

COLONIAL ENCOUNTERS AND ARTISANAL PRACTICES IN THE WESTERN PHOENICIAN WORLD. CERAMIC EVIDENCE FROM SARDINIA

ANDREA ROPPA*

Abstract: This paper focuses on the analysis of some typical western Phoenician ceramic shapes from an artisanal perspective, by taking into account the manufacturing process of pottery production. Ceramic material has been sampled from a range of sites on the island of Sardinia, namely the Phoenician settlements of Nora and Pani Loriga, both in the southern part of the island, and nuraghe S'Urachi, in west-central Sardinia. The ceramic functional categories of cooking and table ware, and amphorae make up the sample. Through visual inspection and the analysis of X-rays scans, manufacturing techniques and the modelling of vessels in the context of the ceramic operative sequence are investigated. Peculiar patterns of Phoenician ceramic artisanal traditions are outlined, and the outcomes of interaction with local communities in the development of specific colonial ceramic practices in the following Punic period are explored.

Keywords: Pottery Production; Phoenician-Native Interaction; Sardinia; Nuragic; Iron Age.

1. INTRODUCTION

The Phoenician diaspora that spread towards the shores of the central and western Mediterranean and beyond from the 9th century BCE onwards triggered a wide range of dynamics of interaction between local communities and merchants, sailors and settlers from Levantine background. Because of their inherent rooting in one society's traditional norm and values, artisanal practices are one of the fields of human activity which may best help investigating changes in the modes of production, and shedding light on the social and economic organisation of western Mediterranean societies throughout the Iron Age. As one traditional artisanal practice, pottery production provides great potential to explore such issues, if only because ceramic fragments are ubiquitous in the archaeological record of the Mediterranean, as well as the use of pottery in antiquity.

In this paper, I focus on ceramic production on Sardinia, which was one of the main foci of the Phoenician diaspora in the western Mediterranean between the 8th and 6th century BCE. There, the encounter between newcomers and local Nuragic communities varied greatly across the island and resulted in material outcomes yet to be fully explored.¹ By investigating the operative sequence of ceramic production,

* STARS Research Fellow – Dipartimento dei Beni Culturali, Università degli Studi di Padova; andrea.roppa@unipd.it. This paper stems from research funded by the STARS funding programme at the University of Padova: <https://www.unipd.it/en/stars>. It also stems from the *Colonial Traditions* project carried out with P. van Dommelen at the University of Glasgow and Leicester between 2009 and 2013, which was funded by the Leverhulme Trust: http://www.tracingnetworks.ac.uk/content/web/colonial_traditions.jsp. I wish to thank Jacopo Bonetto (Università di Padova), and Massimo Botto (ISPC-CNR) for allowing research on material from their excavations. I also thank Sabrina Cisci, Alessandro Usai (Soprintendenza Archeologia, Belle Arti e Paesaggio per la città metropolitana di Cagliari e le province di Oristano e Sud Sardegna), and Marco Minoja (now Segretariato Regionale MiBACT Lombardia) for granting authorization to export and study the ceramic sample. Remo Forresu (Museo civico archeologico di Santadi), and Alfonso Stiglitz (Museo Civico Archeologico di San Vero Milis) kindly provided access to the material. Ian Whitbread (University of Leicester), and Elisa Alonso Lopez (University of Reading) offered valuable support in the laboratory at the University of Leicester.

1 See papers in van Dommelen – Roppa 2014.



FIG. 1. Map of Sardinia with case studies (by the author).

interest from scholars.³ Fresh perspectives have pointed to the vitality of local communities and subsequently understood the establishment of Phoenician settlements no longer in asymmetrical, colonialist terms, but rather as the outcome of less biased dynamics of interaction.⁴ Within this framework, new projects have been launched to explicitly tackle issues of interaction in the establishment of Phoenician sites and explore later developments of the indigenous settlement throughout the 1st millennium BCE, notably at the two case studies of Pani Loriga and S'Urachi. Not less important is the contribution provided to the new wave of Iron Age studies by the publication, in 2009, of the archaeological evidence and associated material from the urban area of Nora – the third case study of this paper –, where excavations have been ongoing since 1990.

2.1. *Nora*

The site of Nora spreads over a narrow two-headed peninsula that stretches south and east into the Tyrrhenian Sea and it is one of the most extensively excavated urban sites on the island. Excavations carried out over the last 60 years have brought to light a large settlement area continuously inhabited between the 7th

with particular regard to the process of pottery manufacturing, it is my aim to set the island's Phoenician colonial ceramic practices in the context of both motherland's Phoenician and local Nuragic traditions. This will allow me to assess the roles played by interaction and tradition in the development and establishment of a specific Sardinian craftsmanship between the Phoenician and Punic period. The sample which makes up the ceramic evidence studied in this contribution comes from three sites located in the southern half of the island. These are the Phoenician settlements of Nora and Pani Loriga, in the Sulcis region in the south, and the indigenous site of nuraghe S'Urachi with the adjacent site at Su Padrigheddu, in west-central Sardinia (FIG. 1).

2. CONTEXTS AND MATERIALS

Chronologically placed between the heydays of Nuragic civilization in the Bronze Age and the archaeologically richer Punic period, Sardinia's Iron Age has long been neglected by prehistorians and scholars of the Phoenician and Punic world alike. Despite the discovery of the by now famous Monti Prama statues dates back to the late 1970s – as well as their subsequent preliminary publication² –, it was only since the late 2000s that the island's archaeology of the early 1st millennium BCE has substantially attracted an increasing

2 Lilliu 1977. A few years later is the first comprehensive publication of the statuary: Tronchetti 1986.

3 As shown by the proceedings of two conferences held in those years: Bernardini – Perra 2012; van Dommelen – Roppa 2014.

4 Bernardini 2014; Tronchetti 2014; Roppa 2019. But see the pioneering works of Tronchetti 1988 and van Dommelen 1998.

century BCE and the early medieval period. Despite the early chronology provided by sporadic finds such as the famous Nora stele, debatably dated between the 9th and 8th centuries BCE, and by large amounts of pottery from excavations dated between the 8th and 7th centuries BCE, evidence of settlement at Nora during the late 7th and 6th centuries BCE is only temporary, documented by postholes probably related to huts built of perishable material.⁵ Recent research in the Phoenician and subsequently Punic burial area, however, has yielded earlier data, such as an incineration dating to the beginnings of the 7th century BCE.⁶ While it has been suggested that throughout the Phoenician period Nora functioned as a seasonal stop-over and a trade post in the sea route connecting North Africa and Sicily to the Italian peninsula – particularly Etruria and Latium⁷ –, more elaborated and permanent structural remains along with the appearance of the *tophet* date only to the late 6th-early 5th century BCE.⁸

Ceramic fragments included in the present study come from the excavations the University of Padova carried out under the Roman forum, which brought to light a carefully laid out urban quarter of Punic date (late 6th-early 5th century BCE), and associated Phoenician, Punic, and imported pottery, with little amounts of Nuragic ceramics. In detail, 12 ceramic fragments pertaining to the functional category of cooking ware have been selected for analysis.

