potter, some are likely to have been (FRANKEL and WEBB 2007, 103).

FRANKEL, like ÅSTRÖM, thought that it was possible to define several individual potters within the White Painted Wares. He considered this a difficult task since the motifs were standardised and simple. He suggested that where there are less stylistic similarities, contacts between areas did exist as evidenced through the work of individual artists in these different areas (FRANKEL 1974a, 50, 1974b, 43). FRANKEL identified a potter's work, which he surmises originated in the Politico area (Fig. 2). Examples have also been found at Galinoporni-Trachonas (hereafter Galinoporni), Nicosia-Ayia Paraskevi/Agia Paraskevi (hereafter Ayia Paraskevi) and Livadhia-Kokotes (hereafter Livadhia) (Fig. 2, 3, 4, 6). FRANKEL collated the group based on the "fabric, appearance and use of cross-hatched chequers" (1974b, 43). Closer examination of the brushstroke morphology of the vessels from Ayia Paraskevi (Fig. 2.4) and Politico-Chomazoudhia (hereafter Politico) (Fig. 2.5) suggests that the potter has used a thick brush for outlines (0.3cm) and a thinner one for infill (0.1cm). The design structure of these two vessels, along with the decoration on the back of the handle, the protrusion on the handle and the distinctive formation of the stringholes, all indicate that these two vessels are made by the same potter. While some of these features appear on the Livadhia vessel, Fig. 2.6, the design structure and stringhole formation suggest a different hand.

The design structure of the Politico vessel (Fig. 2.5) is quite distinctive. The potter divides the vessel in half; the divisions run down the back of the vessel on either side of the handle and from the neck down the front of the vessel to the base. This leaves pear-shaped sections on the sides of the vessel which have been infilled with chequer squares. It is obvious that the flask from Ayia Paraskevi (Fig. 2.4) is similarly structured. The axis from the handle to the front of the vessel has been divided with two sets of two parallel lines and horizontal infill. The opposite axis, which frames the stringholes, is divided by two sets of

