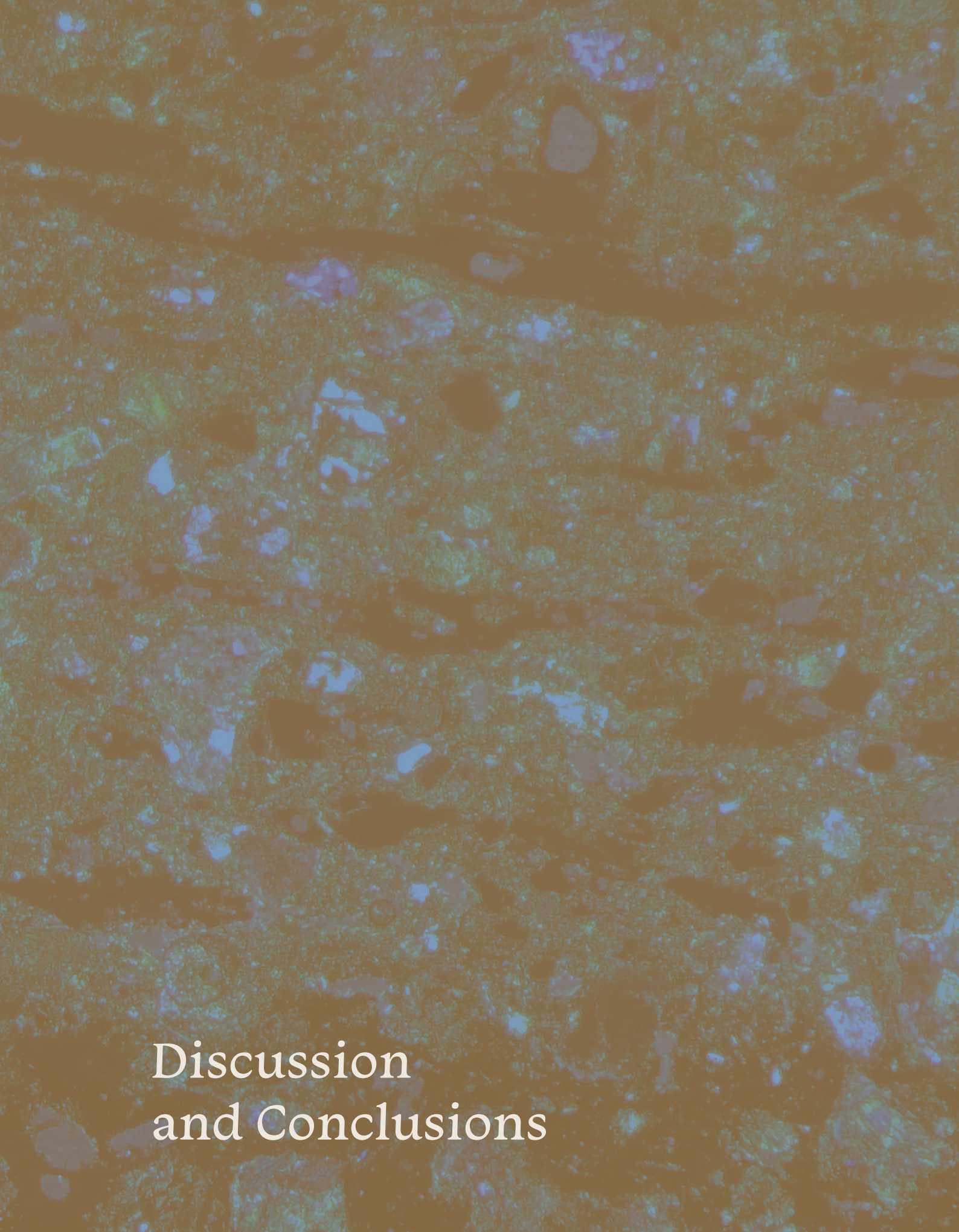
Connecting crafting communities: reconstructing interactions between communities in and out of Cyprus in the early third millenium BC

Hadjigavriel, M.

CHAPTER 8:



Discussion and Conclusions

Chapter 8 — Discussion and Conclusions

The objective of this thesis has been to explore the development of ceramics and pottery technologies in Cyprus during the Late Chalcolithic period (ca. 2900-2400 BC) and the Philia Phase (ca. 2400-2350/2250 BC), and to reconstruct intra- and extra-insular interactions in the ceramic assemblages of that period. The primary focus is on the interactions among potter communities within Cyprus, with a secondary emphasis on connections with crafting communities in southern Anatolia, particularly at Tarsus-*Gözlükule*. The examination of the aforementioned issues involved the analysis of two main categories of artifacts: an investigation into the predominant pottery types in Late Chalcolithic Cyprus, with a specific emphasis on technological characteristics influenced by interactions with Anatolia; and a comprehensive inspection of all known Cypriot pottery and other objects discovered in Anatolia, and vice versa.

To do so, the main Late Chalcolithic wares from four sites across Cyprus, Chlorakas-*Palloures*, Kissonerga-*Mosphilia*, Ambelikou-*Agios Georghios,* and Politiko-*Kokkinorotsos*, have been studied macroscopically, to establish their morphology and typology. Subsequently, 81 sherds have been sampled for mineralogical and compositional analysis via thin section ceramic petrography, and chemical/elemental analysis via hhXRF. These were paired with published data to reconstruct aspects of pottery production: clay procurement and preparation, vessel forming techniques, surface treatment and decoration, and vessel shapes and firing. In doing so, this study reconstructs different types of interactions between crafting communities: the exchange of pottery between sites, people relocating and living long-term at different sites, and mediated interactions – people and objects circulating from site to site.

Subsequently, the pottery reference collection from Tarsus-*Gözlükule* (Cilicia), stored at Bryn Mawr College has been studied to evaluate the known Cypriot imports at the site and to assess technological similarities between Cilician pottery production and the pottery production technologies in Cyprus during the Chalcolithic and the Philia Phase. I have conducted a macroscopic study of this assemblage, aligning observations with references from publications (e.g. Goldman, 1956; Mellink, 1991; Ünlü, 2009; 2011; Dikomitou-Eliadou, 2012), and petrographic data kindly provided by Dr.. Elif Ünlü.

8.1. Addressing the Research Questions

The main research question of this project is: *What can pottery assemblages of Cyprus tell us about the interactions between communities within the island and with communities in Anatolia in the early third millennium BC?* This is followed by sub-questions which are addressed in depth in this section.