2.2. *Pani Loriga*

The site of Pani Loriga is situated on a hilltop in the interior of the Sulcis region, at some 12 km from the island's south-western coast, and is visually connected to Sardinia's earliest Phoenician settlement on the island of Sant'Antioco. Excavations carried out by the Archaeological Superintendence in the 1970s and by the ISMA-CNR (now ISPC-CNR) from 2007 onwards have yielded burial and settlement evidence, respectively. While grave goods from the incineration necropolis allow dating the establishment of Pani Loriga to the late 7th-early 6th century BCE, the structural remains pertaining to permanent dwellings that have been found in two different areas on the hilltop date only from one century later. According to data from current research, the settlement did not survive throughout the Punic period and was apparently abandoned around the mid-4th century BCE.⁹

From the grave goods of 19 incinerations mostly dating throughout the 6th century BCE, 24 vessels have been selected for study.¹⁰ These are mostly full shapes which, as usual in Phoenician incinerations on Sardinia, are constituted by the recurrent ceramic triad mushroom-lipped jug – bi-lobed jug – plate.

2.3. *S'Urachi*

The large multi-towered complex of S'Urachi is situated in proximity to the northern shores of the Gulf of Oristano and Sardinia's western coast. Excavations carried out by G. Lilliu in 1948 revealed 7 of the 10 towers included in the massive defensive wall – the *antemurale* – which surrounded the core – the *mastio* – of the monument, not yet investigated.¹¹ Further research was undertaken by the University of Cagliari in the 1980s,¹² and since 2013 a large archaeological project directed by Brown University and San Vero Milis city council has been

5 Bonetto 2009; Bonetto – Falezza – Ghiotto 2009.

6 Bonetto – Botto 2017.

7 Bonetto 2014; Roppa – Madrigali in press.

8 Bonetto 2009, pp. 75-76.

9 Botto *et al.* 2010; Botto 2016; Botto 2017.

10 Material comes from the sector of the necropolis excavated by V. Pispisa in the 1970s, whose publication in a monograph is currently in preparation (Botto forthcoming), including a more detailed study of the manufacturing process of ceramic grave goods (Roppa forthcoming).

11 Lilliu 1950.

12 Tore 1984.

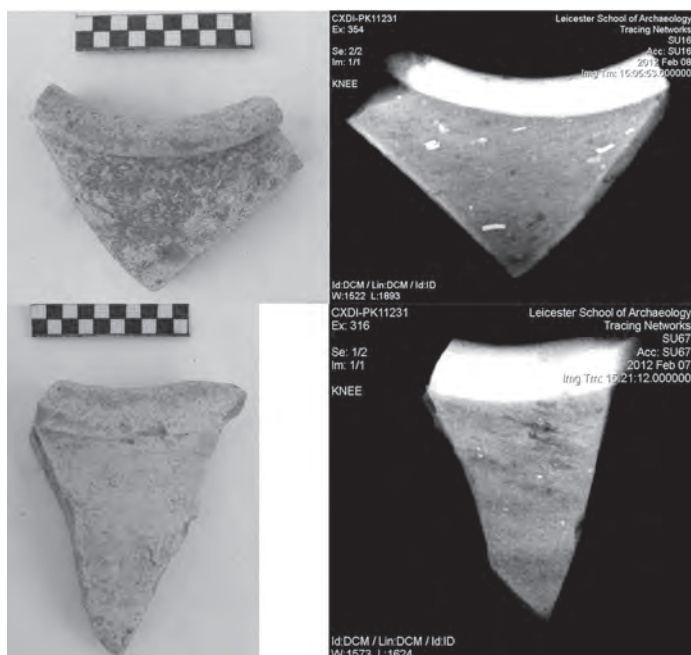


FIG. 2. Photographs and x-ray scans of amphora fragments type Bartoloni B7 – Ramón T-2.1.1.2. Wheel thrown (photos by the author).

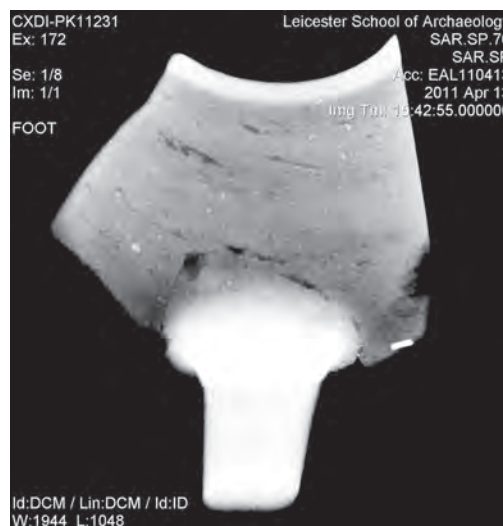


FIG. 3. X-ray scan of amphora fragment type Bartoloni D3 – Ramón T-1.4.2.1. Wheel thrown (scan by the author).

launched to explore cultural encounters and everyday life around the nuraghe throughout the 1st millennium BCE. While new evidence from this recent project has just started shedding light on complex phenomena of interaction between local communities and Phoenician newcomers,¹³ the sample for this study comes from the 1980s excavations on top of the nuraghe, as well as from a fortuitous recovery during agrarian works undertaken in the adjacent field at Su Padriggeddu, which has allowed identifying the area where the Iron Age village was situated.¹⁴

Functionally, 20 ceramic fragments pertaining to cooking ware and transport amphorae have been sampled.