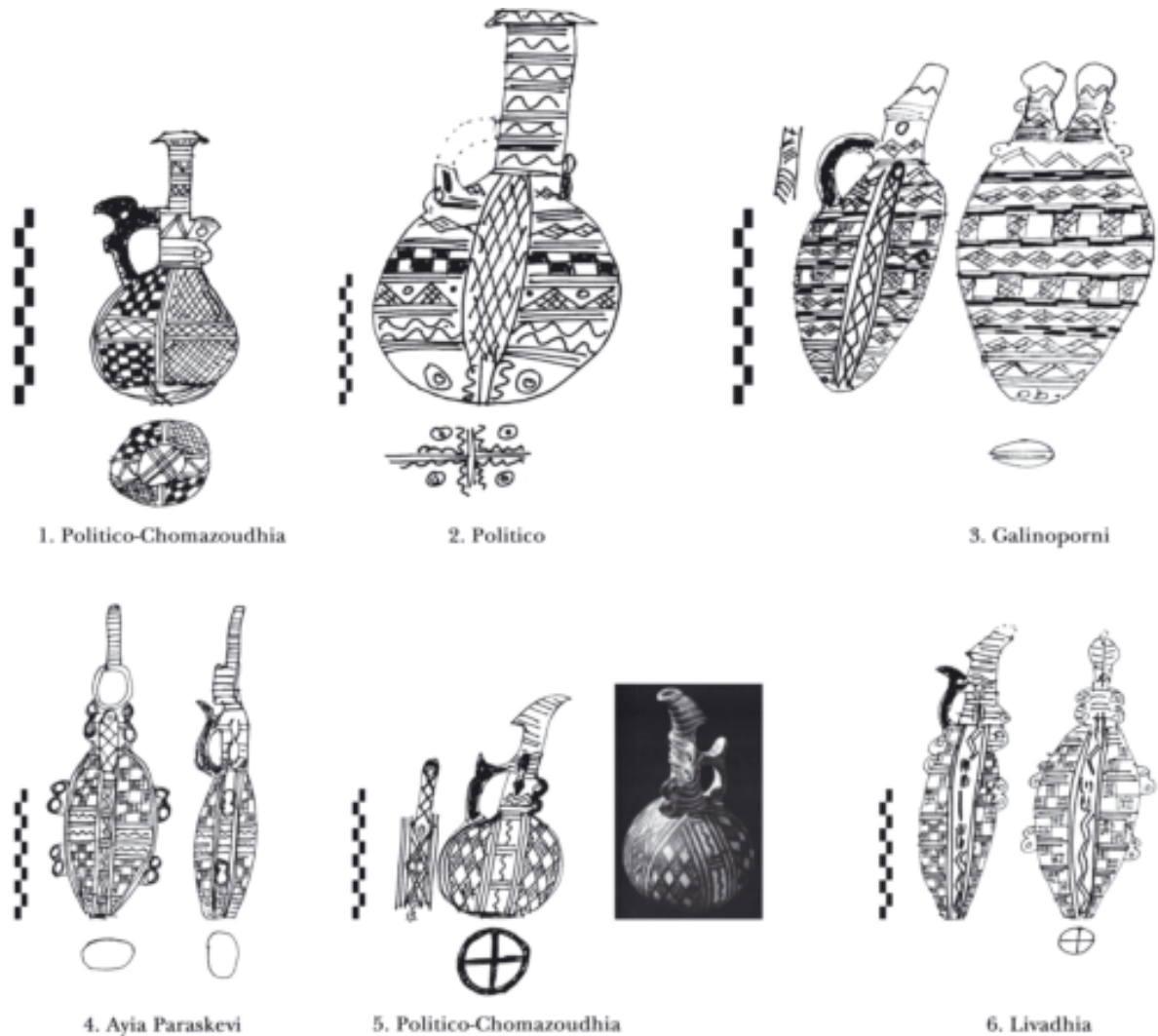


Fig. 2 Politico Potter after FRANKEL: 1. Politico-Chomazoudhia Tb 3.IV Cyprus Museum A714 (GJERSTAD 1926, 157, Jug 154, FRANKEL 1974a, 76); 2. Politico Tb 4 no 152, (FRANKEL 1974a, 75); 3. Galinoporni Tb 2 150 Cyprus Museum 1956/III-7/6 (FRANKEL 1974a, 70); 4a, b. Ayia Paraskevi (bought) Cyprus Museum 1958/1-17/4 (BUCHHOLZ and KARAGEORGIS 1971, no. 1564); 5a, b. Politico-Chomazoudhia, Cyprus Museum CM A715 (FRANKEL 1974a, 76; KARAGEORGIS 1969, 143, pl. 149); 6. Livadhia MLA 166 Cyprus Museum 1942/IV-17/2 probably Tomb 1 (bought) (FRANKEL 1974a, 73, ÅSTRÖM 1974, no. 4a, pl. X.1-3).

three parallel vertical lines framing horizontal infill. This leaves oval panels similar to the pear-shaped sections on the Politico juglet.

However, the other vessels in Frankel's Politico group do not display the same design structure or brushstroke execution as the bottle from Politico. The bottle from Politico, Fig. 2.1, while using three parallel lines as vertical and horizontal dividers, uses an extremely fine brush (0.1cm) and these dividing lines do not act as a bold outline for narrower infill, as we have seen in the Ayia Paraskevi (Fig. 2.4) and

Politico juglets (Fig. 2.5). The Galinoporni and Livadhia flasks appear to be similar but have not followed the same design sequence or structure as the pieces from Ayia Paraskevi and Politico. While all of the pieces suggest an "emblemic" style, which uses chequers and cross hatching, they are not all necessarily of the one potter as FRANKEL originally suggested. In the case of the Politico bottle (Fig. 2.1), we can actually class the execution and design structure with another group. This has been illustrated in Fig. 3. The design structure of this group as well as the com-