8.1.1. How did pottery technology in Cyprus develop during the Late Chalcolithic?

As mentioned already in earlier chapters, pottery production in Cyprus starts in the Ceramic Neolithic (ca. 5200-4000 BC) with the Red-on-White Ware (RW) being the most popular pottery type across the island up until the end of the Middle Chalcolithic, even though a monochrome pottery traditions are also present. The RW was produced locally and at a household level, and it is undoubtedly one ceramic tradition, with common characteristics when it comes to the firing, surface treatment and decoration, and vessel shapes repertoire, regardless of where it was produced, while

regional variations concern mainly decoration motifs (Clarke, 2003, p. 205). However, in the Late Chalcolithic, the production of Red-on-White pottery decreases, and it is replaced by red and/or black monochrome wares. The main variants are the Red and Black Stroked-Burnished Ware (RB/B), occurring in large numbers in western Cyprus; and the Red Lustrous Ware (RL), and the Red and Black Ware (RBL), occurring in the northern and central regions of the island. A red monochrome type is also present in northern Paphos in the Polis area, which is referred to as Coarse Painted Monochrome in the literature (Maliszewski, 2013, p. 28). In this study it is referred to as Late Chalcolithic Red Monochrome Ware (LChalRM).

In order to investigate how pottery technology developed during the Late Chalcolithic, the aforementioned wares along with the novel Spalled Ware (SW) and some Coarse Ware (CW) sherds have been examined first macroscopically. These sites are Chlorakas-*Palloures*, Kissonerga-*Mosphilia*, Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos*. Additionally, a compositional and technological study was conducted to illustrate the composition and technology of the dominant wares at each site; Late Chalcolithic pottery composition and technologies and their scales of variability at a local, regional, and inter-regional level; and the mode of organization of pottery production.

The findings from the macroscopic, petrographic, and chemical analyses offer insights into both the pottery production practices during the Late Chalcolithic period across all four sites and the interactions between sites. The petrographic fabrics resulting from this study exhibit significant resemblances to the macroscopic wares. As anticipated, there is a considerable level of fabric variability across the island, characterized by mineralogical and technological distinctions between fabrics, which align with observations made during the macroscopic analysis of the wares. The ensuing discussion presents results pertaining to various aspects of pottery production processes and, consequently, sheds light on the interactions among different communities.

8.1.1.1. Clay procurement and preparation

To begin with, an examination of clay provenance and clay preparation methods has been undertaken through macroscopic, petrographic, and chemical analyses. The aim was to discern both the local production dynamics and the exchange patterns of pottery among different communities.

For clay procurement, all evidence points to local clay sources being used. The clays for the three petrographic Fabrics that correspond to the main wares of the Ktima Lowlands sites, Chlorakas-*Palloures* and Kissonerga-*Mosphilia*, namely Fabrics I, II and III, seem to be selected from the same clay source. The most likely clay sources for the production of these fabrics appear to be situated in the Mamonia outcrops along the Mavrokolymbos River, which is located approximately 4km northeast of Kissonerga and about 8km northeast of Chlorakas. The Mavrokolymbos Formation is predominantly comprised of red, green and grey radiolarian mudstones, along with siltstones and sandstones, while the Mamonia Melange includes red siltstone and radiolarite sequences and serpentinite. Both the petrographic and elemental data indicate that individuals were willing to travel considerable distances to procure specific clays tailored to their preferences for distinct types of pottery. This aligns with Arnold's Ceramic Resource Threshold Model according to which any clay source within 7 km from the site is considered local (Arnold, 2006, p. 8). Another possibility is that of community specialization, with these wares being made at a settlement closer to Mavrokolymbos River, like Kissonerga-*Mosphilia* and then being distributed to the wider region. This possibility is discussed further later in this chapter.

The Red and Black Stroke-Burnished Ware (RB/B) was exclusively produced in two distinct petrographic fabrics, namely Fabric I and Fabric II, which share a common foundation of sedimentary clay and exhibit a notable abundance of argillaceous inclusions. The key distinguishing factor lies in

the presence of volcanic inclusions, such as dolerite, which are characteristic of Fabric II. Similarly, Spalled Ware (SW) samples from both Chlorakas-*Palloures* and Kissonerga-*Mosphilia* have been manufactured using exclusively the petrographic Fabric III, characterized by a composition rich in micritic limestone and chert, along with argillaceous inclusions. The fact that Fabric I and Fabric II correspond exclusively to the Red and Black Stroke-Burnished Ware (RB/B), and Fabric III to the Spalled Ware (SW) indicates that specific clays were preferred for these two wares, while other clay sources might have been used for other wares at the time. This has been argued in the past for the RB/B production at both sites, but only on the basis of macroscopic observations (Bolger *et al.*, 1998; Hadjigavriel, 2019; 2021).

While distinct clay preferences can be identified in the case of RB/B and SW, it appears that the potters did not extensively process the clay, as evidence of intentional temper is minimal. Importantly, the development of clay preferences for specific wares is in contrast to the Middle Chalcolithic pottery production, when, at least in the case of Chlorakas-*Palloures*, there is no correlation between petrographic fabrics and wares (Vogiatzopoulos, 2023). Overall, the results of this study point towards community specialization, where specific pottery types, the Red Black Stroked-Burnished (RB/B) and the Spalled Ware (SW), could be produced by one crafting community and then be distributed to the nearby settlements.

A strong correlation between petrographic fabric and ware is also evident for the Late Chalcolithic Red Monochrome Ware (LChalRM), which is exclusively produced in Fabric IV. Even though these sherds have only been sampled from Chlorakas-*Palloures*, both the ceramic thin section petrography and the hhXRF analysis confirm the macroscopic assumption that this ware was not produced on site. Petrographic Fabric IV stands out as markedly distinct from the previously mentioned fabrics (Fabric I, II, III), as it is an amphibole-rich fabric containing feldspars and quartz. The prevalence of amphiboles and other igneous minerals and rocks in the matrix points to a clay source located in the foothills of the Troodos mountain range.