3. SOCIAL PRACTICES AND CERAMIC MANUFACTURING

3.1. Theoretical Background

In broad terms, traditional artisanal knowledge, such as ceramic manufacturing practices, is rooted in one community's social and cultural fabric. Detailed studies and modern ethnographic observations have shown that artisanal traditions are generally conservative.¹⁵ Changes and innovations are usually associated with broader phenomena affecting economic, political, and social spheres, large scale migrations, or more specific episodes of human mobility.¹⁶

13 Stiglitz *et al.* 2015; van Dommelen *et al.* 2018.

14 Stiglitz 2007; Roppa 2012; Roppa – Hayne – Madrigali 2013.

15 For example, Gosselain 2015; Loney 2007.

16 Abell 2014; Choleva 2012.

Within such a framework, thus, the study of artisanal practices may help defining patterns of human mobility and, at the same time, investigating both synchronously and diachronically the productive and social fabric of ancient societies. In the specific context of Iron Age Sardinia, it is assumed that Phoenician colonial communities were made up by human groups whose (artisanal) practices were rooted in the Levantine traditions, and constituted one “community of practice” sharing a similar cultural background.¹⁷ Based on such assumptions, an artisanal approach may shed light on the social practices of human groups from Phoenician background that settled on the island’s shores from the 8th century BCE onwards, while providing great potential to define long term interaction with local communities until the subsequent Punic period.

From a technical point of view, ceramic manufacturing in the ancient world includes an elaborated sequence of activities and techniques, ranging from the supply of raw material, and its preparation, to pots modelling and firing. Generally, both at the theoretical and methodological level, the operative sequence of ceramic production may be explored through the conceptual tool provided by the *chaîne opératoire*, which is understood as a sequence of activities making up the productive process that are investigated within their specific social contexts of production.¹⁸ Practically, however, the study of the ceramic *chaîne opératoire* is particularly problematic due to a number of factors. For example, as well illustrated by specific studies¹⁹ and suggested by modern ethnographic comparanda,²⁰ manufacturing techniques usually show a great variability. Also, a combination of techniques was sometimes employed to model a vessel. In the specific case of 1st millennium BCE Sardinia, in particular, direct archaeological evidence of ceramic production is lacking, as ceramic productive contexts have not yet been identified, with the notable exception of recent findings from nuraghe Sirai.²¹ As a consequence, the reconstruction of ceramic production is based on its final outcome – *i.e.* pottery –, which is only rarely wholly preserved.

3.2. Methodology

In this paper, it is my intention to investigate a specific stage of ceramic production, that is pots modelling, through the analysis of ceramic fragments. Drawing from evidence from Phoenicia’s motherland, it is my aim to outline specific manufacturing techniques pertaining to the Phoenician ceramic tradition.

Ceramic manufacturing – especially handmade – techniques may show a great deal of variation, which often do not leave evidence on the ceramic surface. There exist, however, some indicators that allow reconstructing primary and secondary modelling techniques, detectable through both visual observations and more sophisticated analysis. For example, sharp ridges at short distance on the internal wall of a ceramic

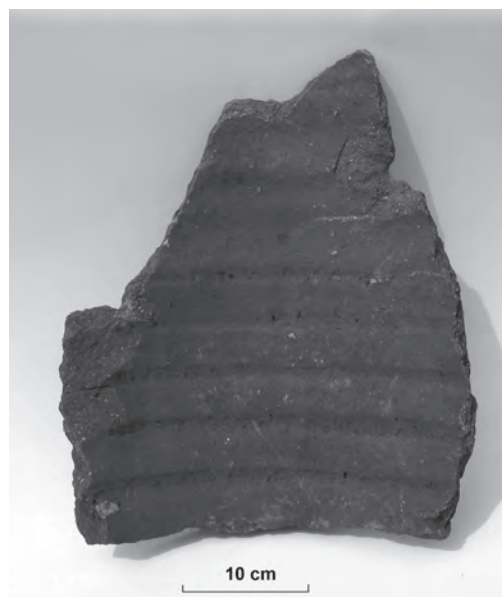


FIG. 4. Photograph of the internal wall of a Punic amphora fragment. Coil made (photo by the author).

17 Wenger 1998.

18 Leroi-Gourhan 1964.

19 Cuomo di Caprio 2007.

20 Gosselain 2009.

21 Perra 2014.

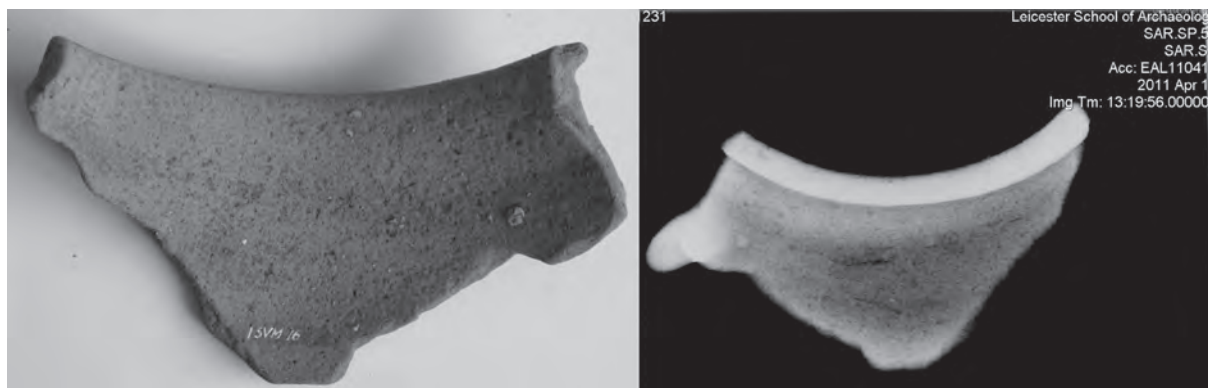


FIG. 5. Photograph (left) showing large grains in the ceramic fabric, and x-ray scan (right) of a cooking pot fragment type Campanella P2B. Coil made (photo and scan by the author).

