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PROTOHISTORIC ITALIAN CERAMICS: TOWARDS A GENERAL FABRICS CLASSIFICATION AND INTERPRETATION

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Abstract – This is the first synthetic and comparative presentation of the petrographic classification of Bronze Age and Early Iron Age pottery as result of the interdisciplinary project Wikipottery performed by our team over the last 30 years. We analyzed collections from the Central Mediterranean and designed a specific database to store, standardize, classify and share the data. We show here the results from 88 archaeological sites and 1654 samples classified into 169 fabrics: technological compositions that identify the petrographic signatures of individual production centres/workshops/individuals. These rigorous compositional formulae are conceptually on the same level as the morphological types defined by quantitative approaches. We present this general experiment and discuss the relevance of ceramic technological/compositional data for the reconstruction of environment, circulation, cultural identity, complexity and innovation in ancient societies.

Keywords – *pottery, bronze age, early iron age, petrography, fabric, classification, circulation*

Riassunto – *Questa è la prima presentazione sintetica e comparativa della classificazione petrografica della ceramica dell'età del bronzo e della prima età del ferro e rappresenta il risultato del progetto interdisciplinare Wikipottery, portato avanti dal nostro gruppo negli ultimi 30 anni. Abbiamo analizzato collezioni ceramiche dal Mediterraneo centrale e sviluppato un database specifico per raccogliere, standardizzare, classificare e condividere i dati. In questo articolo vi sono i risultati da 88 siti archeologici e 1654 campioni classificati in 169 impasti: la composizione tecnologica che identifica le caratteristiche petrografiche di singoli centri produttivi/botteghe/individui. Queste rigorose formule composizionali sono concettualmente allo stesso livello della tipologia morfologica, definite attraverso approcci quantitativi. Presentiamo questo esperimento generale e discutiamo l'importanza dei dati tecnologico-composizionali della ceramica per la ricostruzione dell'ambiente, della circolazione, dell'identità culturale, della complessità e dell'innovazione nelle antiche società.*

Parole chiave – ceramica, età del bronzo, età del ferro primo, petrografia, impasto, classificazione, circolazione

INTRODUCTION

The theoretical and methodological assumption of the present proposal is that the technological characters are as important as the morphological/stylistic ones. We belong to the never-ending discussion

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about the role of pottery in archaeology[1], the relationship between archaeology and archaeometry and the challenges of interdisciplinarity (Cuomo di Caprio 2017; Levi, Muntoni 2014; Levi, Sonnino 2006; Levi, Vertuani 2017; Tite 2008; Vidale 2007).

Our team grew up in a sophisticated environment concerning the typological classification of shape and decoration (Levi 1990). We have been inspired in numerous heterogeneous ways, for example by working with Renato Peroni (1967, 1985, 1998), by David Clarke's analytical method (1968, 1970), by workshops with Sander van der Leeuw, Massimo Vidale and Peter Day, by experimental archaeology (Brodà *et alii* 2009; Desogus *et alii* 1995; Vanzetti *et alii* 2014) and by ethnoarchaeology (Vidale 2004). Trial and error took their place in our search for more efficient methods in pottery treatment, documentation, interpretation and publication (Levi, Vanzetti 2017; Levi, Vertuani 2017). We aim to build a standardized and rigorous methodology in order to define pottery technology and composition as a tool to better understand social organization, trade, function, environment, complexity and change in ancient societies.

METHODS AND GOALS

One crucial point in studying ancient pottery is to find the significant taxonomic units useful to describe potters' behaviors and choices. For ceramic pastes, the goal is to discover the provenance of the raw materials and the 'recipes' in their preparation and to use this data to reveal the social organization behind them based on the production and circulation of ceramics. We present here a new general petrographic classification and interpretation originated from the interdisciplinary collaboration between the University of Modena and Reggio Emilia and the CNR-ISPC (Roma): the 'Wikipottery' project for Central Mediterranean pottery[2].

Samples and database

The collection of samples results from more than 30 years of fieldwork and sampling carried out by our team in close collaboration with numerous archaeologists[3]. The majority belongs to well identifiable specimens (culturally and chronologically attributable). The collection includes different pottery wares, other various ceramic artifacts (daubs, cooking slabs, kilns, loom weights, figurines…) and geological raw materials (clays and sands). The chronological timeframe represented is mainly prehistoric and protohistoric: Neolithic - Early Iron Age (7th–1th millennium BCE). The geographical distribution is not homogeneous, being influenced by the sampling history of our team, but covers large portions of the Eastern Po Valley, the Adriatic, Ionian and Southern Tyrrhenian areas, Sicily and Malta.

A Geo-database was designed and realized for a combined management of the different kind of data: geographical data, related mainly to the locations of the archaeological contexts and descriptive data, related to the attributes of the contexts and artifacts[4]. This framework has been used as data storage and as an analytical

[1] In a famous world's history in 100 objects only 10% of the entire selection is made with clay, including six pots and one cluster of sherds: the Tanzianian Kilwa potsherds defined as "a collection of 'rubbish' useful to reveal networks" (MacGregor 2010).

[2] Preliminary presentations at the European Meeting of Ancient Ceramics: Padova (2013) and Athens (2015).

[3] First investigations and analyses were performed at the Museo delle Origini, Sapienza University, Rome.

[4] Descriptive, classificatory and interpretative data (texts, numbers and images): provenance, publication, preservation, shape, decoration, technological/macroscopic characteristics, composition (analytical data),

tool to produce statistical and distributive analysis. The whole database now includes more than 2500 samples from nearly 200 mainland and island sites. The collection of the data is organized by the authors and several students have been involved in the project (including an experimental Chinese-Mandarin version).

Structure and meaning of the petrographic classification

Pottery fabric or paste composition is mainly investigated by chemical, micro-chemical and minero-petrographic analyses.

For finer wares -mainly composed of clay- the standard methodology is the definition of the chemical reference groups and the identification of local specimens, outliers and imports, for example the case study of the Mycenaean and Italo-Mycenaean pottery (Jones *et alii* 2014).

The *Impasto* traditional Italian protohistoric ware is generally coarse and characterized by the presence of clasts with the ceramic paste being the result of mixing different materials such as clay, soil, rocks, minerals, grog, shells, organic materials (Carpenito *et alii* 2009). Other technological characteristics are the burnished surface and the handmade (coil and/or mold) manufacturing technique; decorations are mainly incised or impressed.

For this textural characteristic, petrography[5] is the main tool to investigate the *Impasto*, the bulk chemical composition being often insufficient or even misleading (Day, Kiriatzi 1999; Levi 2010; Neff *et alii* 1989).

The petrographic classification has been articulated on two main levels: groups and fabrics. This system follows a monothetic (hierarchical) structure (Whallon 1972) for the definition of the Groups and uses an approach typical of the polythetic classification (Clarke 1970) for the Fabrics.

Group: defines the geological/lithological characteristics of the principal clasts (whether as temper added by potters or naturally-occurring in clay deposits) and is articulated using the following nomenclatures:

- E=Effusive, I=Intrusive, M=Metamorphic, S=Sedimentary, G=Generic, Z=without temper. Groups characterized by different lithological characters are indicated with the appropriate labels, for example ES=Effusive + Sedimentary;
- due to the peculiar complexity and variability of the effusive components in the Italian geological make-up, the Effusive group is further subdivided based on chemical composition and inspired by TAS (Total Alkali Silica) diagram: EB= Basaltic, EA=Andesitic, ET=Trachytic, ED=Daci-rhyolitic, EP=Phonolitic;
- when a non-negligible background fraction, such as detrital quartz, is present alongside a dominant introduced and coarser Effusive component, a lowercase letter is added to indicate the presence of this detrital fraction: q=quartz groundmass; m=mica groundmass;
- the presence of grog -crushed ceramic- a diffused component both alone or in combination with others, is specified: (+grog).

structure, classification (for example typology, technological complexity, petrographic fabrics, chemical reference groups), interpretation (suggested origin, cultural aspects or *facies*, chronology, function).

[5] Other works have inspired our project, for example the recent Mediterranean survey of Stirrup Jars (Haskell *et alii* 2011), some Italian regional projects (Capelli, Mannoni 1998; Martini *et alii* 1996), and, -of course- the pioneering work of John Williams in the 1960s (1980, 1991) now completely incorporated in our project.