Macroscopic observations indicate that these sherds bear a clear resemblance to the primary Late Chalcolithic ware found in the Polis region and Akamas at sites like Makounta-*Voules*, Androlykou and Kalo Chorio (Charalambos Paraskeva after personal communication). While the Polis area is mainly situated on the Mamonia Complex, it is in close proximity to the northwestern borders of the Troodos. The outcrops of the Makounta-Kseropotamos Rivers, originating in the foothills of Troodos within the geological formation, could be the clay source for this fabric (GEOportal of Cyprus Geological Survey Department; Hydrological Map 2015). However, since no other wares have been sampled from this site, one cannot argue for a specific clay preference corresponding only to this ware.

When it comes to the other two sites included in this study, Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos*, no correlation between petrographic fabric and ware is observed. The preponderance of samples from Ambelikou-*Agios Georghios* has been attributed to Fabric VII, encompassing all Red Lustrous Ware and Red Black Lustrous Ware samples, and one Coarse Ware sample., The only exceptions are those identified as Red and Black Stroke-Burnished Ware and Spalled Ware, along with one Red Black Lustrous Ware sample (S71) and two Coarse Ware samples (S79, S80), which have been designated as outliers. However, it is noteworthy that the petrographic Fabric VII and the aforementioned outliers S71, S79 and S80 from the site share a commonality in their inclusion types, predominantly consisting of igneous components. This similarity suggests that they were likely locally produced, utilizing materials sourced from the Kampos River or the Xeros River valleys (GEOportal of Cyprus Geological Survey Department; Hydrological Map 2015). The two rivers are approximately situated 3km west and 5km east of the modern-day village of Ambelikou, respectively.

Finally, all samples obtained from Politiko-*Kokkinorotsos* are attributed to two distinct petrographic fabrics: Fabric V and VI. While both fabrics have similar types of inclusions, their primary difference lies in the prevalent presence of calcite and microfossils in Fabric V. In general, the similarities between these petrographic fabrics is indicative of the possibility of local production in the Mesaoria plain area. Materials for these fabrics could likely have been sourced from the Pedieos River valley (GEOportal of Cyprus Geological Survey Department; Hydrological Map 2015).

8.1.1.2. Surface treatment and decoration

What all the wares included in this study have in common, except the Spalled Ware and the Coarse Ware, is their highly burnished red monochrome surfaces, with occasional irregularly or uniformly blackened surfaces. All Red and Black Stroke-Burnished Ware pottery examined in this study is self-slipped, the clay and surface colour ranges from red to pink and bright orange, and the ceramics are highly burnished, often revealing visible burnishing strokes. Given the self-slipped nature of this pottery, surface treatment is not usually apparent in thin section analysis. The Late Chalcolithic Red Monochrome Ware sherds stand given their substantial layer of red slip. This distinctive feature is consistently visible in thin section analysis. The Red Lustrous Ware and the Red Black Lustrous Ware sherds from both Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos* are red to orange in colour, and their burnishing is not as intense as the on of the Red and Black Stroke-Burnished Ware.

The Spalled Ware (SW) sample exhibits a consistent surface treatment across all sherds, characterized by a thinly applied, dull red to grey-black, and/or beige slip. The interior of this pottery type is often left untreated. Occasionally, the surfaces have pockmarks (spalled areas), and burnishing strokes, akin to those observed on Red and Black Stroke-Burnished sherds, are visible. Finally, all Coarse Ware sherds have untreated surfaces on both sides, with visible vegetal imprints.

8.1.1.3. Vessel forming techniques and shapes

Both the macroscopic analysis and the ceramic thin section petrography suggest that Late Chalcolithic pottery was handmade. Bolger and Shiels (2003, p. 136) have suggested that in Kissonerga-*Mosphilia*, the forming of bowls involved the use of pinching and drawing techniques, while the production of large jars employed coiling and slab-building techniques. This observation seems to applicable to all four sites included in this study.

When it comes to the vessel shapes repertoire, a preference for simple bowls and jars is evident at all four sites. In Chlorakas-*Palloures* and Kissonerga-*Mosphilia*, the Red and Black Stroke-Burnished Wares appears to be the preferred choice for various types bowls, including spouted ones, while the Spalled Ware is commonly used for jars, small jugs and flasks. The majority of Late Chalcolithic Red Monochrome sherds and vessels in Chlorakas-*Palloures* are holemouth and storage jars. At Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos*, the Red Lustrous Ware and the Red Black Lustrous Ware are utilized for both bowls and jars, with no discernible pattern emerging. The six Coarse Ware samples from these samples are either pans or trays. In general, the Late Chalcolithic pottery repertoire consists mainly of various bowl types, storage jars (sometimes spouted), jugs, and platters.

8.1.1.4. Firing

Regarding the firing techniques used in Chalcolithic pottery, it has been proposed that open firing and pit firing are more likely than the use of kilns. Late Chalcolithic potters seem to have acquired knowledge on achieving higher temperatures and better control over the firing process compared to the Middle Chalcolithic, resulting in vessels with increased hardness. Middle Chalcolithic Red-on-White Ware sherds, ranging from soft to medium hardness, may suggest firing at open-firings with relatively low temperatures. In contrast, Late Chalcolithic pottery is believed to be fired at steadily rising high temperatures, reaching up to 600-800 °C (Charalambos Paraskeva after personal communication). While these temperatures might not seem exceptionally high, they are considered elevated for the mentioned firing techniques, requiring specialized knowledge. This is further supported by the very hard nature of the Spalled Ware.

Additionally, firing has been employed for aesthetic purposes in many of the wares studied. For instance, Red and Black Stroke-Burnished vessels exhibit irregularly blackened surfaces, which could result from accidental factors like misfires, fire-flashing, incorrect positioning of pots during firing, or imperfect control of oxygen flow and rapid temperature increase at the start of firing. Alternatively, blackening effects could be intentional, achieved by deliberately changing the atmosphere from oxidizing to reducing during the firing process (Stewart, 1985, p. 267; Bolger *et al.*, 1998, p. 145; Hadjigavriel, 2021, p. 88). At Chlorakas-*Palloures*, analysis over the years led to the conclusion that reduction spots are characteristic of almost all sherds of this ware.

In Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos*, all Red Black Lustrous sherds exhibit intentionally achieved uniform black lustrous interior surfaces, with occasional black exterior rims or entirely blackened exterior surfaces. This effect is accomplished through deliberate techniques known as “targeting” or the “black-top” methods, where the black colour was achieved by a variation of chemical effects on the clay during firing. Interestingly, Bolger (2019) has observed black-topped bowls in Middle Chalcolithic tombs at Souskiou (e.g. T.146). It’s important to differentiate intentional blackening from accidental occurrences, and one distinguishing factor is the sooty deposit left behind on the surface, as outlined by Stewart (1985, p. 270). Therefore, it appears that potters in the north-central region of the island had better control over firing processes, resulting in uniform black surfaces. In contrast, the Ktima Lowlands potters produced pottery with irregularly blackened surfaces. The uniform black surfaces and blackened rims of the Red Black Lustrous Ware, especially in Politiko-*Kokkinorotsos*, suggest that pottery was fired in bonfires with isolation, where the rise of temperature is more controlled. Therefore, different “schools” of firing within Chalcolithic Cyprus are observed.

8.1.1.5. Summing up the evolution of pottery technology in the Late Chalcolithic: variability at a local, regional, and inter-regional level, and organization of production

This study has distinguished distinct and highly regional pottery production traditions. Notably, one pottery production tradition is shared between Chlorakas-*Palloures* and Kissonerga-*Mosphilia*, another is found in northern Paphos, and the remaining two are unique to each of the other two sites.

The evidence suggests that Chlorakas-*Palloures* and Kissonerga-*Mosphilia* share pottery traditions, crafting the same wares with commonalities in clay sources, surface treatments, forming techniques, and vessel shape repertoire. Consequently, it can be inferred that the residents of these two settlements maintained long-term, direct contacts with each other, facilitating the circulation of people, materials, and technological knowledge. This is unsurprising, given their close geographical proximity and contemporaneous existence. Furthermore, the petrographic analysis indicates the presence of two distinct clay preferences for the production of the Red and Black Stroke-Burnished

Ware (RB/B) and the Spalled Ware (SW) at both sites. This supports the argument for an increased standardization of pottery production, as previously suggested on the basis of morphological and statistical studies (e.g. Bolger & Webb, 2013; Wallace, 1995), but also puts forward the suggestion for possible community specialization, where one crafting community makes these specific types of pottery. According to Costin (1991, p. 8) the term "*community specialization*" refers to independent individual or household-based units engaged in the production of pottery. These units operate autonomously but are part of a larger community. Their production is oriented towards meeting regional demand without restrictions, suggesting a decentralized approach to manufacturing within the community. Therefore, in this case, pottery would still be produced on a household level, but only by members of one crafting community. Then, these vessels would be exchanged within other sites. Given the fact that the most probable clay sources for the production of these wares are along the Mavrokolymbos River, I would argue that these wares are produced at a site closer to Mavrokolymbos River, for example at Kissonerga-*Mosphilia,* and are then distributed to Chlorakas-*Palloures*.

On the other hand, the macroscopic observations, the ceramic thin section petrography and the hhXRF analysis, all suggest that the Late Chalcolithic Red Monochrome Ware (LChalRM) does not belong to the pottery production of Chlorakas-*Palloures*, but probably to that of northern Paphos, specifically the Polis region.

Likewise, Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos* appear to represent two distinct local ceramic traditions, utilising different raw materials. Both traditions feature red and black monochrome vessels that are often thicker than the ones found in the Paphos region. Even though the two sites do not belong to the same pottery tradition, that pottery from these sites closely parallels each other has been previously argued on the basis of morphological studies (see Webb *et al.*, 2009a; Hadjigavriel, 2019). In Ambelikou-*Agios Georghios*, all sherds, excluding the Ktima Lowlands imports and two outliers, are attributed to a single petrographic fabric, Fabric VII. This suggests local production of both RBL and RL wares. Similarly, all samples from Politiko-*Kokkinorotsos* are assigned to two petrographic fabrics—Fabric V and VI—encompassing sherds from both Red Lustrous Ware and Red Black Lustrous Ware, along with the three Coarse Ware sherds. It's noteworthy that Politiko-*Kokkinorotsos* is categorized not as a settlement but as a seasonal hunting station, where people would reside in temporary structures during specific times of the year (*Webb et al.,* 2009a). Considering this, pottery production at Politiko-*Kokkinorotsos* may reflect the broader pottery production practices in the Mesaoria region or even the northern area of Karpasia, where sites like Vasilia flourished during the Bronze Age.

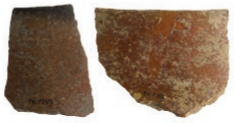
8.1.2. To what extent were ceramics circulated and exchanged among population groups from different regions in Cyprus?

The macroscopic analysis, ceramic thin section petrography and chemical analysis via hhXRF conducted for this study indicate that pottery was exchanged from site to site within Cyprus (Figure 107). To begin with, when macroscopically examining the pottery from Ambelikou-*Agios Georghios*, several sherds seem to belong to the Ktima Lowlands wares of Red and Black Stroke-Burnished Ware (RB/B) and Spalled Ware (SW), representing 3% of the overall Chalcolithic pottery retrieved from the site, as indicated by the macroscopic analysis of the whole assemblage, illustrated in Chapter 5. Two RB/B sherds (S72 and S73) and five SW sherds (S74, S75, S76, S77, S78) were sampled for further analysis. Both the ceramic thin section petrography and the chemical analysis confirmed their provenance from the Paphos region: S72 and S73 were assigned to petrographic Fabric I which corresponds exclusively to the Red and Black Stroke-Burnished Ware; and all the Spalled Ware sherds were ascribed to Fabric III, along with all the other Spalled Ware sherds sampled from Chlorakas-*Palloures* and Kissonerga-*Mosphilia*.

Moreover, as mentioned already, both the petrographic and the chemical analysis support the macroscopic observation that LChalRM was not produced at Chlorakas-*Palloures* but imported from a different region, probably the Polis region in northern Paphos. The fact that the majority of LChalRM sherdage and vessels at Chlorakas-*Palloures* are large holemouth and storage jars suggests that what was in fact imported was the content of these jars. It's noteworthy to mention that one LChalRM sample (S41) originates from a large storage jar with three vertical handles, which was discovered in its original position and contained various artifacts, including a copper axe made from Anatolian ores (Düring *et al.* 2018; 2021). Despite its unconventional vessel shape, the petrographic analysis reveals no discernible differences from the rest of Fabric IV.

Finally, it is worth mentioning that at Chlorakas-*Palloures*, 1.2% of the Late Chalcolithic pottery processed so far belongs to Late Chalcolithic red monochrome wares from other regions, including northern and central Cyprus, from sites like Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos*, but also sites on the south of the island, like Erimi-*Pamboula* (personal observations). A few such sherds were also recorded at Kissonerga-*Mosphilia* (Bolger *et al.*, 1998, p. 95).