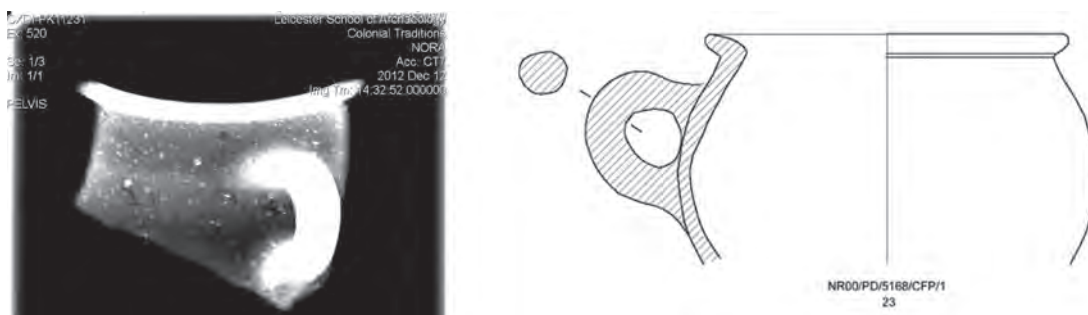


FIG. 6. X-ray scan (left) and drawing (right) of a cooking pot fragment type Campanella P2A. Wheel thrown (scan by the author; drawing from Campanella 2009, p. 305, n. 23).

fragment are generally associated with wheel throwing,²² while deeper and less frequent grooves are usually interpreted as the outcome of coiling as primary forming technique and wheel shaping as secondary modelling technique. More complex is the detection of handmade modelling techniques, of those only secondary techniques can be identified by visual inspection, such as traces of scraping to smooth and remove excessive clay, and the separated modelling of rims and bodies.²³

More information may be provided by the interpretation of x-ray scans. The archaeological use of this particular device has now become consolidated, especially for the study of manufacturing techniques of ancient ceramics.²⁴ X-ray scans allow analysing the internal components of ceramic fabrics. The specific patterns of orientation of grains and voids are associated with peculiar primary modelling techniques. For instance, elongated and parallel voids are usually related to coiling as primary forming technique. That often escapes identification by visual inspection due to wheel shaping used to smooth vessel surfaces. A pattern of oblique orientation of voids and grains, on the other hand, is associated with wheel throwing, as the outcome of the kinetic energy used to model the pot.²⁵

By drawing on insights provided by analysis via visual inspection, and interpretation of x-ray scans, I turn now to the material evidence discussed in this paper.

22 Courty – Roux 1995.

23 For example, Docter *et al.* 1997.

24 Carr – Riddick 1990; Berg – Ambers 2017.

25 Berg 2008, fig. 1.

4. RESULTS

4.1. *Amphorae*

The amphora sample comes from the adjacent sites of S'Urachi and Su Padriheddu, where earlier imports in substantial amounts fall into the typology Bartoloni B7 – Ramón T-2.1.1.2., dated between the end of 7th and the beginning of the 6th century BCE.²⁶ While fabric studies have shown that a good number of fragments pertaining to this typology were likely produced either in the nearby Phoenician settlement of Tharros²⁷ or in the Carthage area,²⁸ x-ray scans have shown in most cases similar patterns of oblique orientation of voids and grains, which suggest wheel throwing as primary forming technique (FIG. 2). A similar manufacturing process may be inferred from the interpretation of the x-ray scan of a fragment pertaining to the typology Bartoloni D3 – Ramón T-1.4.2.1., which is slightly later and is dated to the 6th century BCE (FIG. 3).

Imported Phoenician amphorae from S'Urachi are typical transport amphorae, which were wheel thrown so to make a relatively thin-walled and light, but robust container to be filled with commodities. Substantially different is the functional range of amphorae during the subsequent Punic period, when small- to medium-sized rural settlement across the island – and more generally the western Mediterranean – dramatically increased from the late 5th c. BCE.²⁹ In this period, not only were amphorae used for transport, but also for storage and a range of productive activities including wine making, as for instance suggested by evidence from the Iberian site of l'Alt de Benimaquía.³⁰ Based on the thickness of walls, which made the container much heavier and hardly transportable, a primary use of amphora for (agrarian) production and storage may be argued. This is the case of the amphora sherd in FIG. 4, a large body fragment with wall as thick as 2 cm pertaining to a torpedo-shaped Punic amphora.³¹ As evidenced by patterns visible on its internal wall, the primary forming technique employed to model thick-walled and heavy containers was coiling (FIG. 4).

4.2. *Cooking Ware*

Fragments of cooking ware have been sampled from material from the excavations at Nora and S'Urachi. Based on visual inspection and the interpretation of x-ray scans, it appears that wheel

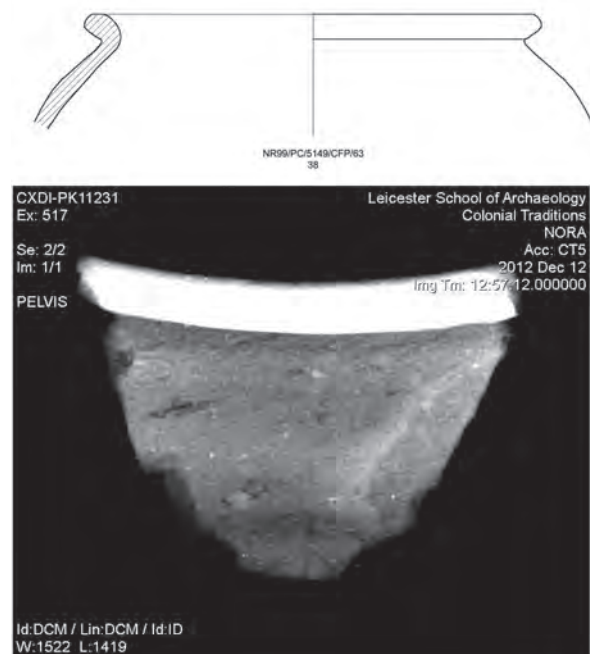


FIG. 7. Drawing (above) and x-ray scan (below) of a cooking pot fragment type Campanella P2B. Wheel thrown (drawing from Campanella 2009, p. 307, n. 38; scan by the author).

²⁶ Bartoloni 1988; Ramón Torres 1995.

²⁷ Roppa 2012; Roppa – Madrigali in press. Fabric definition has been possible thanks to the work of P. van Dommelen: van Dommelen – Traplicher 2011.

²⁸ Bechtold 2012.

²⁹ van Dommelen – Finocchi 2008; Roppa – van Dommelen 2012.

³⁰ Gómez Bellard *et al.* 1993.

³¹ Whose likely typological identification, which was not possible due to the lack of the rim, spans between Bartoloni types D7 – D10.