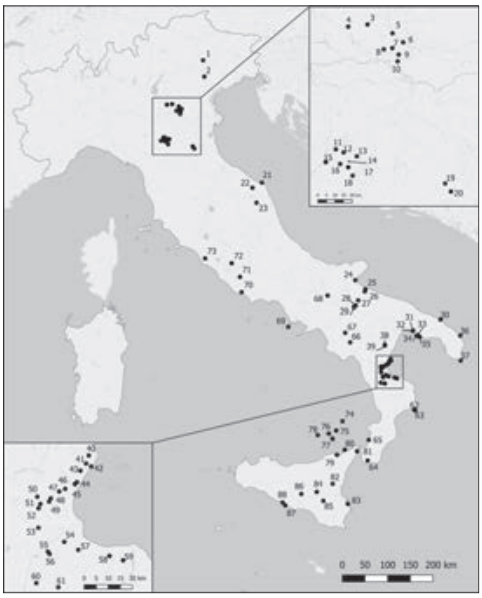

Fig. 1 - Geographical distribution of the archaeological sites; for list, chronology, samples and bibliography, see Tab. 1.

Fabric: defines the characteristics of the main constituents including the type, size, abundance and shape of the clasts and the texture and granularity of the matrix. The description follows the main criteria proposed for ceramic petrology accounting for the distribution and relative abundance of clasts, grains, voids and clay matrix (Quinn 2013; Whitbread 1986, 1989). A unique number has been assigned to each fabric in the general lithological group.

This rigorous scientific approach is based on the heuristic and ethical[6] intuition that potters' production styles and social tendencies and habits must be readable and measurable in the recipes of every single artifact. This is because the recipe defines all mechanical, functional and technological properties of every production. Our classification tries to merge minor differences highlighting the major compositional and textural characters that possibly derive from deliberate choices of the potter or result from the local availability of raw materials in the frame of the socially accepted behavior. These compositional formulae are conceptually on the same level as the morphological types defined by quantitative approaches (for example Clarke 1970). The evaluation of the variability/standardization gives then clues illustrating the social organization of production, ranging from household to workshop levels (Levi 2010, Levi, Muntoni 2014).

Our current aim for creating this classification system and database is the systematic, statistical analysis of fabric geographical distribution and local variability in order to allow a rigorous definition of the significant taxonomic units or 'types' representing technological compositions that identify the petrographic signatures of individual production centers or even of specific potters.

FABRICS DISTRIBUTION AND INTERPRETATION

In this paper for the first time we present together the Bronze Age and Early Iron Age fabrics of our Central Mediterranean collections[7]: 1654 samples from 88 archaeological sites (Fig. 1, Tab. 1). A total of 169 fabrics have been defined and are summarized in table 2. This new classification allows for discussion of results and implications at a more general level, whilst a more detailed presentation for specific geographical ar-

[6] Regarding emic/ethic opposition in pottery typology and classification see, for example: Ford 1954a, 1954b; Klejn 1982; Spaulding 1953, 1954; Wallon and Brown 1982.

[7] For a general survey of the Neolithic and Chalcolithic studies see Muntoni 2002; Muntoni, Pallecchi 2006; Levi, Muntoni 2014). Neolithic and Chalcolithic samples of our project are presented in Levi *et alii* 2019 (Southern Tyrrhenian).

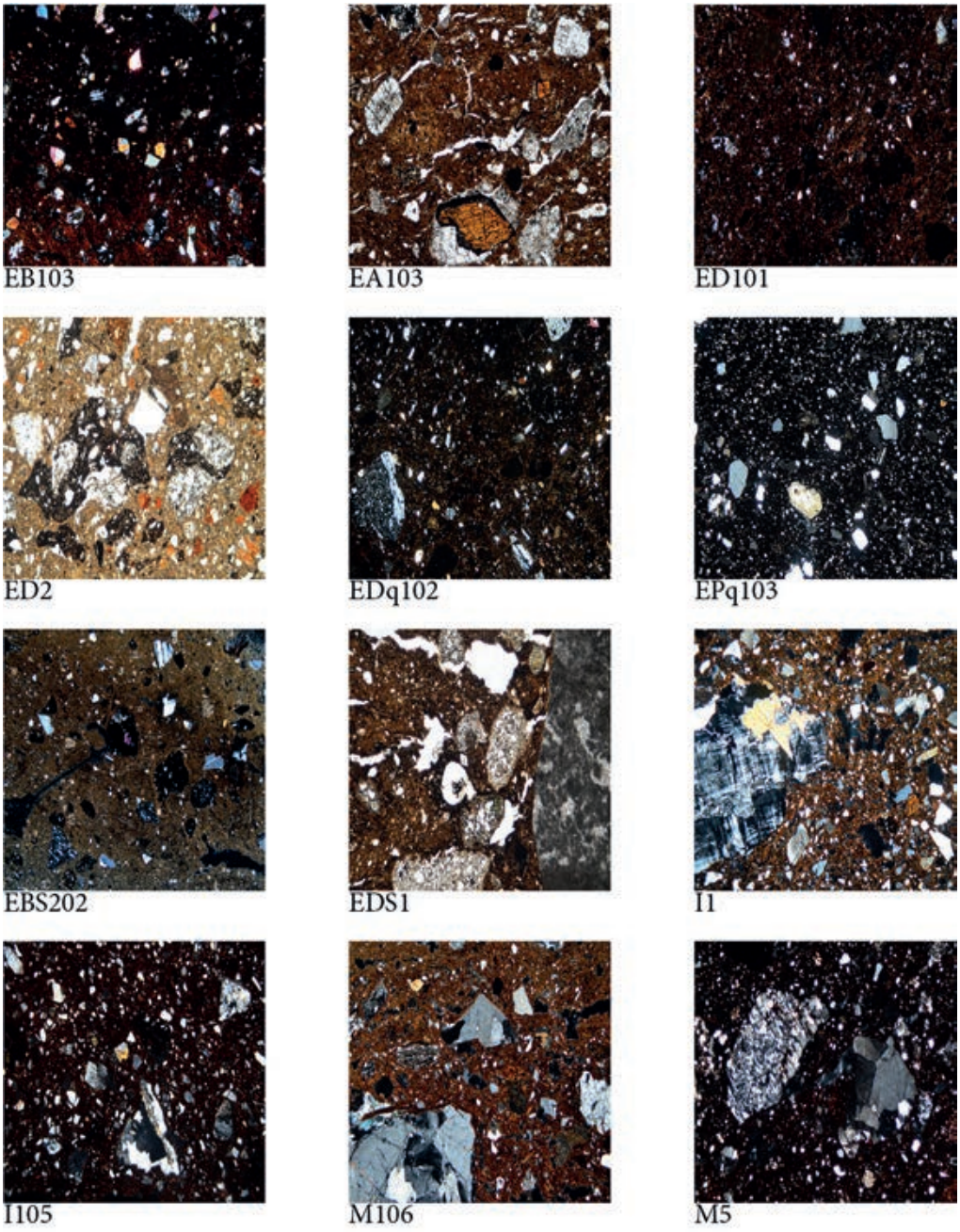

Fig. 2 - Microscope images of main selected local fabrics; horizontal dimension 5.5 mm; cross polarized light except ED102, EDS1 plane polarized light; see Tab. 2.

eas is presented elsewhere[8] (Cannavò, Levi, 2018; Levi *et alii* 2019b). The consistency of the fabrics is variable: about one quarter is represented by a single sample, half of the total by two to ten samples and a quarter by more than 11 samples each, including five fabrics with more than 50 samples and three fabrics with more than 100 examples. Local products and imports are presented and discussed separately in the following paragraphs.

Local fabrics

Products with raw materials locally available (approximately in a range of 5-10 km) are easily distinguishable in the different areas clearly reflecting the complex and variable lithological composition of the Italian terrains. For instance, in the Tyrrhenian area (peninsular Italy and islands) there is a great availability of effusive rocks, whilst raw materials are mainly sedimentary in the Adriatic and Ionian areas and in most parts of Sicily. The local fabrics are generally well-characterized by clasts present (fabrics without clasts are only significantly present in the Po Valley for tableware). We present the data according to the lithological compositions (see Tab. 2); a selection of the main fabrics is illustrated in Figs. 2 and 3.

Effusive (Fig. 4): protohistoric potters loved effusive compositions; it is the preferred choice in each area where this kind of raw material is available whether found naturally in clay or added as temper: Aeolian Islands (seven volcanic islands), Central Tyrrhenian (Lazio, Campagna), Eastern Sicily (Etna and Hyblaean Mountains) and Southern Adriatic (after the Vesuvian Pomici di Avellino eruption, Levi 2018). The geographical distribution of the different compositions of the samples reflects the variability of the local raw materials. Volcanic phonolitic components in a groundmass with quartz and mica are typical of the Central Tyrrhenian. The fabrics found on sites in the Aeolian Islands are well characterized with lava clasts or minerals pertaining to basaltic and andesitic compositions at Stromboli, Salina and Filicudi and daci-rhyolitic at Lipari; Eastern Sicily is characterized by basaltic compositions. At Lipari toward the end of the Middle Bronze Age the local volcanic temper (mostly daci-rhyolitic) is added to a clay with detrital quartz imported from North-East Sicily: with those components some Apennine pots are manufactured and, since the Late Bronze Age, the majority of the fine Impasto tableware, the Piumata and the South Italian Protogeometric wares. Combinations of effusive and sedimentary components are attested in Southern Adriatic (pumice, calcite and grog) and in Eastern Sicily (basalt and fossils).