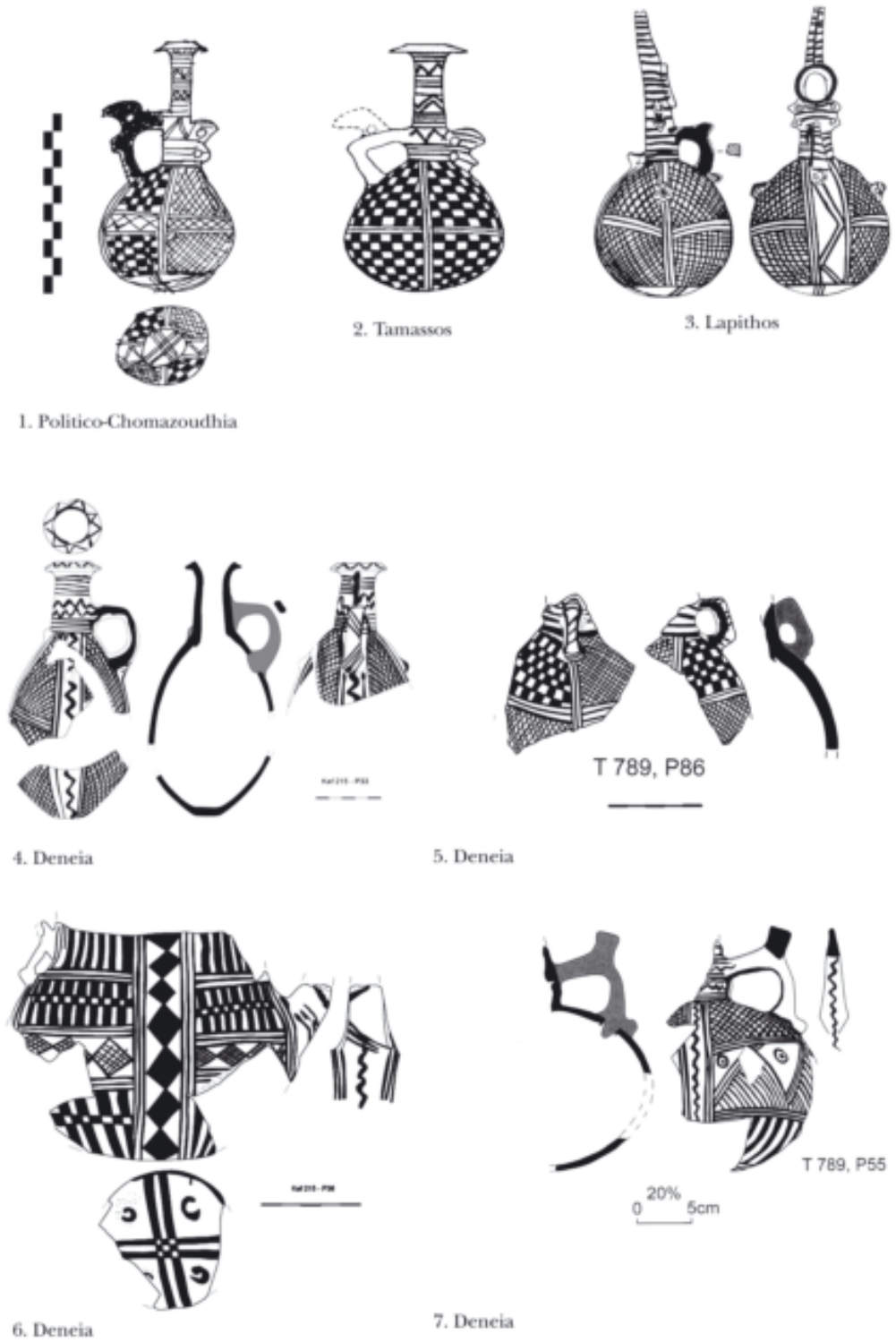


Fig. 3 Politico-Chomazoudhia and its design structure grouping



Fig. 4 Lapithos 702 and 315 individual group

position, brushstroke thickness and shape repertoire, belongs to a group which has examples at Dhenia/Deneia-Kafkalla (hereafter Dhenia), Lapithos, Tamassos (Politico), Ayia Paraskevi (GEORGIU 2009, fig. 1.3) and Lapithos-Kylistra Tb 702. In turn this group can be linked to the stylistic and possible community grouping of White Painted V Fine Line Style, see below page 43.

Hennessey (HENNESSY *et al.* 1974) also looked at individual artists from the Early and Middle Bronze Age. He identified up to 80 examples of the one artist working in Red Polished incised ware. “The clays of the pots were uniform, slip and polish were consistent, both in colour and treatment, the incised ornament, with a basic minimum of patterns, was highly distinctive and individual quirks were often visible in the execution of the design.” (*ibid.*, 11). Hennessey suggests that it is possible to identify at least 10 artists in this way, in addition to the four which he illustrates. He argued that the potter and artist are one and that

the potter worked with a wide range of shapes. Hennessey was convinced of his observations, but he did not quantify or replicate the artist’s work. In the case of Hennessey’s “Dhenia Artist” Frankel and Webb suggest that given the “sheer of quantity of pottery ...that we are dealing with a regional or, rather, site-specific style rather than the output of an individual or small number of highly idiosyncratic potters.” (FRANKEL and WEBB 2007, 153). Following on from Frankel’s Politico group, he did illustrate that further groups could be isolated mainly through similarity and idiosyncrasy. However, so few sets existed within the variability of an individual’s output that Frankel considered this method of analysis not only less fruitful, but very subjective (FRANKEL 1991, 247–248, and fig. 25.3). He focussed on the distinctive ceramics of Lapithos-Kylistra Tb 702 (hereafter Lapithos) and Lapithos-Vrysi Tou Barba Tb 316 (hereafter Lapithos) and his observations are a personal assessment. He groups together three items of the one potter (Lap-

ithos Tb 316 64 and 4; and Lapithos Tb 2 36) primarily from design elements such as distinctive motifs and design structure e.g. axial dividers (Fig. 4).

Expanding this assessment, he can incorporate two tankards from Lapithos Tb 702 since they also use specific uncommon motifs and axial divisions in the same

manner and to this can be added a bottle from Lapithos (Tb 702 36). Since the material in Tb 702 is generally considered later than Tb 316, this may show a potter's work through time (FRANKEL 1991, 249).

FRANKEL (2001, 9, and fig. 3) presents another group from Ayia Paraskevi and Dhikomo. This group



Fig. 5 Ayia Paraskevi and Dhikomo potter group (after FRANKEL 2001)

is also based on degrees of similarity where the chequer bands dividing registers of cross hatched zig-zags and lozenges form a coherent group. We could also add a piece from Enkomi (FRANKEL 1983, cat.no. 733) and two from Lapithos (ÅSTRÖM 1972a, fig. XIII.9 Lapithos Tb 320.24; 60, fig. XIV.2 Lapithos 315A.86). A flask of this same style, White Painted IV (chequers and lattice diamonds) but not necessarily of the same potter, has been found in the region of Kayseri (KOZAL 2006, 114, cat.no. 88, GENOUILLAC 1926, 22, pl. 35.132), but its provenance has been debated as it was purchased and may have been part of the antiquities market (ÅSTRÖM 1972a, 216). This style is very typical of Ayia Paraskevi and would be one of the few styles of the central area to be found abroad, the other style being WP V FLS which is found at Tell el-Dab^{ca} (MAGUIRE 2009a, 23). ÅSTRÖM (1972a) may be right in questioning the provenance since, of the 1500 pieces surveyed, this WP IV flask would be the only one of its kind to have been exported, but it would be intriguing if two very specific workshops, namely WP IV (chequer and lattice diamonds) and WP V Fine Line Style, both found at Ayia Paraskevi (GEORGIU 2009, FRANKEL 2001), were reaching such far flung locations as Kayseri, Anatolia and Tell el-Dab^{ca}, Egypt.