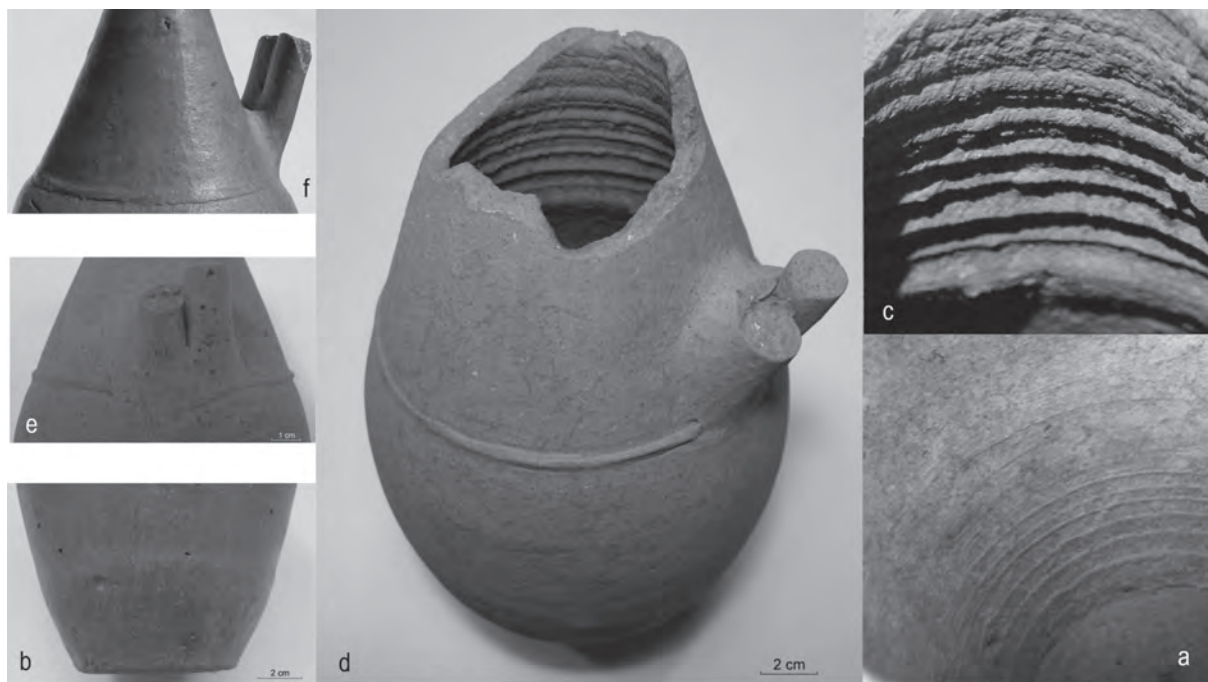


FIG. 8. Photographs showing manufacturing details of bi-lobed jugs (photos by the author).

throwing and coiling were the main manufacturing techniques in use during the Phoenician period. The x-ray scan of a large fragment of a rim and wall provided with “fake spout” from S’Urachi and pertaining to a cooking pot dating between the 7th and mid-6th century BCE,³² shows an orientation of grains and voids consistent with coiling as the primary forming technique. Also, the use of this forming technique is suggested by the macroscopic features of the ceramic fabric, which is coarse with large grains and does not appear suitable for wheel throwing. Wheel shaping appears to have been used as secondary forming technique to smooth the walls (FIG. 5). Differently, wheel throwing was used for the manufacture of two roughly contemporary Phoenician cooking pots, whose fragments come from the excavations under the Roman forum at Nora. X-ray scans of these fragments, respectively falling into Campanella’s types P2A (FIG. 6) – dated to the mid-7th-early 6th century BCE³³ –, and P2B (FIG. 7) – dated to the late 7th-mid-6th century BCE³⁴ –, show the distinctive oblique orientation pattern associated with wheel throwing. Also, the ceramic fabric of the latter presents strong macroscopic similarities with the distinctive fabric associated with production in the Carthage area.³⁵

4.3. *Bi-lobed and Mushroom-lipped Jugs*

The production of mushroom-lipped and bi-lobed jugs from the necropolis of Pani Loriga, dating between the late 7th and 6th century BCE, was a complex process. A productive sequence which involved a combination of different manufacturing techniques used for the specific parts making up the vessels has been identified in detail.

32 Campanella 2009, p. 305, type P2B.

33 Campanella 2009, p. 305, n. 23.

34 Campanella 2009, p. 307, n. 38.

35 Bechtold 2012.

4.3.1. Bi-lobed Jugs

The lower part of the body, up to the shoulder, is composed of at least two parts assembled together. At the bottom, the internal wall shows thin and sharp ridges, which are consistent with wheel throwing (FIG. 8a). The central part was made separately and joined to the base, as shown both by the shallow groove on the external wall (FIG. 8b) and the smooth surface on the interior, which is consistent with wheel shaping as secondary modelling technique (FIG. 8a). A different technique was used for the manufacture of the neck (FIG. 8c, d), as evident from the internal surface. The neck was likely modelled upside down by joining small coils, and then attached to the body. The thin ridges and wrinkles visible on the interior may be related to the final stages of manufacturing, when the vessel without handle was shaped on the wheel and pressure was put on the exterior to thin the neck.³⁶ Then, to the body was attached the handle, whose lower part was inserted

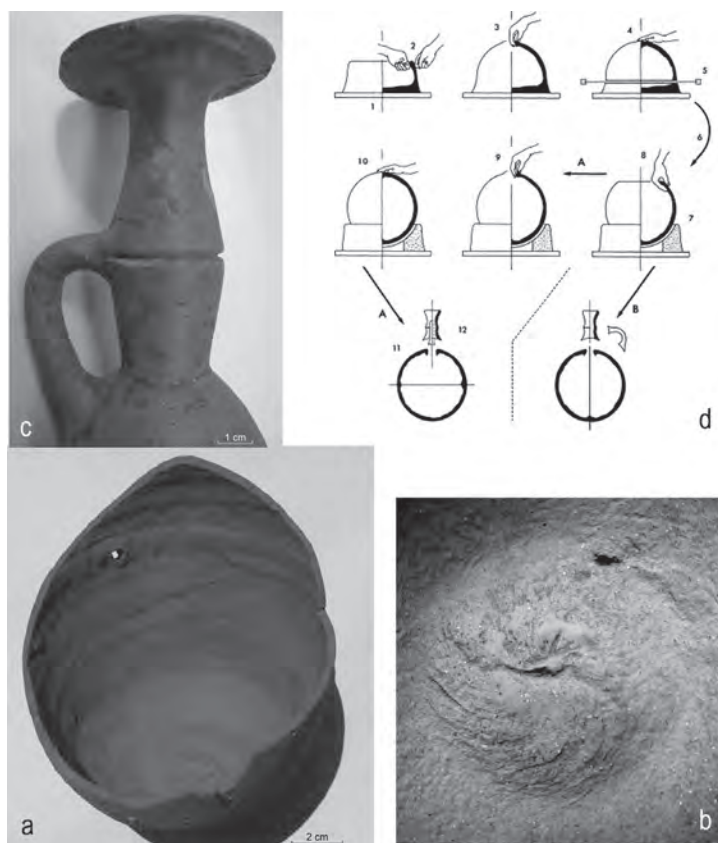


FIG. 9. Photographs showing manufacturing details of mushroom-lipped jugs (a-c: by the author; d: from Anderson 1990, fig. 8).

at the junction between body and neck, which was separated by a short edge (FIG. 8d, e), and the upper part was attached directly on the rim. Finishing often involved red-slipping (FIG. 8f).