Figure 107: Production and circulation of pottery in Late Chalcolithic Cyprus as demonstrated in this study (by Maria Hadjigavriel)

 *Spalled Ware (SW)*	*	 *Red Black Stroked Burnished Ware (RB/B)*	#	 *Red Lustrous Ware (RL) and Red Black Lustrous Ware (RBL)*	°
 *Late Chalcolithic Red Monochrome Ware (LChalRM)*	+	 *Fabric A, Fabric B and Fabric D*	§		

8.1.3. To what extent were ceramics circulated and exchanged between Cyprus and Anatolia in the early third millennium BC?

As illustrated in Chapter 6, the occurrence of Cypriot imports in Anatolia and vice versa, albeit limited, confirms a certain degree of object circulation between the two regions. Notably, imports in Cyprus consist mainly of objects such as ornaments and metal artifacts. In Anatolia, on the other hand, the imports consist of Cypriot ceramics. This pattern might be influenced by both the archaeological visibility and the preferences of people in these regions regarding the types of objects they were inclined to exchange.

Specifically in Tarsus-*Gözlükule*, two small Red-on-White sherds and one bowl, several Philia Black Slipped and Combed Ware sherds, and a possible Philia pitcher and spout have been retrieved (Goldman, 1956, p. 112; personal observations). In addition to these, one possible Philia White Painted horned jug has recently been found at Hacımusular Höyük (Özgen *et al.*, 2021, p. 628, fig. 21x). It should be noted that at both sites, Cypriot pottery has been retrieved from contexts dating to the EB II, which corresponds to ca. 2700-2600 BC at both settlements (Novák *et al.* 2017, p. 162; Özgen *et al.*, 2021, p. 608). Interestingly, this corresponds to the Cypriot Late Chalcolithic (Knapp, 2013, p. 27; Peltenburg, 2014, p. 253).

Notably, even though, as presented in Chapter 7, Anatolian imports such as faience ornaments and metal objects occur in Cypriot Chalcolithic and Philia Phase contexts, no Anatolian pottery has been retrieved on Cyprus so far. This might have to do with the kinds of objects that were exchanged between the regions. However, it might have to do more with archaeological visibility: the northern part of the island, where interactions between the island and Anatolia would be expected to be more evident due to geographical proximity, has been inaccessible to research since 1974. Additionally, the current political situation does not encourage thorough discussions and cooperation between Cypriot and Turkish archaeologists, rendering recognizing imported material record even more difficult.

8.1.4. To what extend did pottery technologies and characteristics transfer from Anatolia to Cyprus and vice versa?

When examining pottery technologies in Cyprus and Anatolia throughout the early third millennium BC, several aspects of the *chaîne opératoire* seem to have common characteristics. This study investigated pottery assemblages from four sites across Cyprus, by employing macroscopic analysis, ceramic thin section petrography, and chemical analysis (hhXRF), in order to reconstruct interactions between crafting communities in the Late Chalcolithic, by investigating different steps of the *chaîne opératoire*. In sum, examining the clay procurement and preparation can indicate local productions and the exchange of pottery between sites; examining vessel forming techniques and shapes, and firing can illustrate long-term interactions and shared pottery technologies; and comparing vessel shapes, surface treatment and decoration can reconstruct mediated interactions, where objects would circulate from site to site. By including the reference collection of EB pottery from Tarsus-*Gözlükule*, which has been studied macroscopically and paired with published data on ceramic thin section petrography, interactions between Cilicia and Cyprus in the third millennium BC are investigated. Additionally, published data on Philia Phase assemblages from Cyprus are also included, to assess these interactions in a more *longue durée* perspective.

8.1.4.1. Clay procurement and preparation

The available petrographic evidence does not provide indications of the transfer of clay recipes between the two regions. However, similarities in clay preparation and firing procedures have been highlighted throughout Chapter 6. Notably, these similarities are observed in the Late Chalcolithic Spalled Ware, the Philia Cooking Pots Type A, and the Red Gritty Ware and Cooking Pots from Tarsus-*Gözlükule*. The fact that in terms of clay composition, only the Red Gritty Ware seems to be comparable to Cypriot wares is interesting, since the Red Gritty Ware is a novel tradition in EB I-II Tarsus-*Gözlükule*. As mentioned in Chapter 6, Goldman has suggested that this ware was inspired by the Stone Ware of the Middle Euphrates region, Mellaart and Mellink that it originates from the Niğde-Konya in south-central Anatolia, and later Mellink suggested that it came from the Bolkarmaden zone in the Taurus Mountains, and sites like Göltepe (Goldman, 1956, p. 97; Mellaart, 1963, p. 232; Yener, 2021, pp. 80-81; Mellink, 1989, p. 320; 1993, p. 500).

8.1.4.2. Surface treatment and decoration

In terms of surface treatment and decoration, various wares from Tarsus-*Gözlükule* share common characteristics with Cypriot wares. Specifically, the distinctive red monochrome highly burnished surfaces, featuring visible burnishing strokes and occasionally mottled surfaces, typical of the Late Chalcolithic red monochrome pottery traditions, are also observed in Cilician wares like the Plain Red Burnished Ware and its variants. Similarly, the presence of occasional relief decoration, primarily in the form of knobs, is noted in both regions (Peltenburg, 2007; Bolger & Peltenburg, 2014).

A Cypriot Late Chalcolithic ware that shares similarities with a Cilician pottery type is the Spalled Ware. The thinly applied beige, red, or grey slip, along with the “pocked” effect observed in some Red Gritty Ware sherds from Tarsus-*Gözlükule*, mirrors the characteristics of the Late Chalcolithic Spalled Ware. Both the macroscopic and petrographic similarities between the clays of the Late Chalcolithic Spalled Ware and Fabric D of Politiko-*Kokkinorotsos*, in addition to the Philia Cooking Pots Type A of Marki-*Alonia*, and the Red Gritty Ware and Cooking Pots of Tarsus-*Gözlükule*, along with morphological resemblances, suggest that communities in these regions were in contact with each other, at least at a level of mediated interactions, with people circulating between the two regions, maybe through well-established trade routes. This interaction likely involved the circulation and imitation of aspects of each other’s pottery production throughout the early third millennium BC.