Intrusive and metamorphic (Fig. 5) are attested in fabrics from specific areas such as the Southern Plain of Sybaris, Eastern Ionian (Calabria), Southern Tyrrhenian (Calabria and Campania), Northern Sicily (including a South Italian Protogeometric specimen) and also in the Po Valley. The main types of rock are granite, mica schist, polycrystalline quartz and quartz schist.

Mixed component fabrics combining both metamorphic and sedimentary clasts are mainly attested in the Po Valley-Veneto (polycrystalline quartz, chert and grog), in the central part of the Plain of Sybaris and Tursi area (sandstone, siltstone, feldspathic sand and polycrystalline quartz) and also in the Island of Vivara in the gulf of Napoli. Intrusive components combined with sedimentary rock and grog temper are attested at Capo Piccolo (Ionian arc).

Sedimentary and/or grog (Fig. 6) are the most frequent in terms of sites (more than

[8] The complete and detailed publication for Sicily and Malta is in preparation.

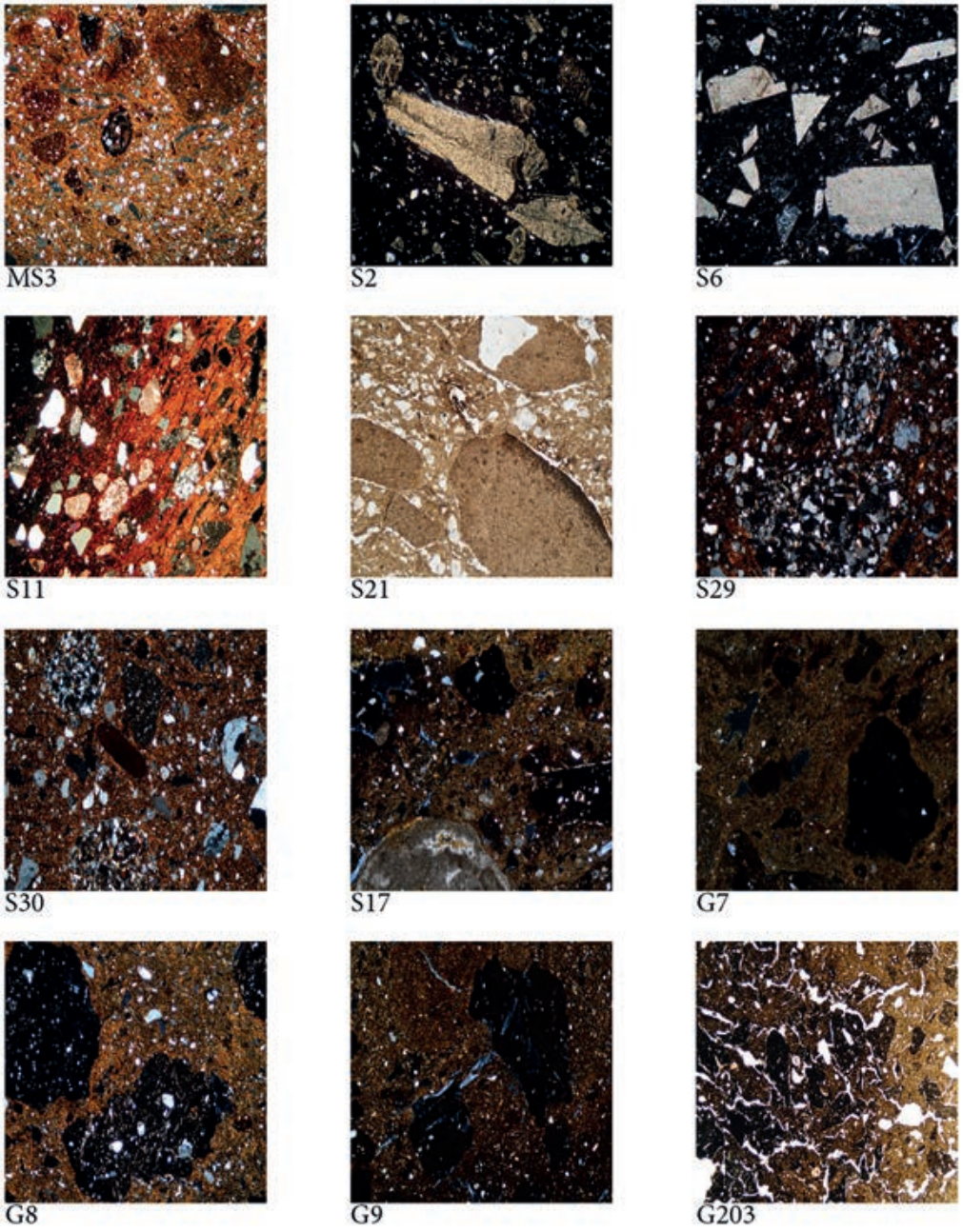

Fig. 3 - Microscope images of main selected local fabrics; horizontal dimension 5.5 mm; cross polarized light except S21, G203 plane polarized light; see Tab. 2.

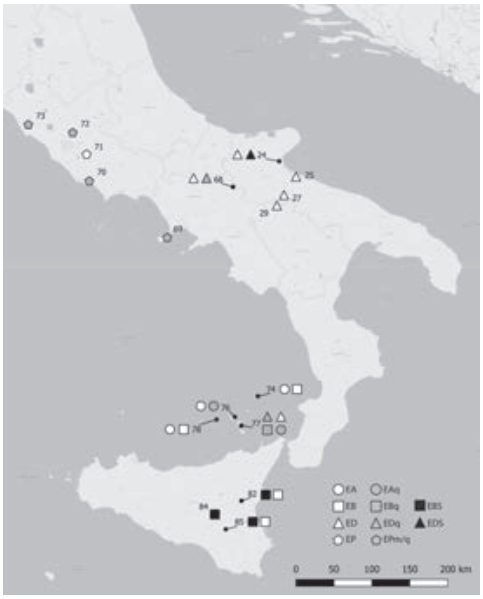

Fig. 4 - Geographical distribution of the main local fabrics: EB=Effusive Basaltic, EA=Andesitic, ET=Trachitic, ED=Daci-rhyolitic, EP=Phonolitic; EBq=Basaltic with quartz groundmass; EPq/m=Phonolitic with quartz/mica groudmass; EBS=Basaltic+Sedimentary; EDS=Daci-rhyolitic+Sedimentary; see Tab. 1.

Fig. 5 - Geographical distribution of the main local fabrics: I=Intrusive, IM=Metamorphic+Intrusive; IS+Intrusive+Sedimentary; M=Metamorphic, MS=Metamorphic+Sedimentary; see Tab. 1.

50), fabrics (more than 50) and number of samples (almost 700). We discuss these compositions together because grog is more diffused in sedimentary environments, alone or in combination with sedimentary components. The calcite/grog alternative in ancient pottery has been frequently debated, with the grog probably better performing for pots fired in oxidizing conditions after some experimental reproduction (see discussion in Levi 2010). Large fossils are attested in the Po Valley (Veneto) and at Scoglio del Tonno in Taranto area; calcite is frequent in the Po Valley, at Coppa Nevigata and in the northern part of the Plain of Sybaris; micritic calcite is present in Romagna, Southern Adriatic and Northern Plain of Sybaris; siltstones and sandstones (often combined) are typical of the Northern Plain of Sybaris. Fabrics with sedimentary components and grog are frequent in the Po Valley, in Southern Adriatic and in Sicily; fabrics characterized only by grog are frequent in the Po Valley-Terramare area, Middle Adriatic, Southern Adriatic, Ionian arc and Sicily.

Imported fabrics

For 41 fabrics the compositions are not compatible with the lithology of the site/area of discovery and can be classified as imports (see table 3). Among them, four fabrics in the Plain of Sybaris and three fabrics in the Aeolian are attested in both their production areas and in other sites, therefore suggesting the existence of regional circulation networks (see below). The majority of imports belong to the areas with most numerous sampling (Plain of Sybaris in the Ionian Arc and Aeolian Islands in the Southern Tyrrhenian sea) and/or with a larger lithological variability. Other projects involving Northern Tyrrhenian,

another area with a high lithological variability have also detected a significant percentage of imports, very often with effusive compositions (Mannoni 19914; Mannoni, Giannichedda 1996; Martini *et alii* 1996).