4.3.2. Mushroom-lipped Jugs

The manufacture of mushroom-lipped jugs varied from that of bi-lobed jugs, although both shared a similar makeup consisting of different parts assembled together at different stages of the ceramic productive sequence. In particular, some similarities have been noticed with the manufacturing process of pilgrim flasks outlined by W. P. Anderson in his studies on material from Sarepta, in motherland's Phoenicia.³⁷ Base and body were probably wheel thrown, upside down. Shallow grooves and parallel lines are visible on the internal wall (FIG. 9a), while the bottom presents the characteristic 'spiral' pattern associated with wheel throwing, due to the removal of clay (FIG. 9b). The neck could have been made up of two distinct conical parts made separately, joined together, and attached to the shoulder. Alternatively, the incised line visible on the neck at the junction with the handle could have traced before firing (FIG. 9c). Then the handle was attached to the vessel (FIG. 9c, d). Finishing often involved red-slipping.

36 Courty – Roux 1995, p. 18

37 Anderson 1990.

5. CERAMIC MANUFACTURING TECHNIQUES ON SARDINIA IN THE PHOENICIAN AND PUNIC PERIOD

The study of some aspects of the ceramic productive sequence on the ceramic evidence discussed above has shown the use of the two primary modelling techniques of wheel throwing and coiling for the production of amphorae and cooking ware. Much more complex was the makeup of bi-lobed and mushroom-lipped jugs, which involved an elaborate combination of techniques. While the roots of these practices can be traced back to the artisanal traditions of motherland's Phoenicia, as demonstrated by comparison with evidence from Sarepta, which were also commonly shared in the western Phoenician world,³⁸ subsequent developments in the Punic period point to the formation of specifically Sardinian ceramic practices. To be sure, the interaction between local communities and Phoenician newcomers that had started from the early encounter in the 8th century BCE affected also the artisanal sphere of ceramic production already from 7th century BCE, as documented by case studies at S'Urachi,³⁹ Sant'Imbenia⁴⁰ and nuraghe Sirai.⁴¹

The peculiar trajectory of Sardinia in the Phoenician western world it is also shown by the development of distinctive "ceramic regions", through the gradual appearance from the mid-7th century BCE of a specific ceramic typological repertoire associated with production on the island.⁴² That pattern is contemporary with the establishment of most Phoenician permanent settlements from the late 7th century. The development of a distinctively Sardinian ceramic tradition included peculiar technological and morphological patterns, some of which were the outcome of long



FIG. 10. Photographs showing technical detail of the junction handle – body of a Iron Age Nuragic vessel (above) and a Punic amphora (below) (photos by the author).

term knowledge transfer with local communities. For instance, one specific feature such as the technical detail of the handle-body junction that has been noted on some amphorae from later periods. As shown above, in the Phoenician tradition amphora handles were mostly attached directly on the external wall. In the course of the Punic period, amphorae – particularly the thick-walled, heavy amphorae that were purposely made for storage and agrarian production – present in several instances a peculiar technique at the junction between body and handle. The latter was in fact attached to the body through a hole, and pulled through the amphora wall. This particular procedure, which has been noticed on amphora handles from the Punic farm of Truncu 'e Molas,⁴³ finds a match in Sardinia's Nuragic ceramic tradition, in which several instances show that this peculiar technique was used to join the handle to the wall, as illustrated by a handle fragment from Su Padrigheddu (FIG. 10). While it may well be that this technical detail was used to strengthen the handle to

38 Mielke 2015.

39 Roppa 2014a.

40 De Rosa 2017.

41 Gradoli 2014; Perra 2019, pp. 167-190.

42 Botto 2009, pp. 342-343.

43 Roppa – van Dommelen in press.

lift amphorae – especially thick-walled ones –, it is clearly an outcome of knowledge transfer between different ceramic traditions.

6. CONCLUSIONS

On Sardinia, Phoenician ceramic practices that were rooted in the Levantine artisanal traditions and may be clearly identified throughout the early colonial phase, gradually acquired substantial local traits in the course of the 6th century BCE and the subsequent Punic period. While some specific features, such as the appearance of thick-walled, heavy amphorae whose primary function was not transport, may be related to the increase of rural settlement and production from the late 5th century BCE, some technical details shown by these amphorae point to phenomena of artisanal exchange. Just like other social practices, ceramic practices are part and parcel of the complex process of cultural interaction between local peoples and newcomers which renegotiated the cultural identities of Sardinia's communities between the Iron Age and the Punic period.⁴⁴