Likewise, the smoothed red slipped and polished surfaces, occasionally featuring incised decoration that may be filled with limestone paste, characteristic of the Philia Red Polished Ware, can also be identified on Cilician Red Burnished and Red Polished wares. A similar resemblance is observed in the Cooking Pots of the Philia Phase, which closely parallel the Cilician Red Gritty Ware and Cooking Pots in terms of macroscopic fabric, surface treatment, forming techniques (such as plugged handles), and the repertoire of vessel shapes.

8.1.4.3. Vessel shapes and vessel forming techniques

The presence of similar vessel forming techniques is considered a reliable indication of direct, long-term interactions, as these techniques are learned over an extended period, with the student mimicking and eventually adopting the motor habits of the teacher. In this context, the introduction of Cilician forming techniques, such as the use of “plugged” handles, in Cyprus during the Philia Phase strengthens the argument for potters moving and residing long-term within their communities.

However, it is essential to note that while wheel-made pottery was already being produced in Tarsus-*Gözlükule* during the Early Bronze Age, the majority of the local production was still handmade, indicating two different potting traditions (Ünlü, 2011, p. 16). In contrast, the earliest instances of wheelmade pottery in Cyprus appear much later, during the Late Bronze Age.

The shared vessel shapes repertoire of certain wares, such as Cooking Pots occurring in hole-mouthed jars and jars with everted rims, indicates similarities between Cyprus and Tarsus-*Gözlükule*. However, it's important to note that many typical Anatolian vessel types, like the depas, tankards, and Syrian bottles, are absent from the Cypriot archaeological record (Fidan *et al.*, 2015; Massa 2016; Novák *et al.*, 2017). Similarly, several vessel shapes typical of the Philia Phase, such as bowls with downturned handles, neck juglets, or deep spouted bowls, are not found in Anatolia. However, the deep spouted bowl is already produced in Cyprus during the Late Chalcolithic (Bolger & Webb, 2013; Düring, 2024). This suggests both shared and distinct aspects in the vessel shape repertoires between these regions during the relevant periods.

8.1.4.4. Firing

Similarities in firing techniques and resulting pottery appearances occur between Tarsus-*Gözlükule* and Cypriot wares, such as Spalled Ware from the Ktima Lowlands and Fabric D from Politiko-*Kokkinorotsos*, these support the notion of technological advancement in firing processes. This advancement may have resulted from influences and the transfer of technological know-how from Anatolia to Cyprus, highlighting the interconnectedness and exchange of knowledge between these regions during this period.

The evidence suggests that Late Chalcolithic wares in Cyprus were fired at higher temperatures compared to those of the Middle Chalcolithic period. Additionally, the macroscopic study of the Tarsus-*Gözlükule* pottery reference collection has led to observations regarding similarities between Red Gritty Ware and Spalled Ware and Fabric D from Late Chalcolithic Cyprus, and the Philia Cooking Pots Type A from the Philia Phase. Specifically, in terms of firing, the pottery wares mentioned above share a high hardness and "spalled" limestone visible on the surface.

Finally, potters in Cyprus demonstrated improved control over firing, achieving red and black surfaces, whether uniform or exhibiting irregular mottling. This bichrome appearance of Late Chalcolithic vessels has been identified as a similarity with contemporaneous wares from Anatolia and the Levant, indicating interactions between these regions. The uniform black interior surfaces and blackened rims of the Red Black Lustrous Wares from Politiko-*Kokkinorotsos* resemble surfaces from coeval wares from Tarsus-*Gözlükule*. As already mentioned, Politiko-*Kokkinorotsos* has been interpreted as a seasonal hunting station, which might reflect the pottery traditions of the wider area of Mesaoria or the northern area of Karpasia (Webb *et al*, 2009a, p. 205; Crewe, 2023, p 188). In the north of Cyprus, sites like Vasilia thrived during the Bronze Age and have been suggested as the beginning of trade routes to Anatolia. It would therefore make sense for the inhabitants of this region to be in closer contact with population groups in Anatolia and for technological knowledge of intricate pottery production steps, like firing, to be transferred between the two regions, already in the Chalcolithic.

8.2. Conclusions

To conclude, this thesis has attempted to illustrate interactions between communities within Cyprus and between communities on the island and Anatolia, in the early third millennium BC, by studying and comparing key pottery assemblages and their technologies of production. To do so, a literature review has been paired with macroscopic analysis of pottery assemblages; mineralogical and compositional analysis via ceramic thin section petrography; and chemical analysis via hhXRF.

This thesis has illustrated the regional nature of pottery production in the Late Chalcolithic Cyprus, by distinguishing four different pottery production traditions with distinct *chaînes opératoires*: one in western Cyprus shared between Chlorakas-*Palloures* and Kissonerga-*Mosphilia*; one in northern Paphos, in the Polis region; one at Ambelikou-*Agios Georghios*; and one at Politiko-*Kokkinorotsos* (Figure 108). These regions would be in contact with each other, as pottery from western Cyprus has been found in Ambelikou-*Agios Georghios* and vice versa, and pottery from northern Paphos has been found at Chlorakas-*Palloures*. Similarities in vessel forming techniques and vessel shapes, as well as in surface treatment and firing, indicate both mediated interactions with people and objects.

The majority of the pottery types studied here, namely the Red and Black Stroke-Burnished Ware, the Red Lustrous Ware and the Red Black Lustrous Ware, belong to a wider red monochrome tradition that characterizes pottery production during the Late Chalcolithic (Peltenburg, 1991c; 2007; Bolger, 2007; 2013). However, they develop differently, exhibiting distinct local and regional characteristics. The western Cyprus pottery types, the Red and Black Stroke-Burnished Ware and the Spalled Ware, are quite distinct, harder, with finer walls and intense burnishing. On the other hand, the Red Lustrous Ware and Red Black Lustrous Ware of Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos* are thicker, not as burnished, the blackened surfaces are more uniform indicating better control of the firing processes, and even though they belong to two different pottery traditions, they find their closest parallels to each other (Webb *et al.*, 2009a, p. 205).