The imports outline the existence of the following networks:

- Plain of Sybaris/Ionian: circulation mainly involves Impasto produced in the southern part of the plain and imported to the north at a distance of 20-40 km[9]. The majority of imports are closed vessels suitable for transport with fabrics characterized by intrusive and metamorphic components (Levi 1999);
- Aeolian Islands/Southern Tyrrhenian: Aeolian products circulating between the Islands and in the Tyrrhenian during the Early-Middle Bronze Age. Lipari products with daci-rhyolitic components circulated toward the other Aeolian Islands and in the Southern Tyrrhenian (as also testified by the Pignataro di Fuori shipwreck). Products of the other Islands (Filicudi, Salina, Stromboli) with andesitic components circulated in the Archipelago, but not toward Lipari, and in several locations in Southern Tyrrhenian. Imports from Lipari include Capo Graziano decorated vessels (at Vivara and Messina) and imports from the other Islands include pithoi and cooking pots (at Milazzo, Tindari and Taureana) (Levi *et alii* 2019);
- Southern Tyrrhenian: this network can be further articulated according chronology, wares and sites: a) Impasto ware with a wide range of compositions suggesting multiple origins in the Peninsula and Sicily toward the Archipelago (abundant at Stromboli) during the Early-Middle Bronze Age; imports include some Rodì-Tindari and Apennine pots (Levi *et alii* 2019); b) South Italian Protogeometric vessels imported to Lipari from the Peninsula during the Late Bronze Age (Williams, Levi 2008);
- Sicily: Early/Middle Bronze Age products of the Etna are in circulation toward the northern coast of Sicily (Milazzo, Messina), including a Castelluccian amphora;
- Central South Mediterranean: Borg-in-Nadur pottery from Malta toward the southern coast of Sicily (Cannatello). So far, no imports from Sicily have been found at Malta (Tanasi *et alii* 2019);
- Eastern Mediterranean: a huge circulation network involving prod-

Fig. 6 - Geographical distribution of the main local fabrics: S=Sedimentary, S (+grog)=Sedimentary + Grog; G (+grog)=Generic with grog; see tab. 1.

[9] A similar circulation pattern is attested for the pithoi, the very large vessels (up to 1000 lt) used for transport or storage (Levi 1999).

ucts and craftsmen. In the present collection Cypriot pithoi with effusive components have been found at Salina and Cannatello in Middle Bronze Age 3/Recent Bronze Age contexts. Other petrographic analyses outlined the presence of Cretan Stirrup Jars at Cannatello (Haskell *et alii* 2011) whilst the numerous imports from the Aegean dated from the Middle to the Late Bronze Age according chemical composition have been presented and discussed in Jones *et alii* 2014;

- Western Mediterranean: imports from Sardinia have been found in Lipari and Cannatello in Late Bronze Age contexts: Nuragic pithoi and closed vessels with andesite and mica schist and, possibly, a one-spouted pinched lamp (Levi *et alii* 2017).

DISCUSSION AND PERSPECTIVES

Several geographically distinct patterns have emerged from examination of the database, including the impact of local geology on the occurrence of specific clasts in rock-gritted fabrics, the direct correlation of specific inclusions in fabrics to functional classes of vessels, the non-linear overlapping between stylistic and technological choices, and the circulation involving specific wares and regions.

The local lithology strongly influences the choice of raw materials, with the preference of effusive components where available. Grog is diffused in sedimentary areas and only in few cases used in fabrics with different compositions. Among the sedimentary areas here considered the Northern Plain of Sybaris is the only one where the grog is not diffused, but with an abundant use of siltstone.

Chronological and functional variability has been observed in some site assemblages represented by numerous ceramic samples, for example at Broglio di Trebisacce and at Coppa Nevigata where a clear preference has been shown for calcite-bearing fabrics being used to make cooking pots, with pumice found solely in tableware fabrics. In the Po Valley, dominated by grog fabrics, no main chronological variability is evident, but some functional differences between tableware and cooking pots are evident. At Lipari a single fabric shows a remarkable continuity through the Early and Middle Bronze Age (a phenomenon observed since the first occupation of the Island in the Neolithic). However, when all the other Aeolian islands are abandoned in correspondence of a strong cultural change in the Late Bronze Age, the manufacture is innovative and versatile with the introduction of imported clay, a range of new types of clasts and painted decorations.

The combination of the cultural aspects (*facies*) and regional groups with fabrics/technology can be used to understand cultural interactions, boundaries and identities. Some case studies show the possible correlation between regional groups and technological choices or, conversely, technological choices that cross the barriers. For instance in the first case, the stylistic separation between central and southern Adriatic is coherent with the different distribution of grog (central Adriatic) and sedimentary/silicates fabrics (southern Adriatic), in the second case, grog fashion is diffused both in Terramare (Po Valley) and in central Adriatic, but it is absent from the Romagna area (Cannavò, Levi 2018).

Regarding the circulation in the Central Mediterranean the petrographic data for Impasto and other coarse products are complementary to the chemistry of the fine, painted and wheel-made tableware and prestigious pottery imported in Italy from the Aegean since the Middle Bronze

Age. Our set of petrographic analyses[10] underlines the relevance of maritime circulation, at different scales, not only for prestigious vessels but also for utilitarian and transport including large pithoi. This is particularly visible in the case of the Aeolian Archipelago where the combination of the peculiar local geology and the extension of the research project allow a very articulated reconstruction. The presence of imported vessels especially in coastal sites is a logical consequence of the sea being, more than the land, a means of connection, especially since the half of second millennium BCE when the use of the sail is adopted in the Central Mediterranean zone (Broodbank 2013; Knapp, van Dommelen 2015; van Dommelen, Knapp 2010).

With regard to whether it is possible to confirm either the circulation of pots or the movement of potters between regions and the meaning of cultural boundaries we can consider some results about specific wares and styles recovered outside their main distribution/production areas. For example, locally-produced "exotic"-style pots (i.e. imitations) are usually interpreted as the production of non-local potters or, alternatively, of local potters adopting/imitating foreign traditions (Levi 2010). A preliminary summary (due to the limited number of analyses for some cases) is presented in table 4. For the specialized Italo-Mycenaean ware the technological transfer has been interpreted as the result of a complex pattern involving the presence of Aegean potters and the progressive introduction of local potters in the manufacturing process (Jones *et alii* 2014; Borgna, Levi 2015).

For the other wares much more work has to be done: the cultural and social meaning of the exotic pottery locally produced, challenge the definition of the cultural aspects involving topics like identity, ethnicity, and social organization of production. Numerous styles (Capo Graziano, Apennine, Nuragic, Rodì Tindari, South Italian Protogeometric and Piumata) appear to be imitated. For instance, in the case of Rodì Tindari produced at Stromboli, the hypothesis of a female household workshop production coupled with a southern Tyrrhenian distribution network involving marriage exchanges has been hypothesized (Levi *et alii* 2017).

We hope that this (proposal of) fabric classification reinforces the idea that composition and technology are embedded in the typological method and useful for interpretation of the archaeological record. And, because this is a work in progress, we would like to finish with some open questions:

- What are the implications of clay selection, refinement and mixing? What is the relative importance of the groundmass (clay, silt, soil…) and the clasts?
- Are some components more important than others? When are the minor components (very few/rare) crucial in the definition of the fabrics?
- How much does the degree of lithological variability in the available local raw materials influence potters' choices?
- What is the meaning of local (production) and regional (production/circulation) in different cultural and geographical contexts?
- How should we tackle the ambiguities about the circulation of pots *vs*. raw materials?
- How important is the social organization of production to defining the boundaries of significant variability?
- How can we efficiently represent and share the technological data in the publications including the ar-

[10] Together with other petrographic projects for Northern Tyrrhenian, see above.

chaeological drawing? How can we fully incorporate the fabrics in the classificatory game of the archaeological typology?