REFERENCES

- Abell 2014 = N. Abell, *Migration, Mobility and Craftspeople in the Aegean Bronze Age: A Case Study from Ayia Irini on the Island of Kea*, in «WorldA» 46, 2014, pp. 551-568.
- Anderson 1990 = W.P. Anderson, *The Beginnings of Phoenician Pottery: Vessel Shape, Style, and Ceramic Technology in the Early Phases of the Phoenician Iron Age*, in «BASOR» 279, 1990, pp. 35-54.
- Bartoloni 1988 = P. Bartoloni, *Le anfore fenicie e puniche di Sardegna*, Roma 1988.
- Bechtold 2012 = B. Bechtold, *The Pottery Production of Punic Carthage*, in «FACEM» (version 06/06/2011) 2012, http://facem.at/img/pdf/Pottery_Production_Carthage_2012_06_06.pdf.
- Berg 2008 = I. Berg, *Looking through Pots: Recent Advances in Ceramics X-Radiography*, in «JASc» 35, 2012, pp. 1177-1188.
- Berg – Ambers 2017 = I. Berg – J. Ambers, *X-Radiography of Archaeological Ceramics*, in A. Hunt (ed.), *Handbook of Archaeological Ceramic Analysis*, Oxford 2017, pp. 544-564.
- Bernardini 2014 = P. Bernardini, *La rete fenicia: riflessioni sulle origini della presenza fenicia in Sardegna*, in van Dommelen – Roppa 2014, pp. 55-62.
- Bernardini – Perra 2012 = P. Bernardini – M. Perra (edd.), *I Nuragici, i Fenici e gli Altri. Sardegna e Mediterraneo tra Bronzo Finale e Prima Età del Ferro. Atti del I Congresso Internazionale in occasione del venticinquennale del Museo "Genna Maria" di Villanovaforru (14-15 dicembre 2007)*, Sassari 2012.
- Bonetto 2009 = J. Bonetto, *L'insediamento di età fenicia, punica e romana repubblicana nell'area del foro*, in J. Bonetto – G. Falezza – A.R. Ghiotto, *Nora. Il foro romano. Storia di un'area urbana dall'età fenicia alla tarda antichità 1997-2006. Vol. I – Lo scavo*, Padova 2009, pp. 39-243.
- Bonetto 2014 = J. Bonetto, *L'insediamento fenicio di Nora e le comunità nuragiche circostanti: contatti e distanze*, in van Dommelen – Roppa 2014, pp. 173-182.
- Bonetto – Botto 2017 = J. Bonetto – M. Botto, *Tra i primi a Nora. Una sepoltura a cremazione nella necropoli sull'istmo*, in «QuadACagl» 28, 2017, pp. 149-192.
- Bonetto – Falezza – Ghiotto 2009 = J. Bonetto – G. Falezza – A. R. Ghiotto, *Nora. Il foro romano. Storia di un'area urbana dall'età fenicia alla tarda antichità 1997-2006. Vol. II – I materiali*, Padova 2009.
- Botto 2009 = M. Botto, *La ceramica. L'Occidente*, in S.F. Bondi – M. Botto – G. Garbati – I. Oggiano, *Fenici e Cartaginesi. Una civiltà mediterranea*, Roma 2009, pp. 335-345.
- Botto 2016 = M. Botto (ed.), *Il complesso archeologico di Pani Loriga*, Sassari 2016 («Sardegna archeologica. Guide e itinerari», 61).

⁴⁴ Roppa 2014b.

- Botto 2017 = M. Botto, *The Punic Settlement of Pani Loriga in the Light of Recent Discoveries*, in «The Journal of Fasti Online» 393, 2017, pp. 1-19 (<http://www.fastionline.org/docs/FOLDER-it-2017-393.pdf>).
- Botto forthcoming = M. Botto, *Pani Loriga I – La necropoli fenicia*, forthcoming.
- Botto *et al.* 2010 = M. Botto – F. Candelato – I. Oggiano – T. Pedrazzi, *Le indagini 2007-2008 all'abitato fenicio-punico di Pani Loriga*, in «The Journal of Fasti Online» 175, 2010, pp. 1-18 (<http://www.fastionline.org/docs/FOLDER-it-2010-175.pdf>).
- Campanella 2009 = L. Campanella, *La ceramica da cucina fenicia e punica*, in Bonetto – Falezza – Ghiotto 2009, pp. 295-358.
- Carr – Riddick 1990 = C. Carr – E.B.J. Riddick, *Advances in Ceramic Radiography and Analysis: Laboratory Methods*, in «JASc» 17, 1990, pp. 35-66.
- Choleva 2012 = M. Choleva, *Pottery at Lerna: Wheel-Thrown or Wheel-Fashioned?*, in «Hesperia» 81, 2012, pp. 343-381.
- Courty – Roux 1995 = M. A. Courty – V. Roux, *Identification of Wheel Throwing on the Basis of Ceramic Surface Features and Microfabrics*, in «JASc» 22, 1995, pp. 17-50.
- Cuomo di Caprio 2007 = N. Cuomo di Caprio, *La ceramica in archeologia 2. Antiche tecniche di lavorazione e moderni metodi di indagine*, Roma 2007.
- De Rosa 2017 = B. De Rosa, *Percorsi ceramici. Analisi archeometriche e tecnologiche sulle ceramiche di Sant'Imbenia*, Roma 2017.
- Docter *et al.* 1997 = R.F. Docter – M.B. Annis – L. Jacobs – G.H. Blessing, *Early Central Italian Transport Amphorae from Carthage: Preliminary Results*, in «RStFen» 25, 1997, pp. 15-58.
- Gómez Bellard *et al.* 1993 = C. Gómez Bellard – E. Díez Cusí – P. Guérin – G. Pérez Jordá, *El vino en los inicios de la cultura ibérica. Nuevas excavaciones en l'Alt de Benimaquía, Denia*, in «RAMadrid» 142, 1993, pp. 16-27.
- Gosselain 2009 = O.P. Gosselain, *In Pots We Trust. The Processing of Clay and Symbols in Sub-Saharan Africa*, in «Journal of Material Culture» 4, 2009, pp. 205-230.
- Gosselain 2015 = O.P. Gosselain, *Roads, Markets, Migrants. The Historical Trajectory of a Male Hausa Pottery Tradition in Southern Niger*, in W. Gaus – G. Klebinder-Gaus – C. von Rüden (edd.), *The Transmission of Technical Knowledge in the Production of Ancient Mediterranean Pottery. Proceedings of the International Conference held at the Austrian Archaeological Institute at Athens (23rd-25th November 2012)*, Vienna 2015 («Sonderschriften Band», 54), pp. 277-296.
- Gradoli 2014 = M.G. Gradoli, *Le ceramiche di fine VII – prima metà VI della fortezza del nuraghe Sirai di Carbonia. Caratterizzazione petrografica e studio di provenienza delle materie prime*, in van Dommelen – Roppa 2014, pp. 143-152.
- Leroi-Gourhan 1964 = A. Leroi-Gourhan, *Le geste et la parole, I. Technique et langage*, Paris 1964.
- Lilliu 1950 = G. Lilliu, *Scoperte e scavi di antichità fattisi in Sardegna durante gli anni 1948 e 1949*, in «StSard» 9, 1950, pp. 399-406.
- Lilliu 1977 = G. Lilliu, *Dal "betilo" aniconico alla statuaria nuragica*, in «StSard» 24, 1977 (1975-1977), pp. 73-144.
- Loney 2007 = H.L. Loney, *Prehistoric Italian Pottery Production: Motor Memory, Motor Development and Technological Transfer*, in «JMedA» 20, 2007, pp. 182-207.
- Mielke 2015 = D.P. Mielke, *Between Transfer and Interaction: Phoenician Pottery Technology on the Iberian Peninsula*, in W. Gaus – G. Klebinder-Gaus – C. von Rüden (edd.), *The Transmission of Technical Knowledge in the Production of Ancient Mediterranean Pottery. Proceedings of the International Conference held at the Austrian Archaeological Institute at Athens (23rd-25th November 2012)*, Vienna 2015 («Sonderschriften Band», 54), pp. 257-276.
- Perra 2014 = C. Perra, *Nuovi elementi per la definizione del sistema insediativo sulcitano dalla fortezza di Nuraghe Sirai*, in van Dommelen – Roppa 2014, pp. 121-133.
- Perra 2019 = C. Perra, *La fortezza sardo fenicia di nuraghe Sirai: il Ferro II di Sardegna*, Roma 2019 («Collezione di studi fenici», 49).
- Ramón Torres 1995 = J. Ramón Torres, *Las anforas fenicio-punicas del Mediterraneo central y occidental*, Barcelona 1995.
- Roppa 2012 = A. Roppa, *L'età del Ferro nella Sardegna centro-occidentale. Il villaggio di Su Padrigheddu, San Vero Milis*, in «The Journal of Fasti Online» 252, 2012, pp. 1-25 (<http://www.fastionline.org/docs/FOLDER-it-2012-252.pdf>).
- Roppa 2014a = A. Roppa, *Manifattura ceramica, interazioni e condivisioni artigianali nell'età del Ferro sarda: i materiali da S'Uraki-Su Padrigheddu (San Vero Milis)*, in van Dommelen – Roppa 2014, pp. 191-200.