MAGUIRE (1991) further investigated WP V Fine Line Style and collated examples of the style which appeared to be the work of one potter or a group of potters which may belong to the same community or workshop. The distribution of the examples appeared to be on a north-south island axis but any measurement of individual variability was not undertaken, other than a ratio of maximum diameter /maximum height and maximum diameter to the height of maximum diameter. This did show that the WP V Fine Line Style examples clustered together in contrast to the wider measurements of WP Cross Line Style vessels (MAGUIRE 1991, 43, figs. 6 and 7). The pottery group did appear to be cohesive in terms of technique, decorative motifs, shape and design structure but by far the most distinctive feature of this style was the execution of the brushstroke and the use of a very fine brush (0.1cm thickness and less). As mentioned above, there is a significant advantage in knowing the temporal and spatial distribution of a workshop. WP V Fine Line Style has been found at Tell el-Dab^{ca} and its occurrence in stratified levels at this international port offers a chronological synchronism to the distribution of this ware in Cyprus (MAGUIRE 2009a, 31ff, GEORGIU 2009). More recently, the first example of WP V Fine Line Style from the west of the island has been discovered in a context of

MCIII–LCI date at the site of Kissonerga-Skalia (CREWE *et al.* forthc.).

DISCUSSION

Determining cross dates for pottery such as WP V Fine Line Style as part of a broad stylistic group, which may or may not be regional, is important but if the pieces could be attributed to a particular individual or group of individuals, measurements of time, based on generational intervals, would be advantageous. Whatever the case, even pottery found within historical sequences can only be dated within forty years and even then “curated heirlooms” could extend that date (LUCAS 2005, 107). The monolithic, stand alone fabric and chronological labels of the White Painted classification may mask actual continuity in the use of certain design attributes. The broad evolution from WP II–V may signal that consistently higher temperatures achieved in the firing process were reached towards the end of the WP II–VI sequence. Or is this a fallacy too? Are we classifying clays which have reached lower temperatures as WP II–IV and those that have reached higher ones as WP V and WP VI? Have we relied on shape criteria to signal change when it is quite clear that different shapes are preferred by certain potters?

Lapithos Tb. 306A^{II}.14, which is a classic WP II vessel in shape, fabric and the use of lattice panelling as well as in the monochrome base, is from the MC I period and can be compared to a juglet from Kythrea Tomb 1 (CM A710) which is a classic example of WP V in terms of fabric, finish and brushstroke execution. However, chronologically, they are perceived to be between at least 100 and at most 150 years apart since Lapithos Tb 306A 14 is MCI (50 years duration); MCII intervenes for 50 years; and Kythrea Tb1 A710 is from MCIII, and probably the end of that period, which is a further 100 years duration. It has always been made clear that the divisions for the MC period are approximate (MERRILLEES 1977, 40, ÅSTRÖM 1972a, 274). The presentation of the “progressive and uninterrupted progress of Cypriote Bronze Age cultural development” into periods, which “kept to the same natural rhythm and therefore took up approximately the same amount of time” (MERRILLEES 1977, 40) is theoretically challenging. Relative chronology and periodisation “presents time as a uniform, linear phenomenon which has tended to define the model for historical explanation in a similar, uniform, linear way” (LUCAS 2005, 10). This seems to be true for the chronological framework of the Middle Bronze Age of Cyprus. While pottery is used to measure time through type series, the reality is that the changes in the type series could be gradual, multi-temporal or unrelated

to time. In these two pieces we may be witnessing a shorter time span than the artificial periods constructed. We are faced with a dilemma in narrating the pre-history of Cyprus since the markers of time that have been traditionally employed are the stylistic and typological nuances of decorated pots. Conversely, we are often faced with tracts of empty time in the Red Polished sequence where diagnostic changes in design are less frequent. There are many discourses on the circularity of linear development of pottery styles even in historical periods e.g. Archaic Korinth (SHANKS 1999, 42) or Roman Britain (LUCAS 2005, 97ff) where pottery sequences provide very little accuracy.

In a simple model the female generational interval is calculated as 25 years (FENNER 2005, 421), and we presume that the potters are female (FRANKEL 1974a, 11), then we can assume that these two pots are *at least* 4 generations apart and at the most 8 (Table 1). If these two vessels did represent the work of one potter through time, this could cover 1–3 generations. To substantiate the close connection between these two vessels, it can be observed that the design execution sequence of the brushstrokes is the same. The lines encircling the girth, in both instances, are done in parallel short strokes starting in the same place. The panel framed bands are done in two strokes as the brush needed to be reloaded with paint. In the majority of cases the vertical bands are done in one stroke.

The lattice panelling is a feature common to the WP II, III and IV periods and is either unframed or framed with one to three parallel lines. The lattice panel is quite rare in WP V; in fact it is mostly used in WP V Fine Line Style. Alternating with the lattice panel are panels filled with cross-hatched lozenges. These are created in exactly the same way on both vessels. A diagonal cross is started pending from the neck and a further cross is added at the base of the first cross and so on. Depending on the size of the panel, the lozenge is finished on the point or intersected on by the encircling bands. The necks are formed to the same shape with the same tapering to the mouth and insertion at neck (Fig. 6.1–2).