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Site N.	*Site*	*Chronology*	*Samples (PE)*	*Other analyses*	*Main archaeometric publications (with references therein)*
1	Castel de Pedena	EBA-EIA	6	XRF	Cannavò, Levi 2018
2	Montebelluna	EIA	4		Cannavò, Levi 2018
3	Bovolone	RBA	11	XRD, XRF, ICP	Cannavò, Levi 2018; Cannavò *et alii* 2017a; Jones *et alii* 2014
4	Castion d'Erbè	RBA-FBA	21		Cannavò, Levi 2018
5	Terranegra	RBA	6	INAA	Cannavò, Levi 2018; Cannavò *et alii* 2017a; Jones *et alii* 2014
6	Lovara	RBA	6	ICP	Cannavò, Levi 2018; Cannavò *et alii* 2017a; Jones *et alii* 2014
7	Fondo Paviani	MBA-RBA	12	XRD, INAA, ICP	Bettelli et alli 2015; Cannavò, Levi 2018; Cannavò *et alii* 2017a; Jenkins *et alii* 1999; Jones *et alii* 2002, 2014
8	Castello del Tartaro	MBA3-RBA	3	INAA	Cannavò, Levi 2018; Jenkins *et alii* 1999; Jones *et alii* 2014
9	Fabbrica dei Soci	MBA3-RBA	7	XRD, XRF, INAA	Cannavò, Levi 2009, 2018; Cannavò *et alii* 2017; Jenkins *et alii* 1999; Jones *et alii* 2014
10	Canova	MBA	5	ICP	Cannavò, Levi 2018; Jenkins *et alii* 1999
11	Casinalbo	MBA-RBA	39	XRD, XRF	Cannavò, Levi 2014, 2018; Cannavò *et alii* 2017a
12	Montale	MBA2-RBA1	81	XRD, XRF, X-Ray, Experimental	Cannavò, Levi 2018; Cannavò *et alii* 2017a
13	Spilamberto	MBA-RBA	4		Cannavò, Levi 2018
14	Montebarello	MBA	12	XRD, XRF, X-Ray, Experimental	Cannavò, Levi 2018; Cannavò *et alii* 2017a
15	Pontenuovo	MBA-RBA	13	XRD, XRF, X-Ray, Experimental	Cannavò Levi 2018; Cannavò *et alii* 2017a
16	Gorzano	MBA-RBA	54	XRD, XRF, X-Ray, Experimental	Cannavò, Levi 2018; Cannavò *et alii* 2017a

17	Ca de Monesi	MBA-RBA	5	XRD, XRF, X-Ray, Experimental	Cannavò, Levi 2018; Cannavò *et alii* 2017a
18	Castiglione di Marano	MBA-RBA	13	XRD, XRF, X-Ray, Experimental	Cannavò, Levi 2018; Cannavò *et alii* 2017a
19	San Giuliano Toscanella	MBA3-RBA	8	XRD, XRF, X-Ray	Cannavò, Levi 2018; Cannavò *et alii* 2017a
20	Monte Castellaccio	MBA-RBA	12	XRF, X-Ray	Cannavò, Levi 2018; Cannavò *et alii* 2017a
21	Ancona	MBA-FBA	4	ICP	Cannavò, Levi 2018; Jones *et alii* 2014
22	Jesi	MBA-RBA	5	ICP	Cannavò, Levi 2018; Jones *et alii* 2014
23	Tolentino	MBA-RBA	5	ICP	Cannavò, Levi 2018; Jones *et alii* 2014
24	Coppa Nevigata	MBA-RBA	155	XRD, XRF, INAA, ICP, SEM, Porosity, X-Ray,	Cannavò, Levi 2018; Cioni *et alii* 2000; Jones, Levi 2012; Jones *et alii* 2014; Levi 2018; Levi *et alii* 1995
25	Madonna di Loreto	MBA3	3	INAA, SEM	Cannavò, Levi 2018; Cioni *et alii* 2000
26	Terra di Corte - Ipogeo 3	MBA2	7	INAA, SEM	Cannavò, Levi 2018; Cioni *et alii* 2000
27	Madonna di Ripalta	MBA-EIA	10	XRF, INAA, SEM	Cannavò, Levi 2018; Cioni *et alii* 2000
28	Lavello T.743	MBA	5		Cannavò, Levi 2018
29	Diga Rendina - Sito 2	MBA	5		Cannavò, Levi 2018
30	Punta le Terrare	MBA	5	INAA	Cannavò, Levi 2018; Jones *et alii* 2014
31	Scoglio del Tonno	MBA-EIA	8	ICP	Cannavò, Levi 2018; Jones *et alii* 2014
32	San Domenico-Taranto	MBA-RBA	1	INAA	Cannavò, Levi 2018; Jones *et alii* 2014
33	Lugovivo-Pulsano	RBA	1	INAA, ICP	Cannavò, Levi 2018; Jones *et alii* 2014
34	Porto Perone	MBA-RBA	3		Cannavò, Levi 2018; Jones *et alii* 2014
35	Torre Castelluccia	MBA-EIA	3	INAA, ICP	Cannavò, Levi 2018; Jones *et alii* 2014
36	Roca	MBA-EIA	9	ICP, SEM	Cannavò, Levi 2018; Jones *et alii* 2014
37	Leuca-Punta Meliso	RBA-FBA	9	INAA	Cannavò, Levi 2018; Jones *et alii* 2014
38	Tursi Castello	BA	1	INAA	Cannavò, Levi 2018; Levi 1999
39	Tursi San Martino	BA	2	INAA	Cannavò, Levi 2018; Levi 1999
40	San Cavalcatore	BA	4	INAA	Cannavò, Levi 2018; Levi 1999
41	Timpone Golla	BA	3		Cannavò, Levi 2018; Levi 1999
42	Tarianne	MBA	7	INAA	Cannavò, Levi 2018; Levi 1999
43	Timpone Lacco	RBA(FBA?)	5		Cannavò, Levi 2018; Levi 1999
44	Valle Carlodraga	BA	4		Cannavò, Levi 2018; Levi 1999

45	Broglio di Trebisacce	MBA-EIA	182	XRD, AAS, INAA, ICP, SEM, X-Ray, Experimental	Buxeda i Garrigós *et alii* 2003; Cannavò, Levi 2018; Jones *et alii* 2014; Levi 1999; Levi, Sonnino 2006; Vanzetti *et alii* 2014
46	Villapiana	MBA-RBA	7	INAA	Cannavò, Levi 2018; Levi 1999
47	Timpone Motta Cerchiara	MBA-EIA	5	INAA	Cannavò, Levi 2018; Levi 1999
48	Timpone Motta Francavilla	MBA-EIA	7	INAA	Cannavò, Levi 2018; Levi 1999
49	Timpa Castello Francavilla	MBA-EIA	6	INAA	Cannavò, Levi 2018; Levi 1999
50	Raganello	BA	2		Cannavò, Levi 2018; Levi 1999
51	Monte S. Nicola	FBA-EIA	3	INAA	Cannavò, Levi 2018; Levi 1999
52	Pietra Castello Cassano Ionio	EIA	4		Cannavò, Levi 2018; Levi 1999
53	Torre Mordillo	MBA-EIA	15	XRD, INAA	Cannavò, Levi 2018; Jones *et alii* 1994, 2014; Levi 1999
54	Fontana del Finocchio	FBA-EIA	7	INAA	Cannavò, Levi 2018; Levi 1999
55	Serra Castello	EIA	8	INAA	Cannavò, Levi 2018; Levi 1999
56	Serra Cagliano	MBA-RBA	6	INAA	Cannavò, Levi 2018; Levi 1999
57	Rosa Russa	MBA	13	INAA, SEM	Buxeda i Garrigós *et alii* 2003; Cannavò, Levi 2018; Jones *et alii* 2014; Levi 1999
58	Basili di Rossano	RBA	4	INAA	Cannavò, Levi 2018; Levi 1999
59	Strange	MBA	7	INAA	Cannavò, Levi 2018; Levi 1999
60	Bisignano	EIA	14		Cannavò, Levi 2018; Levi 1999
61	Acri	MBA	5		Cannavò, Levi 2018; Levi 1999
62	Capo Piccolo	MBA1-2	44	INAA	Cannavò, Levi 2018; Jones *et alii* 2014
63	Capo Rizzuto	BA	8	INAA	Cannavò, Levi 2018; Jones *et alii* 2014
64	Calanna	EBA-MBA1	11		Levi *et alii* 2019
65	Taureana	MBA-FBA	18	ICP	Levi *et alii* 2019; Jones *et alii* 2014
66	Grotta del Pino	EBA?-MBA	2	INAA	Jones and Levi 2000; Jones *et alii* 2014; Levi *et alii* 2019
67	Pertosa	MBA	25		Levi *et alii* 2019
68	La Starza	EBA-MBA	4	XRF, SEM	Cannavò, Levi 2018; Cioni *et alii* 2000; Levi *et alii* 2019
69	Vivara - Punta Mezzogiorno	MBA1-2	17		Cazzella et alii 1997; Jones *et alii* 2014; Levi *et alii* 2019
70	Casale Nuovo	RBA-FBA	20	AAS-INAA	Jones *et alii* 2014; Levi *et alii* 2019
71	Monte dei Ferrari	EIA	2		Levi et alii 2019
72	Fidene	EIA	9		Levi et alii 2019
73	Monte Rovello	MBA-FBA	2	INAA	Jones *et alii* 2014; Levi *et alii* 2019
74	Stromboli - San Vincenzo	NE-MBA2	144	LA-ICP-MS, pXRF	Brunelli *et alii* 2013; Cannavò *et alii* 2017b; Levi *et alii* 2014, 2019
75	Panarea - Milazzese	MBA3	11		Williams 1991; Levi *et alii* 2019
76	Salina - Serro dei Cianfi, Portella	MBA	43	LA-ICP-MS	Levi *et alii* 2019; Williams 1991
77	Lipari - Acropolis, Diana, Pignataro	BA	174	LA-ICP-MS	Brunelli *et alii* 2013; Levi *et alii* 2014, 2019; Williams 1980; Williams, Levi 2008