- Roppa 2014b = A. Roppa, *Identifying Punic Sardinia: Local Communities and Cultural Identities*, in J.C. Quinn – N. Vella (edd.), *The Punic Mediterranean. Identities and Identification from Phoenician Settlement to Roman Rule*, Cambridge 2014 («British School at Rome Studies»), pp. 257-281.
- Roppa 2019 = A. Roppa, *Sardinia*, in C. López-Ruiz – B. Doak (edd.), *The Oxford Handbook of the Phoenician and Punic Mediterranean*, Oxford 2019, pp. 522-536.
- Roppa forthcoming = A. Roppa, *Osservazioni sul processo di manifattura della ceramica dei corredi*, in Botto forthcoming.
- Roppa – Hayne – Madrigali 2013 = A. Roppa – J. Hayne – E. Madrigali, *Interazioni artigianali e sviluppi della manifattura ceramica locale a S'Uraki (Sardegna) fra la prima età del Ferro e il periodo punico*, in «Sagvntvm» 45, 2013, pp. 115-137.
- Roppa – Madrigali in press = A. Roppa – E. Madrigali, *Colonial Production and Urbanisation in Iron Age to Early Punic Sardinia (8th-5th c. BC)*, in M. Gleba – B. Marín-Aguilera – B. Dimova (edd.), *Making Cities. Economies of Production and Urbanisation in Mediterranean Europe 1000-500 BCE*, Cambridge in press.
- Roppa – van Dommelen 2012 = A. Roppa – P. van Dommelen, *Rural Settlement and Land Use in Punic and Roman Sardinia*, in «JRA» 25, 2012, pp. 49-68.
- Roppa – van Dommelen in press = A. Roppa – P. van Dommelen, *Las anforas*, in P. van Dommelen – C. Gómez Bellard (edd.), *Truncu 'e Molas: un asentamiento rural en la Cerdeña punica*, València («Sagvntvm Extra»), in press.
- Stiglitz 2007 = A. Stiglitz, *Fenici e Nuragici nell'entroterra tharrensse*, in «Sardinia, Corsica et Baleares antiquae» 5, 2007, 87-98.
- Stiglitz et al. 2015 = A. Stiglitz – E. Dies Cusí – D. Ramis – A. Roppa – P. van Dommelen, *Intorno al nuraghe: notizie preliminari sul progetto S'Urachi (San Vero Milis, OR)*, in «QuadACagl» 26, 2015, pp. 191-218.
- Tore 1984 = G. Tore, *Per una rilettura del complesso nuragico di S'Uraki, loc. Su Pardu S. Vero Milis – Oristano (Sardegna)*, in W.H. Waldren – R. Chapman – J. Leithwaite – R.-C. Kennard (edd.), *The Deya Conference of Prehistory. Early Settlement in the Western Mediterranean Islands and their Peripheral Areas*, Oxford 1984 («BAR International Series», 229) pp. 703-723.
- Tronchetti 1986 = C. Tronchetti, *Nuragic Statuary from Monte Prama*, in M. Balmuth (ed.), *Studies in Sardinian Archaeology II. Sardinia in the Mediterranean*, Ann Arbor 1986, pp. 47-59.
- Tronchetti 1988 = C. Tronchetti, *I Sardi. Traffici, relazioni, ideologie nella Sardegna arcaica*, Milano 1988.
- Tronchetti 2014 = C. Tronchetti, *Cultural Interactions in Iron Age Sardinia*, in A.B. Knapp – P. van Dommelen (edd.), *The Cambridge Prehistory of the Bronze and Iron Age Mediterranean*, New York 2014, pp. 266-284.
- van Dommelen 1998 = P. van Dommelen, *On Colonial Grounds. A Comparative Study of Colonialism and Rural Settlement in First Millennium BC West Central Sardinia*, Leiden 1998 («Archaeology Studies Leiden University», 2).
- van Dommelen et al. 2018 = P. van Dommelen – E. Dies Cusí – L. Gosner – J. Hayne – G. Pérez Jordá – D. Ramis – A. Roppa – A. Stiglitz, *Un millennio di storie: nuove notizie preliminari sul progetto S'Urachi (San Vero Milis, Or) 2016-18*, in «QuadACagl» 29, 2018, pp. 141-165.
- van Dommelen – Finocchi 2008 = P. van Dommelen – S. Finocchi, *Sardinia: Divergent Landscapes*, in P. van Dommelen – C. Gómez Bellard (edd.), *Rural Landscapes of the Punic World*, London 2008 («Monographs in Mediterranean Archaeology», 11), pp. 159-201.
- van Dommelen – Roppa 2014 = P. van Dommelen – A. Roppa (edd.), *Materiali e contesti nell'età del Ferro sarda*, Roma 2014 («RStFen», 41).
- van Dommelen – Trapichler 2011 = P. van Dommelen – M. Trapichler, *Fabrics of Western Sardinia*, in «FACEM» (version 06/06/2011), 2011, http://facem.at/img/pdf/Fabrics_of_Western_Sardinia_06_06_2011.pdf.
- Wenger 1998 = E. Wenger, *Communities of Practice: Learning, Meaning and Identity*, Cambridge 1998.