If we also examine the total design structure of the two pieces in question we can see that they follow the

same design execution sequence Fig. 6. 1–2. The two are demarcated into 4 zones, A-neck, B-body, C-girth, and D-base and have encircling lines three-quarters down the vessel. The encircling lines around the body have been done first and the vertical panels filled with alternating lattice panels and lozenge panels have been added. The area below the handle in both cases has been divided into a panel and infilled with incidental motifs not used on the rest of the vessel. Both vessels have been worked in a left to right direction while the pot was held upright. The first panel painted is to the right of the handle. The potter continued to work from this point around the vessel until the potter reached the left of the handle. Other examples from this design group come from Lapithos Tb 303B, WP III (ÅSTRÖM 1972a, fig. VIII.5) and Vounous Tomb 57.24, WP III (DUNN-VATURI 2003, 55, pl. XXVII) (Fig. 6.3–4).

These examples may indicate that design structure remained constant while technical changes, such as higher firing temperatures or the ability to sustain optimum temperatures in improved pit firing or even kiln firing, significantly altered texture, appearance and finish of vessels. The division of the vessel into a frieze of vertical panels; the pending diamonds with an open triangle at the top and the direction of the panelling on the cross hatching are all linked elements in the design frame which signal a close relationship in the decorative scheme. This does suggest that the shape criteria, most commonly used to denote continuity and change in times of undulating economic demand, does not match the timescale reflected in the decorative schema. A similar conundrum presents itself in Korinthian sub-geometric aryballoi where shape is sequential from globular to ovoid but decoration does not conform to this sequence (SHANKS 1999, 42).

Although the constancy of design structure may be attributable to female potters performing a traditional task over a long period of time, it can also be suggested that the potter forming the pot is not necessarily the same person who paints the pot; and the structure may have been done by one individual and the detailed artwork by another. CROWN (2007) has demonstrated through ethno-archaeological research

Period	Estimated Duration	Type	Vessel	Generational Interval
MC I	50 years	WP II	Lapithos 306 A.14	2
MC II	50 years			2
MC III	100 years	WP V	Kythrea Tb 1. A710	4

Table 1 Generational intervals and periodisation (dating after ÅSTRÖM 1972, 179, 198)

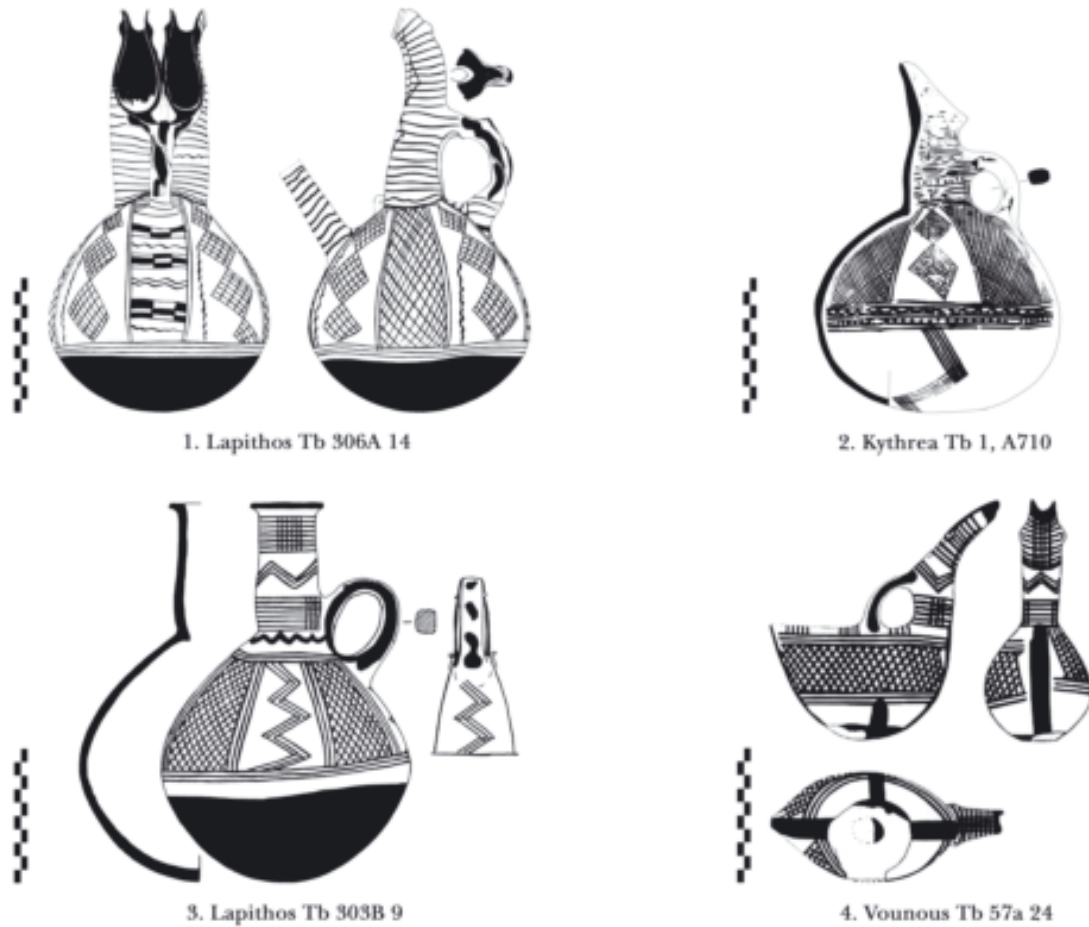


Fig. 6 Structural design in WP II, III and WP V

that we should challenge the idea of an “individual potter”. Rather we should position our potters within a community of producers. Multiple hands, including those of children, have been shown to have been involved in the creation of vessels. This makes the identification of an individual difficult, especially when children and older relatives are collaborating within a learning framework (*ibid.* 2007). However, if certain practices are repeated it could be that even with an amount of collaboration, a cohesive grouping of practitioners can be achievable.