78	Filicudi - Filo Braccio, Montagnola	EBA-MBA	60	LA-ICP-MS	Brunelli *et alii* 2013; Levi *et alii* 2014, 2019; Williams 1991
79	Tindari	MBA1-2	11		Levi *et alii* 2019
80	Milazzo - Scuole elementari, Viale dei Cipressi	EBA-FBA	19	XRF-ICP	Levi *et alii* 2019
81	Messina - Via La Farina, Casa dello Studente, Via dei Mille	EBA/MBA	8	XRF	Levi 2000; Levi *et alii* 2019
82	Paternò	BA	6		
83	Thapsos	MBA3	25	ICP	Jones and Levi 2004
84	Morgantina	FBA-EIA	33	XRD, XRF	Fragnoli, Levi 2012
85	Madonna del Piano	FBA-EIA	20	XRD, XRF	Fragnoli, Levi 2018
86	Tornambè	EBA-MBA3	6		Fragnoli *et alii* 2012
87	Monte Grande	EBA	25		Jones *et alii* 2014
88	Cannatello	MBA3-FBA1	26	ICP	Jones *et alii* 2014; Levi *et alii* 2017

Tab. 1 - Sites, analyses and archaeometric bibliography; see fig. 1. Chronology: BA=Bronze Age, EBA=Early Bronze Age, MBA=Middle Bronze Age, RBA=Recent Bronze Age, FBA=Final Bronze Age, EIA=Early Iron Age, IA=Iron Age.

Group	*Fabric*	*Main components*	*N.*	*Sites*	*Chronology*	*Local special wares*	*Non local wares*
EB	EB201	basalt	5	Madonna del Piano	FBA-EIA		
	EB202	basalt	1	Paternò	FBA	Piumata	
	EB101	basalt	1	Messina	MBA		Pithos
	EB203	amphibole - basalt	2	Cannatello	MBA3/RBA		Pithoi
	EB102	pyroxene - basalt	2	Salina - Portella	MBA3		Pithoi
	EB103	clinopyroxene - plagioclase - basalt	13	Stromboli - San Vincenzo, Filicudi - Filo Braccio & Montagnola	EBA, MBA1-2		
	EB204	glass - plagioclase	5	Madonna del Piano	FBA-EIA	Geometric, Monochrome	
EA	EA101	coarse andesite	2	Stromboli - San Vincenzo	EBA/MBA1-2		
	EA103	andesite - plagioclase	114	Stromboli - San Vincenzo, Salina - Portella, Filicudi - Filo Braccio & Montagnola, Milazzo - V.le dei Cipressi, Tindari, Taureana	EBA-MBA	Apennine	Pithoi, cooking pots
	EA106	plagioclase - pyroxene	4	Stromboli - San Vincenzo, Filicudi - Montagnola	EBA/MBA1-2		
ED	ED101	volcanic glass - pumice	124	Stromboli - San Vincenzo, Panarea - Milazzese, Salina - Serro dei Cianfi & Portella, Lipari - Acropolis & Diana & Pignataro, Filicudi-Montagnola, Messina, Vivara - P.ta Mezzogiorno	BA		Capo Graziano decorated
	ED1	pumice	52	Coppa Nevigata, Madonna di Loreto, Madonna di Ripalta	MBA1-RBA2		
	ED2	clinopyroxene - feldspars	2	Diga Rendina	MBA		
	ED3 (+grog)	pumice - grog	4	Coppa Nevigata	RBA1-RBA2		
	ED104	pumice - augite - nepheline	2	La Starza	EBA-MBA		

ET	ET1	trachyte	1	Terranegra	RBA		Impasto
EP	EP102 (+ grog)	grog - pyroxene	2	Monte dei Ferrari	EIA		
EBq	EBq101	basalt; quartz groundmass	3	Lipari - Acropolis	RBA-FBA	S.I. Protogeometric	
EAq	EAq102	andesite; sandy quartz groundmass	1	Lipari - Acropolis	RBA-FBA	S.I. Protogeometric	
	EAq103	coarse andesite - pyroxene; quartz groundmass	2	Lipari - Acropolis	FBA	Piumata	
	EAq104	fine andesite; silty quartz groundmass	2	Lipari - Acropolis	FBA	Piumata	
	EAq105	andesite - polycristalline quartz	4	Salina - Portella	MBA3	Apennine	
EAqm	EAqm101	andesite; quartz-mica groundmass	2	Lipari - Acropolis	RBA-FBA		Nuragic
EDq	EDq101	volcanic glass; quartz groundmass	13	Panarea - Milazzese, Salina - Portella, Lipari - Acropolis	MBA3	Apennine	Apennine
	EDq102	glass shard; quartz groundmass	36	Lipari - Acropolis	RBA-FBA		
	EDq103	pumice; quartz groundmass	1	Lipari - Acropolis	FBA	Piumata	
	EDq104	dark vescicular pumice; quartz groundmass	2	Lipari - Acropolis	FBA	S.I. Protogeometric	
	EDq105	obsidian ankaramite; quartz groundmass	1	Lipari - Acropolis	FBA	S.I. Protogeometric	
	EDq106	obsidian; quartz groundmass	1	Lipari - Acropolis	FBA	S.I. Protogeometric	
	EDq107	nepheline - pumice - quartz	2	La Starza	EBA-MBA		
EPm	EPm101	nepheline - clinopyroxene; micaceous groundmass	1	Monte Rovello	MBA-FBA		
EPq	EPq102	plagioclase - pyroxene; nepheline groundmass	3	Fidene	EIA		
	EPq103	feldspar - plagioclase; quartz - nepheline groundmass	11	Vivara - Punta Mezzogiorno	MBA1-2		
	EPq104	pyroxene - ARF; quartz - nepheline groundmass	1	Casale Nuovo	RBA-FBA		
EAM	EAM201	plagioclase - mica	4	Cannatello	MBA3/FBA1		Nuragic
EBI	EBI101	basalt - granite	4	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
EBS	EBS201	femic, calcareous-fossiliferous groundmass	2	Morgantina	FBA3-IA	Geometric, Piumata	
	EBS202	feldspatic, calcareous-fossiliferous groundmass	7	Morgantina	FBA3-IA	Geometric, Piumata	
	EBS203	vitrophiric, calcareous-fossiliferous groundmass	7	Morgantina	FBA3-IA	Piumata, Pithoi	
	EBS204	basalt - fossils	1	Paternò	FBA	Piumata	
	EBS205 (+grog)	basalt - grog - fossils	4	Paternò	EBA-MBA2	Castelluccian	
	EBS206	calcite - fossils - glass	7	Madonna del Piano	FBA-EIA	Piumata, Monochrome	
EDS	EDS1	micritic calcite - pumice	18	Coppa Nevigata	MBA1-RBA2		
	EDS2 (+grog)	calcite - grog - pumice	3	Coppa Nevigata	MBA3-RBA2		
	EDS3 (+grog)	quartz - grog - pumice	1	Leuca-Punta Meliso	FBA		
I	I1	granite	13	Basili di Rossano, Broglio, Strange	MBA-IA		Impasto
	I101	granite	5	Filicudi - Filo Braccio, Lipari - Acropolis	EBA, FBA		S.I. Protogeometric