Figure 108: The chaînes opératoires of the wares included in this study (created by Maria Hadjigavriel)

The results of this thesis indicate that the Late Chalcolithic pottery production has more in common with the subsequent Philia Phase pottery production, than with the previous Middle Chalcolithic pottery production. In the Philia Phase, a shift in labour and organization of production towards craft specialization has been argued for Marki-Alonia (Frankel & Webb, 2001; Dikomitou-Eliadou, 2012). Furthermore, according to Dikomitou and Zomeni (2017, p. 101), when examining pottery production in the Philia Phase, the evidence indicates the existence of a cohesive community network that, over time, underwent a transformation towards more regional forms of social interaction and commodity exchange, while the technological profile of the ceramic tradition seems to have its roots either in the Ovgos Valley or in Lapithos. This suggest a well-established network of interaction among these communities during the Philia Phase (Dikomitou-Eliadou, 2012, p. 268). When it comes to Late Chalcolithic pottery production, increased specialization and maybe a slightly larger scale of production is observed at a local level, with clay recipes being developed for specific wares (RB/B and SW) and shared vessel shapes repertoires between sites. On this basis, a shift from household production to community production in the Ktima Lowlands is proposed, signifying a change in the organization of production and labor beyond the household level. In general, the emergence of craft specialization is often associated with the emergence of elites and even urbanization, while ceramic craft specialization is often thought to be emerging alongside social, political, and demographic changes (Rice et al., 1981, p. 227). As already discussed in Chapter 2, social differentiation and complexity have been argued for the Late Chalcolithic (e.g. Peltenburg et al., 1998; Steel, 2004, pp. 112-113; Knapp, 2013, pp. 245-250). The results of this thesis suggest that pottery production evolved along with these changes in social organization, taking a step from household production to community specialization, creating and maintaining networks of interactions between Late Chalcolithic communities.

Regarding extra-insular interactions, in this project the pottery from Tarsus-Gözlükule serves as an assemblage for considering general possibilities of shared technologies and visual referents. Both Peltenburg (e.g. 2007; 2018) and Bolger (e.g. 2007; 2013) have long argued that the highly burnished surfaces, the relief decoration and the preference of small bowls and pouring vessels are the result of increasing extra-insular contacts, particularly with western Anatolia. Meanwhile, Webb (*et al.*, 2009a, p. 205) has maintained that the presence of these elements at Ambelikou-*Agios Georghios* and Politiko-*Kokkinorotsos* points towards indigenous developments. Here, I argue that in terms of morphological characteristics and firing, the pottery from Politiko-*Kokkinorotsos* is the most similar to the pottery of Tarsus-*Gözlükule*. Given that the presence of Cypriot pottery at Tarsus-*Gözlükule* and Hacımusular Höyük in EB II levels confirm the interactions between the island and Cilicia at the time, geographical proximity, and the fact that Politiko-*Kokkinorotsos*, as a special purpose site rather than a settlement, might reflect the pottery production of a wider area in the Mesaoria plain and even up north in Karpasia, I argue that it is possible that Anatolian pottery technologies arrived on the island via the north coast first, and this first influences are evident in the Politiko-*Kokkinorotsos* pottery assemblages. Moreover, the presence of Cypriot imports in EB II Tarsus corroborates suggestions for an earlier start of the Philia Phase. Understanding the rates at which innovations are introduced and adopted, as well as the pace at which divergence develops or is erased, is crucial for gaining a comprehensive insight into the ways settlements and regions evolve different patterns of relationships. This perspective is essential for fully appreciating and explaining the complex dynamics that shape the interactions and developments within and between various communities (Frankel, 2009, p. 23).

In a recent paper, Crewe has argued for changes in Cypriot material culture in the third millennium being a result of the Cypriot communities to align themselves with wider phenomena of connectivity in the surrounding regions, namely the Early Transcaucasian Culture and the Anatolian Trade Network, while highlighting that this does not render Cypriots passive recipients, but illustrates that "*they responded proactively to a dynamic situation*" (Crewe, 2023, pp. 182). The active role of Cypriots has also been highlighted by Bolger: "*local and regional variations in the reception of foreign cultural elements…suggesting that the island's relations with its neighbours were often the result*

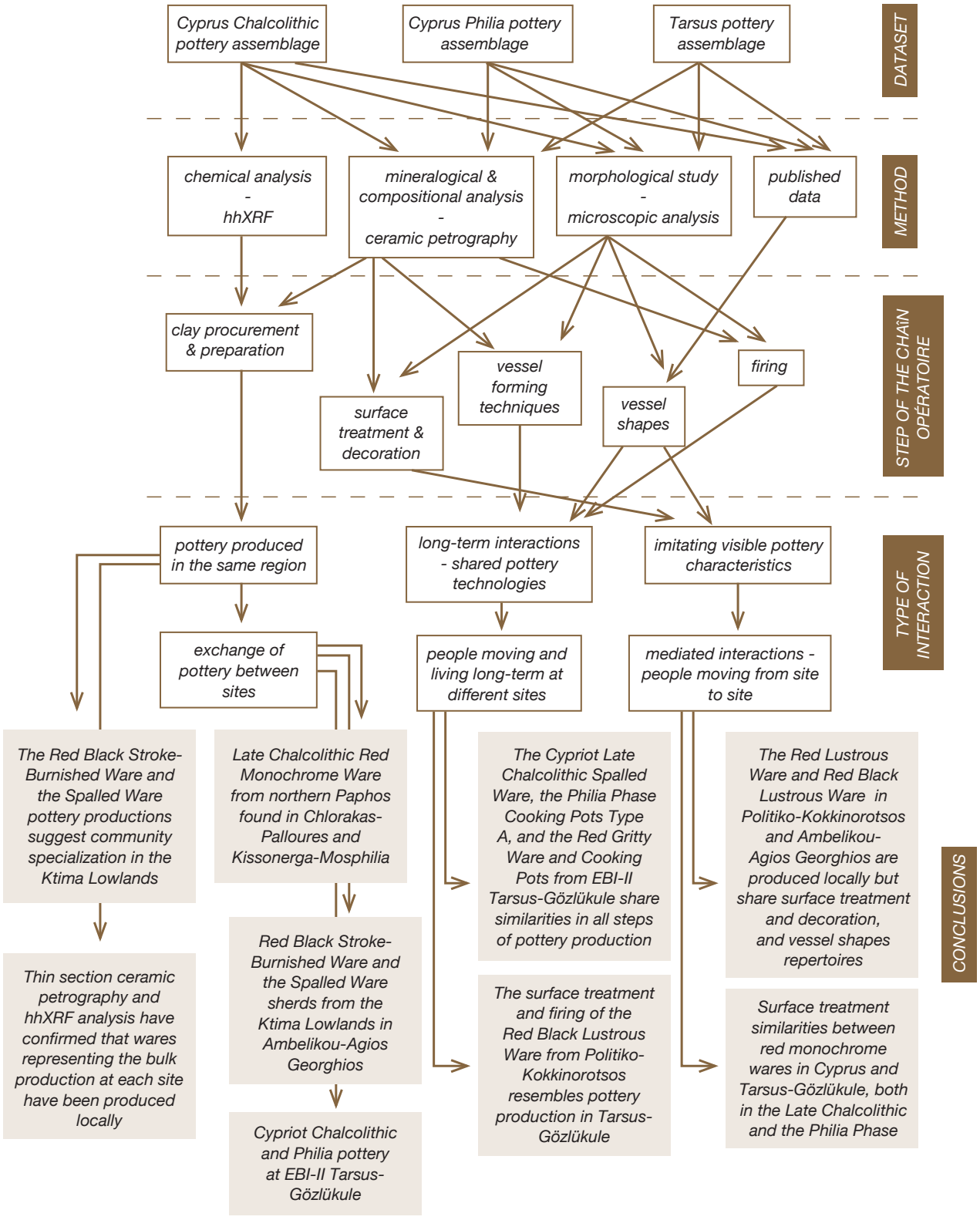
of deliberate choices by Cypriot communities to engage – or refuse to engage – in external world systems" (Bolger, 2013, p. 1). As Laoutari (2023, p. 267) stated "*Central to these processes were people living within communities, situated in landscapes with different affordances, and organising themselves in multiple and overlapping social groups, engaged in diverse activities that span from their proximate environment to long-distance unfamiliar encounters*".