While identifying the individual in Cypriot ceramics has been attempted in the aforementioned studies, it does seem that the variation within one artist’s work is considerable and that the task is particularly difficult. Much of the foregoing research is based on descriptive attributes, intuition and experience but little on systematic identification. This serves to emphasise that similarity and standardisation in fabric and finish may have appeared to be commonplace

in Middle Bronze Age ceramics from the North and centre of the island. Yet creativity and assertive behaviour, visible in the fluidity of the shape and motif selection, suggests that the potter of the Lapithos Tb 702 and Lapithos Tb 316 examples had a considerable amount of freedom in the expression of output. This occurred while the design structure in these two examples remained constant as well as in the examples already discussed from Politico. By studying the design structure of White Painted Wares, we can diverge from the traditional chronological type series and seek to examine, below, patterns of social behaviour in communities of potters which will undoubtedly shed light on interaction and enculturation in the Bronze Age.

THE POTTER WITHIN THE COMMUNITY

Ceramic stylistic variability studies have sought to elucidate our knowledge of social behaviour (SACKETT 1990, WOBST 1977, PLOG 1990). Within these studies

the individual potters (HARDIN 1977, HILL 1977) and their community audience, whether domestic or public, have important relevance (BOWSER 2000). The difficulty lies in deciphering both the “active” or “passive” expression of potters with a degree of confidence. The wealth of ethnoarchaeological and ethnographic material serves as a reminder to us that potters’ cognitive behaviours are varied and complex and the interpretation of this behaviour through stylistic attributes alone is challenging. However, VAN KEUREN has demonstrated, through an analysis of the *subconscious* motor skills of individuals, that the study of the individual is the key to understanding social interaction and enculturation.

“Even though it presents challenges, pinpointing individual behaviour in artifacts is the first step to modeling the participation of individuals in their social surroundings” (VAN KEUREN 2001, 30).

Ceramic design studies, often borrowing from the discipline of ethnoarchaeology, have been detecting variability on an individual scale and indicate that the sequence of brushstroke application is a strong subconscious event which is encoded in the potter’s work (HARDIN 1977, VAN KEUREN 1999). The learning experience or skill, which is passed on from potter to potter, is expected to remain the same in potters within the same communities. Likewise, the analysis of subconscious motor habits, in the execution of an individual’s style, has been very successful (HILL 1977, MORRIS 1993). Subconscious or embedded behaviour can be favoured over design element analyses which “are *not* (sic) an accurate signal of the social behaviors related to pottery production, including the context and modes of design interchange between potters” (VAN KEUREN 1999, 27). Also, within studies relating to style, research shows that the entire production sequence or *chaîne opératoire*, from raw procurement to final product, is measurable: potters would make a series of technical choices that have an impact on the final product (LEMONNIER 1993, 1986, 1992).

VAN KEUREN (1999, 2001) has devised a method of design structure analysis. He uses the aforementioned premise that potters living and working in close communities learn their skill and craft from watching and participating in the practice of other potters, often at an early age (BOWSER 2000, 227). Potters who live and work together invariably structure their design field in the same way (HARDIN 1983). Even in antiquity Plato makes reference to potters teaching their sons which, it is suggested, indicates families and extended families forming the basis of workshops for Attic and Corinthian pottery (ARAFAT

and MORGAN 1989, 327). Learning frameworks, nevertheless, can be affected by the practices of the communities in which potters live. This can happen through, for example, post-marital residence where practices may differ from the learning trajectory in the potter’s original community. Even so, against this background of learning frameworks or community practice, independent variables can be measured e.g handedness (SASSAMAN and RUDOPHI 2001).

VAN KEUREN could use this method of design structure variability to distinguish between non-local and local potters. Local potters, it was discovered, did not co-reside with migrant potters since the local potters copied migrant designs but not the design sequences. They invented hypothetical sequences in their production of Cibola White Wares (VAN KEUREN 1999, 50).

In order to work out the design sequence of late 13th century AD Cibola White Ware from east-central Arizona, VAN KEUREN’S analyses examined brushstrokes. He pinpointed the “exact sequence or order of execution design at the brushstroke level” (1999, 27). He could do this by recording the start and finish points of the brush stroke where the application of paint was thicker at the start as it pooled and thinner at the finish as it was dispersed from the brush tool. He also recorded the overlap of brushstrokes to determine the order in which the vessel was painted. Two of the 83 whole vessels he analysed are illustrated in Fig. 7 and Fig. 8.