I	I2	granite	1	Montebelluna	IA		
	I3	granite - quartz	4	Capo Piccolo	MBA1-2		
	I103	quartz - granite	7	Tindari	MBA1-2		
	I104	quartz - granite	10	Calanna	EBA-MBA1		
	I105	quartz - granite	14	Taureana	MBA3, RBA?		
	I106	quartz - granite	55	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	I107 (+grog)	granite - grog	3	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	I108 (+grog)	grog - quartz - granite	1	Salina - Portella	MBA3		Impasto
IM	IM1	granite - micaschist	6	Broglio di Trebisacce	MBA-EIA		Impasto
	IM101	granite - schist	16	Stromboli - San Vincenzo, Lipari - Acropolis, Filicudi-Montagnola	EBA-FBA		Apennine, S.I. Proto-geometric
	IM102	granite - mica	4	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	IM103	quartz - schist - granite	1	Lipari - Acropolis	FBA		Nuragic
	IM104	granite; micaceous ground-mass	1	Monte Rovello	MBA-FBA		
IS	IS1	micritic calcite - granite	5	Capo Piccolo, Villapiana	MBA		Impasto
	IS101	granite - siltstone - sand-stone	1	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
M	M201	mica; siliceous groundmass	2	Morgantina	FBA3-IA	incised wheel made	
	M202	mica - micaschist	1	Cannatello	MBA3/FBA1		Lamp
	M1	micaschist	2	Castion d'Erbè	RBA-FBA		
	M102	micaschist	2	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	M2	micaschist	1	Capo Piccolo	MBA1-2		
	M3	feldpars - plagioclase - mi-caschist	5	Broglio di Trebisacce	MBA-IA		Impasto
	M8	feldspars - biotite	1	Punta Meliso	FBA		
	M106	polycrystalline quartz - gra-nite; micaceous groundmass	8	Milazzo - V.le dei Cipressi	EBA-MBA3		
	M105	polycrystalline quartz - quartzschist	3	Milazzo - V.le dei Cipressi	FBA	S.I. Protogeo-metric	
	M103	polycrystalline quartz - quartzite	7	Milazzo - Scuole Elementari, Messina	MBA		
	M7	quartz - feldspars	10	Capo Piccolo, Capo Rizzuto	BA		
	M107	quartz - polycrystalline quartz	5	Pertosa	MBA		
	M4	quartzschist	33	Acri, Bisignano, Fontana Finocchio, Rosa Russa, Torre Mordillo, Serra Cagliano, Serra Castello, Strange, Villapiana	MBA-IA		Impasto
	M5	quartz - quartzschist	45	Acri, Bisignano, Basili di Ros-sano, Fontana Finocchio, Fran-cavilla Marittima, Rosa Russa, Serra Castello, Torre Mordillo	MBA-IA		
	M6	quartz - quarzite	9	Capo Piccolo	MBA1-2		
	M101	quartzschist - muscovite schist	2	Filicudi - Montagnola, Lipari - Acropolis	MBA1-2, RBA		Impasto
	M9 (+grog)	grog; micaceous groundmass	3	Montebelluna	IA		
	M108 (+grog)	slate - grog	1	Panarea - Milazzese	MBA3		Apennine pithos

MS	MS1	sandstone - silstone - polycrystalline quartz	10	Broglio, Pietra Castello di Cassano Ionio, Villapiana, Timpa Motta Francavilla, Tursi Castello	MBA-IA		Impasto
	MS101	quartz - quartzite - siltstone	1	Salina - Portella	MBA3		Impasto
	MS2	quartz - polycrystalline quartz - chert	16	Bovolone, Fondo Paviani, Castion d'Erbè	MBA-RBA	Apennine	
	MS4	policrystalline quartz - schist - micritic calcite	1	Castel de Pedena	EBA-IA		
	MS5	quartz - feldspatic sand	10	Broglio di Trebisacce	MBA-IA		Impasto
	MS3 (+grog)	quartz - polycrystalline quartz - chert - grog	22	Bovolone, Castion d'Erbè, Fondo Paviani, Lovara, Terranegra	MBA-RBA	Apennine	
	MS104 (+grog)	grog; micaceous groundmass	1	Vivara - Punta Mezzogiorno	MBA1-2		
S	S201	fossils	4	Cannatello	MBA3/RBA		Borg-in-Nadur
	S1	fossils	2	Scoglio del Tonno	RBA		
	S2	fossils	5	Canova, Castello del Tartaro, Fabbrica dei Soci, Terranegra	MBA-RBA		
	S202	fossiliferous clay	1	Cannatello	MBA3/FBA1		
	S3	calcite	3	Spilamberto			
	S4	calcite	1	Broglio di Trebisacce	FBA		
	S5	calcite	1	Castion d'Erbè	RBA-FBA		
	S6	calcite	20	Coppa Nevigata	MBA1-RBA2		
	S7	calcite	1	Punta Meliso	FBA		
	S9	calcite - chert	4	Castel de Pedena			
	S10	calcite - calcareous rock	7	Cà de Monesi, Castiglione di Marano, Gorzano, Pontenuovo	MBA-RBA		
	S11	calcite - calcimudstone	10	Bovolone, Castion d'Erbè, Castel de Pedena, Fabbrica dei Soci, Lovara	MBA-RBA	Apennine	
	S25	calcite - siltstone	3	Monte San Nicola, Pietra Castello di Cassano Ionio, Villapiana	MBA-IA		
	S18	crystalline carbonatic rock	10	Monte Castellaccio, San Giuliano Toscanella	MBA-RBA	Apennine	
	S13	micritic calcite	3	Broglio	RBA-IA		
	S14	micritic calcite - fossils	1	Punta Meliso	FBA		
	S15	micritic calcite - quartz	1	Porto Perone	MBA-RBA		
	S16	micritic calcite - quartz	2	Roca	FBA		
	S102	siltstone	3	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	S21	siltstone	31	Broglio, Monte San Nicola, Tarianne, Timpa Castello Francavilla	MBA-IA		
	S203	siltstone; siliceous groundmass	5	Morgantina	FBA3		
	S22	siltstone - arkose - micritic calcite	21	Broglio	MBA-IA		
	S26	siltstone - micritic calcite	16	Broglio di Trebisacce	MBA-FBA		
	S27	fossiliferous siltstone - arkose	12	Broglio di Trebisacce	MBA-IA		
	S28	micritic calcite - fossiliferous silstone	6	Broglio di Trebisacce	FBA-RBA		

S	S29	arkose	54	Broglio,Timpa Castello Francavilla, Timpone Motta Francavilla	MBA-IA		
	S30	siltstone - arkose	39	Broglio, Monte San Nicola, Tarianne, Timpone Motta Cerchiara, Timpone Golla, Timpone Lacco, San Cavalcatore, Valle Carlodraga	MBA-IA		
	S31	quartzarenite - siltstone	2	Raganello	BA		
	S32	quartz - micritic calcite - calcite	4	Leuca-Punta Meliso	FBA		
	S204	quartz and micrite calci-mudstones	1	Cannatello	MBA3/FBA1	Nuragic	
	S33	quartz - arkose	9	Broglio, Timpone Golla, Timpone Lacco, Tursi San Martino, Valle Carlodraga	BA		
	S101	quarz - feldspar - sandstone	3	Tindari	MBA1-2		
S (+grog)	S8 (+grog)	calcite - grog	10	Coppa Nevigata	MBA3-RBA2		
	S17 (+grog)	micritic calcite - grog	20	Coppa Nevigata, Madonna di Ripalta, Tolentino	MBA3-RBA2		
	S205 (+grog)	grog - fossils	3	Tornambè	EBA-MBA	Castelluccian, Thapsos	
	S206 (+grog)	grog - fossils	4	Cannatello	MBA3/FBA1		
	S207 (+grog)	grog - fossils	2	Monte Grande	EBA		
	S107 (+grog)	grog; fossiliferous groundmass	1	Lipari - Acropolis	FBA		Nuragic
	S208 (+grog)	grog; calcareous-fossilifeours groundmass	10	Morgantina	FBA3	Piumata, pithoi	
	S12 (+grog)	grog - calcite	19	Cà de Monesi, Casinalbo, Gorzano, Montale, Pontenuovo	MBA-RBA	Apennine	
	S209 (+grog)	grog - calcite	8	Thapsos	MBA3		
	S19 (+grog)	crystalline carbonatic rock - grog	4	Monte Castellaccio, San Giuliano Toscanella	MBA-RBA	Apennine	
	S20 (+grog)	grog - micritic calcite	5	Terra di Corte	MBA2		
	S210 (+grog)	grog - fossils - micritic calcite - quartz	3	Monte Grande	EBA		
	S23 (+grog)	grog - siltstone	1	Tursi San Martino	BA		
	S24 (+grog)	grog - silstone - calcite	1	Madonna di Ripalta	FBA		
	S106 (+grog)	grog - sandstone	3	Stromboli - San Vincenzo	EBA/MBA1-2		
G	G110	quartz	6	Panarea - Milazzese, Salina - Portella	MBA3		Apennine
	G201	quartz	1	Cannatello	MBA3/FBA1		Nuragic
	G5	quartz - ARF	1	Torre Castelluccia	MBA-IA		
	G6	quartz - ARF	8	Leuca-Punta Meliso, Roca	MBA-FBA		
	G103	quartz - feldspar	3	Taureana	MBA1-2? MBA		
	G105	quartz - feldspar	1	Milazzo - V.le dei Cipressi	MBA3	Apennine	
	G3	quartz - feldspar	24	Capo Piccolo	MBA1-2		