This thesis supports these arguments through a substantial study of pottery production in Cyprus in the Late Chalcolithic, which was influenced by extra-insular contacts. These interactions were already in place throughout the Chalcolithic, while only selective foreign elements were adopted and adapted in the various regions. For example, the controlled firing and bichrome red-black surfaces of Anatolian pottery are mirrored in the pottery production of Politiko-*Kokkinorotsos*, but relief decoration and intense burnishing are much more prevalent in western Cyprus. One should keep in mind that, just like in the Philia Phase, it can be assumed that in the Late Chalcolithic communities in the northern part of Cyprus would have been more in contact with Anatolia due to their geographical proximity. Since the northern part of the island is inaccessible to research since 1974, Politiko-*Kokkinorotsos*, which was a hunting station that might reflect the pottery production of the wider Mesaoria region, can be our "window" into crafting communities that would reside in the north and have more interactions with their Cilician neighbours.

I contend that the above arguments, along with the persistence of handmade pottery traditions and the differences in vessel shapes' repertoire contradict the argument for an Anatolian migration during the Philia Phase. Instead of the transfer of complete cultural package by migrants, what we observe is the exchange of specific technological traits evident in particular wares and assemblages. Moreover, continuity in ceramic production between the Late Chalcolithic and the Philia is evident in the red and/or black burnished surfaces, and morphological characteristics such as everted rims, and flat and concave (omphalos) bases (Boger & Webb, 2013, pp. 81, 83; Bolger *et al.*, 1998, 99; Dikaios, 1962, pp. 137, 145, 154, figs.64, 68, 72). Therefore, the transition from the Chalcolithic to the Philia Phase would likely be a gradual process, driven by ongoing interactions with Anatolia rather than a sudden influx of migration. Furthermore, it would occur on a regional scale rather than as a widespread phenomenon across the entire island, where the novel Philia Phase elements would find their way among pre-existing social relationships and modes of interaction, with various social responses across the island.

In conclusion, for the purposes of these research, ceramic assemblages from Late Chalcolithic Cyprus were studied systematically, employing macroscopic, ceramic thin section petrography and chemical/elemental (hhXRF) analyses. Additionally, the reference pottery collection from the EB I-II Tarsus-*Gözlükule* was studied macroscopically. The various stages of the *chaîne opératoire* were investigated, to reconstruct different types of interaction between crafting communities within and outside the island. The conclusions of this thesis are outlined in Figure 109 below.

Figure 109: Diagram illustrating the methodological and theoretical framework of this thesis, along with the conclusions (created by Maria Hadjigavriel)



8.3. Prospects for Further Research

This thesis has endeavoured to illustrate the interactions between communities within Cyprus and between communities on the island and Anatolia during the early third millennium BC. This was achieved through a comprehensive study and comparison of key pottery assemblages and their production technologies. However, several steps can be taken to elaborate and investigate this topic further.

To begin with, what this thesis makes clear is that it is essential to study the Middle Chalcolithic, the Late Chalcolithic, and the Philia Phase as a continuum rather than as isolated separate periods. Taking a *longue durée* approach to the third millennium BC provides a more comprehensive understanding of the emergence of the Philia Phase and the relationships between Cyprus and its neighbouring regions during both the Late Chalcolithic and the Early Bronze Age. Additionally, it enables the observation of regional changes over an extended period, facilitating a deeper comprehension of social transformations and interactions. To do so, studies which integrate macroscopic analysis, ceramic thin section petrography and other methods to study pottery production at Middle Chalcolithic, Late Chalcolithic and Philia Phase sites is imperative. Subsequently, further cooperation among specialists is needed in order to facilitate understanding and comparison of different ceramic assemblages over time and space across the island. Moreover, a multi-analytical investigation into the mineralogical, chemical, and micro-paleontological characteristics of distinct geological regions in Cyprus would allow pinpointing the origin of raw materials used in ceramic production, aiding in the differentiation between locally sourced and imported vessels at archaeological sites.

For investigating the relationship between the island and Anatolia at the time, more comparative studies are needed, systematically studying Anatolian assemblages, comparing them with Cypriot ones, and assessing possible imports/exports. Especially the connections between Philia cooking pots and Anatolian wares, which have been illuminated in this study, merit further research. Finally, the current political status quo on Cyprus hinders our understanding of the material record, as the northern part of the island is inaccessible to research. More importantly, it limits interactions and exchange of knowledge not only between archaeologists trained in Cypriot archaeology and those trained in Anatolian archaeology, but also between Greek-speaking Cypriot archaeologists and Turkish-speaking Cypriot archaeologists. May we one day be able to work with each other, and study our island as a whole, together.