In Fig. 7.a–f the design execution sequence of a non-local Pinedale vessel has been set out in stages. The potter worked in a standardised sequence. First, the vessel is demarcated by upper and lower encircling bands which provide a frame for the main design field (a). The main design element, in this instance a scroll, is outlined (b). Secondary elements such as the stepped element are outlined next (c) followed by a second outline on the primary and secondary elements (d). Finally, sub-elements are outlined (e) and hatching of each element carried out (f).

In Fig. 8.a–e the staging of a local Pinedale vessel is illustrated in a similar way. However, the design execution sequence is significantly different from the non-local example. In the first stage, the upper and lower encircling bands frame the design field (a) just as in the non-local example. The potter then marked only the *outline* of the scroll and secondary elements prior to any framing (b). Once the elements were outlined around the vessel, the framing of the design elements took place at the same time, rather than as separate entities (c) and finally incidental motifs were outlined and framed (d) and the hatching was the

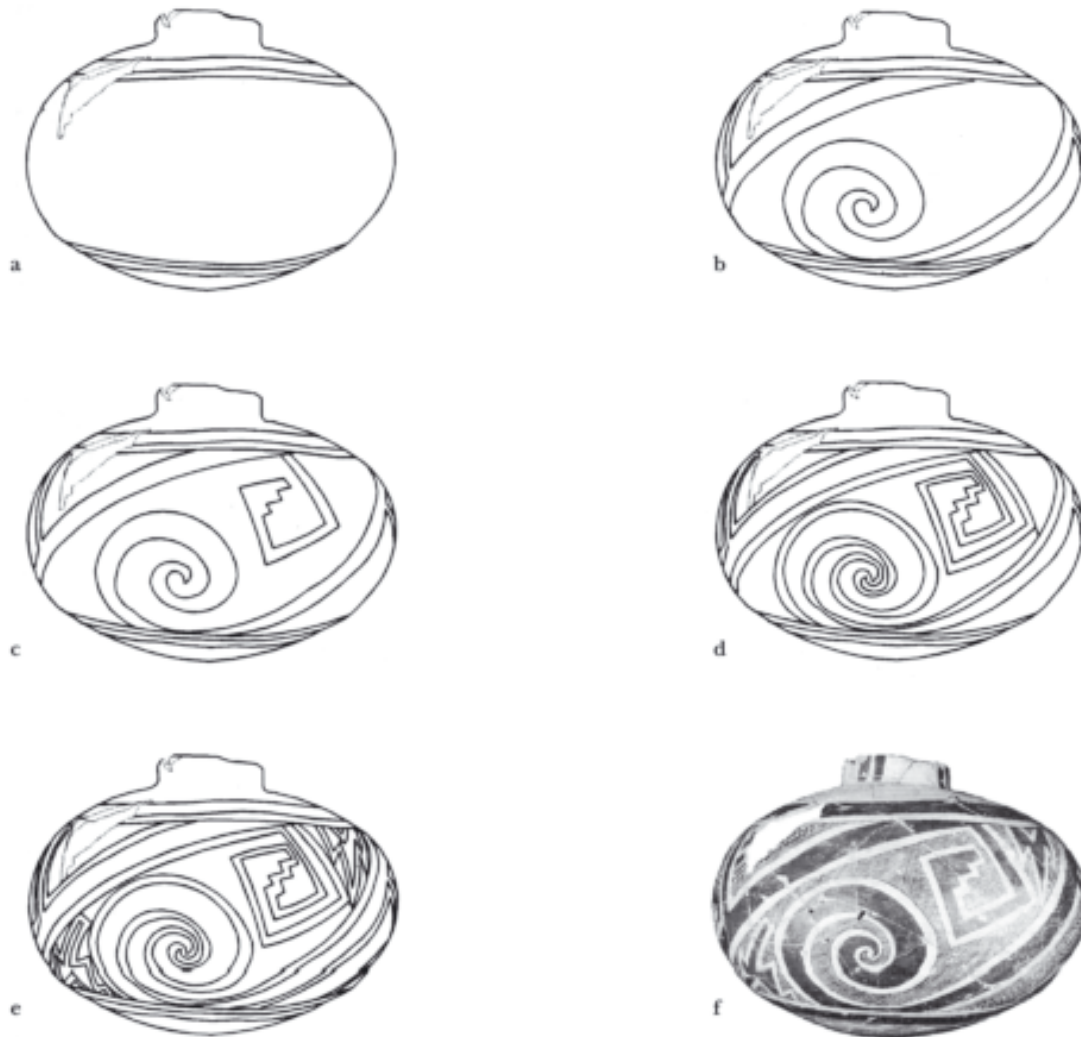


Fig. 7 Design execution of a non-local Pinedale Black-on-white jar (after VAN KEUREN 1999, fig 4.10)

final step (e). This is in complete contrast to the non-local example where the framing of individual elements was executed first. These different sequences, it could be suggested, reflect different decorative behaviours. These behaviours could have been part of the learning framework of a collective of potters where the artist copied and imitated the painting process from an early age. Conversely, where the sequences are different, they could indicate that the potter was not part of the learning framework but could imitate the stylistic attributes while not adopting the subconscious embedded behaviour used to create the final product. These patterns can then be interpreted against a background of social behaviour. In VAN KEUREN'S examples, he proposes that local mountain

potters emulated imported ceramics correctly but did not duplicate the design sequences of the migrant potters. If we apply this methodology to White Painted Wares, we encounter significant behaviours which, we will see, do not necessarily reflect the apparent stylistic divisions that have been outlined to date.