G	G106	quartz - nepheline	19	Casale Nuovo	RBA-FBA		
	G107	quartz - nepheline	1	Fidene	EIA		
	G102	quartz - nepheline - feldspar	1	Fidene	EIA		
	G101	quartz - nepheline - feldspar - pyroxene	4	Fidene	EIA		
G (+grog)	G113 (+grog)	grog - quartz - nepheline - alkali-feldspar	1	Vivara	MBA1-2		
	G114 (+grog)	grog - quartz	20	Pertosa	MBA	cooking slabs	
	G115 (+grog)	grog - quartz	4	Stromboli - San Vincenzo, Panarea - Milazzese, Salina - Portella	EBA/MBA1-2, MBA3		Apennine
	G116 (+grog)	grog; well packed ground-mass	1	Calanna	EBA-MBA1		
	G1 (+grog)	quartz - feldspar - grog	2	Torre Castelluccia	MBA-IA		
	G111 (+grog)	quartz - feldspar - grog	2	Milazzo - Scuole elementari	EBA-MBA		
	G2 (+grog)	quartz - feldspar - grog	17	Madonna di Ripalta, Lavello, Diga Rendina, Punta Le Terrare	BA		
	G4 (+grog)	quartz - feldspar - grog	9	Lugovivo-Pulsano, Porto Perone, Scoglio del Tonno	MBA-IA		
	G206 (+grog)	quartz - grog	3	Tornambè	EBA-MBA	Castelluccian, Thapsos	
	G7 (+grog)	grog	163	Cà de Monesi, Casinalbo, Castiglione di Marano, Fabbrica dei Soci, Gorzano, Montale, Montebarello, Pontenuovo, Spilamberto	MBA-FBA		
	G8 (+grog)	grog	13	Ancona, Jesi, Tolentino,	MBA-FBA		
	G9 (+grog)	grog	39	Coppa Nevigata	MBA1-RBA2		
	G202 (+grog)	grog	3	Madonna del Piano	FBA-EIA		
	G203 (+grog)	grog	17	Thapsos	MBA3		
	G204 (+grog)	grog	20	Monte Grande	EBA	Castelluccian	
	G205 (+grog)	grog	8	Cannatello	MBA3/FBA1	Nuragic	
	G117 (+grog)	grog	3	Stromboli - San Vincenzo, Grotta del Pino	EBA/MBA1-2		Impasto
	G118 (+grog)	grog	1	Stromboli - San Vincenzo	EBA/MBA1-2		Impasto
	G119 (+grog)	grog	1	Milazzo - V.le dei Cipressi	EBA-MBA1		Castelluccian amphora
no temper	Z1	no temper, micaceous	1	Castion d'Erbè	RBA-FBA		
	Z2	no temper	6	Monte Castellaccio, San Giuliano Toscanella	MBA-RBA		
	Z3	no temper	38	Castiglione di Marano, Gorzano, Montale, Montebarello, Pontenuovo	MBA-RBA		
	Z4	no temper	5	Fabbrica dei Soci, Fondo Paviani	MBA-RBA	Apennine	
	Z5	no temper	1	San Domenico-Taranto	MBA-RBA		

Tab. 2 - Fabrics classification, definition, geographical distribution, chronology and wares; see Figs. 4-6.

Network	*Suggested origin*	*Fabric*	*Main components*	*Sites*	*Non local wares*
Plain of Sybaris/ Ionian	South Plain Syb.	I1	granite	Broglio di Trebisacce	Impasto
	South Plain Syb.	IM1	granite - micaschist	Broglio di Trebisacce	Impasto
	South Plain Syb.	IS1	micritic calcite - granite	Villapiana	Impasto
	South Plain Syb.	M3	feldpars - plagioclase - micaschist	Broglio di Trebisacce	Impasto
	South Plain Syb.	M4	quartzschist	Villapiana	Impasto
	South Plain Syb.	MS1	sandstone - silstone - polycrystalline quartz	Broglio di Trebisacce, Villapiana	Impasto
	South Plain Syb.	MS5	quartz - feldspatic sand	Broglio di Trebisacce	Impasto
Aeolian/Southern Tyrrhenian	Lipari	ED101	volcanic glass - pumice	Stromboli, Panarea, Salina, Filicudi, Messina, Vivara	Capo Graziano decorated
	Lipari	EDq101	volcanic glass; quartz groundmass	Panarea, Salina	Apennine
	Stromboli, Filicudi, Salina	EA103	andesite - plagioclase	Stromboli, Salina, Filicudi, Milazzo, Tindari, Taureana	Pithoi, Cooking pots
Southern Tyrrhenian	Sicily?	EBI101	basalt - granite	Stromboli	Impasto
	Peninsula	I101	granite	Filicudi, Lipari	Impasto, S.I. Protogeometric
	Peninsula	I106	quartz - granite	Stromboli	Impasto
	Peninsula	I107 (+grog)	granite - grog	Stromboli	Impasto
	Peninsula	I108 (+grog)	grog - quartz - granite	Salina	Impasto
	Sicily/Peninsula?	IS101	granite - siltstone - sandstone	Stromboli	Impasto
	Peninsula	IM101	granite - schist	Stromboli, Lipari, Filicudi	Apennine, S.I. Protogeometric
	Peninsula	IM102	granite - mica	Stromboli	Impasto
	Messina Strait area	M102	micaschist	Stromboli	Impasto
	Messina Strait area	M101	quartzschist - muscovite schist	Filicudi, Lipari	Impasto
	Messina Strait area	M108 (+grog)	slate - grog	Panarea	Apennine pithos
	Sicily/Peninsula?	MS101	quartz - quartzite - siltstone	Salina	Impasto
	Sicily?	S102	siltstone	Stromboli	Impasto
	Sicily?	S106 (+grog)	grog - sandstone	Stromboli	Impasto
	Peninsula?	G110	quartz	Panarea, Salina	Apennine
	Peninsula?	G115 (+grog)	grog - quartz	Stromboli, Panarea, Salina	Apennine
	Peninsula?	G117 (+grog)	grog	Stromboli	Impasto
	Peninsula?	G118 (+grog)	grog	Stromboli	Impasto
Sicily	Sicily (Etna area)	EB101	basalt	Messina	Pithos
	Sicily (Etna area)	G119 (+grog)	grog	Milazzo	Castelluccian amphora
Central South Mediterranean	Malta	S201	fossils	Cannatello	Borg-in-Nadur

Eastern Mediterranean	Cyprus	EB203	amphibole - basalt	Cannatello	Pithoi
	Cyprus	EB102	pyroxene - basalt	Salina	Pithoi
Western Mediterranean	Sardinia	EAM201	plagioclase - mica	Cannatello	Nuragic
	Sardinia	EAqm101	andesite; quartz-mica groundmass	Lipari	Nuragic
	Sardinia	IM103	quartz - schist - granite	Lipari	Nuragic
	Sardinia?	M202	mica - micaschist	Cannatello	Lamp
	Sardinia	S107 (+grog)	grog; fossiliferous groundmass	Lipari	Nuragic
	Sardinia?	G201	quartz	Cannatello	Nuragic

Tab. 3 - Imported fabrics: main geographical distribution and circulation networks.

Wares/Styles	*Main diffusion area*	*Circulation - imports*	*Imitation - local productions*
Castelluccian	Southern Sicily	Milazzo	
Borg-in-Nadur	Malta	Cannatello	
Cypriot Pithoi	Cyprus	Salina, Cannatello	
Stirrup Jars	Crete	Cannatello	
Milazzese	Aeolian Islands	Taureana (pithoi)	
Capo Graziano	Aeolian Islands	Messina and Vivara (decorated), Milazzo and Tindari (pithoi)	Milazzo and Tindari (decorated)
Mycenaean/Italo-Mycenaean (chemical analyses)	Aegean	Po Valley, Peninsular Italy, Sardinia, Sicily	Po Valley, Peninsular Italy, Sardinia
Nuragic	Sardinia	Lipari, Cannatello (pithoi)	Cannatello
Rodì Tindari	Sicily, Calabria	Aeolian islands (mainly Stromboli)	Aeolian islands (mainly Stromboli)
Apennine	Peninsular Italy	Aeolian Islands	Po Valley, Aeolian Islands
South Italian Protogeometric	Southern Peninsula	Aeolian Islands	Milazzo, Aeolian Islands
Piumata	Sicily		Lipari

Tab. 4 - (Preliminary) synthesis of the main exotic imported and imitated wares and styles according archaeometric analyses.

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