COMMUNITIES OF PRACTICE

Increasingly, research into fine-scale, 'bottom-up' research has been successful in mapping the practices of groups of individual within communities. Within the field of anthropology researchers have introduced the term "community of practice" (LAVE and WENGER 1991, WENGER 1998) where learning is part of social participation.



Fig. 8 Design execution of a local Pinedale Black-on-white jar (after VAN KEUREN 1999, fig 4.11)

“Participation ... in the practices of social communities and constructing identities in relation to these communities.” (WENGER 1998, 4)

Potters will undoubtedly learn most of the skills through observation and participation as a child (CROWN 2001), learning traits which may in fact be subconscious rather than conditional. There may be instances where they move beyond their community of practice and adopt a differing practice, in the case of post-marital residence or use their own ways to fashion the pottery of the group they identify with but, stylistically, the pots appear the same. Potters living and working together will undoubtedly share a

common learning framework which archaeologists may be able to tap into, if the subconscious traits can be identified. This learning framework, and the practices within it, are true for all types of artefacts, and are not limited to ceramic evidence. Motor skills have been examined on textiles which have left cord markings on ceramic vessels during manufacture (MINAR 2001). The final twist direction, observed in textile production, revealed that this variable cut across cultural groups previously defined by ceramic material. Similarly, a detailed examination of female potters in the American southeast, reveals that, assuming potters belong to different communities of practice e.g.

their natal and marital communities, observations of handedness through time could be observed (SASSAMAN and RUDOPHI 2001). By observing the punctuations on a pot oriented upright, a pot decorated by a right handed potter would display punctures which would be right-oriented; and upside down oriented, the same potter would have left-oriented punctuations when viewed upright. Within the Classic Stallings tradition, the proportion of vessels with punctured decoration working with left-hand dominant, was statistically distinct over fifteen generations. The researchers interpreted the data as evidence for post-marital residence patterns which offered continuity across generations where women were related (SASSAMAN and RUDOPHI 2001).

Individuals form part of the collective and their identity is linked to practice. "Developing a practice requires the formation of a community whose members can engage with one another and thus acknowledge each other as participants" (WENGER 1998, 149). In the case of pottery painting, the practices of brush selection, paint preparation and application are practices within a collective which are reinforced through learning. Many of the skills required would have been acquired through observation, imitation and practice. It is possible, therefore, to search for the characteristics of practice, subconscious or conscious, which can be interpreted as a characteristic of social identity (WENGER 1998, chapter 6).

As FRANKEL has encouraged (1991, 16, 2009), it is important to define the relevant scales of analyses which we employ to measure different ranges of variability. To this end, through the analyses presented below, we intend to investigate the range of variability at the lowest levels of passive variation that can be observed in the pot painting process. This will allow us to determine different practices employed in the painting process with the potential to map these communities of practice across the island. The primary reasons for attempting to detect this low-level variation are that the hierarchical stylistic groupings previously presented in typological and chronological studies have inadvertently masked a large amount of data on social behaviour which could radically alter our perceptions of the Cyprus at the end of the Middle Bronze Age. These stylistic groupings have had a major impact on the interpretations of the early history of Late Cypriot I, to the extent that a historical

reconstruction of the period has proposed that those areas "outside the home of the typical L.C. Wares" where the "MC III ceramic repertory continued largely unaffected" are to be dated earlier. The brushstroke analyses, however, will demonstrate that the White Painted of the Karpas, was in fact contemporary with the "LC I wares" and that the practices of the potters fashioning "LC wares" originated in the Karpas peninsula. The Karpas peninsula was in fact not "geographically distant ... and culturally retarded" and did not "resist the intrusion of the earliest forms of Monochrome, BR and WS" (MERRILLEES 1971, 72). Rather the potters who undoubtedly originated within the communities of the Karpas and Eastern Mesaoria were responsible for the transformation of White Painted into White Slip.

Therefore, in the case of Cypriot Bronze Age ceramics, it will be demonstrated in the following section that it has been possible to detect subconscious, low level passive variation at the brushstroke level, which defines communities of practice, where potters position the pots in certain ways in different areas. The embedded behaviour, associated with the painting process, can be examined in this light and compared with the prevailing stylistic temporal and spatial regional groupings to see if similarities exist. In subsequent sections a deconstruction of the practices on individual pots will be attempted and results and analyses of the patterns of behaviour both spatially and temporally will be presented.

A brief survey of previous studies of Cypriot White Painted ceramics above has already indicated that we have been very conscious of the spatial and temporal distributions of stylistic variables in the Middle Bronze Age. Communities in the east had a preference for linear decoration and in the north, centre and northwest, geometric decoration was more prevalent. Frankel suggested that the predominance of certain motifs in certain areas and not in others was an indication of communities in greater or lesser contact. Those communities were probably engaged in household production and were exogamous. For White Slip wares, the common theme has been that PWS and WS evolved from the emblematic style of White Painted in the north and west (MERRILLEES 1971, ERIKSSON 2007, 64, BERGOFFEN 2001, 154), and at a different pace from the "MC III" wares elsewhere.