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Landscape archaeology is a rapidly expanding field of research that is covered by scholars from an increasing number of disciplines, such as archaeology, earth sciences, historical geography, ecology and anthropology. In order to stimulate international debate and exchange of research experiences and theoretical ideas between these disciplines, in January 2010 it was decided to start a series conferences at two years intervals.

The 3rd International Landscape Archaeology Conference took place 17th – 20th of September 2014 at the Royal Netherlands Institute in Rome (KNIR) and the Swedish Institute was organized by CLUE+, the research institute for Culture, Cognition, History and Heritage of the VU University Amsterdam. These proceedings are published under the auspices of CLUE+.

Multi-, inter- and transdisciplinary research in Landscape Archaeology

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Ploughsoil Assemblages and Beyond: Some Interpretative Challenges

Simonetta Menchelli

Università di Pisa, Dipartimento Civiltà e Forme del Sapere

email: simonetta.menchelli@unipi.it

Abstract

The present remarks derive from on-going topographic-archaeological projects focusing on North coastal Etruria and South Picenum. These studies apply a global archaeology approach that includes diachronic and interdisciplinary research. In our projects particular attention is being paid to palaeogeographic aspects. Processual methodology standards are applied to our research; nevertheless, geomorphologic, spatial and quantitative evidence is integrated with qualitative and symbolic data to reconstruct all the anthropic activities. Some remarks will be made about the informative potential of ploughsoil findings, landscape complexity, strategies in collecting and studying pottery and on the importance of considering the absence of particular categories of materials. Following this global approach and its consequential theoretical framework and rigorous methodology, archaeologists will be able to take up the interpretative challenge of defining landscapes in terms of their different components: sites, off-sites and their historical-functional classification. Obviously, the objective and subjective standards used for these classifications have to be explained clearly, so that the research results of a district can be used for comparisons and large-scale analyses.

Keywords: Etruria, Picenum, Survey, Off-Sites, Pottery

This paper derive from ongoing topographic-archaeological projects focusing on North coastal Etruria (*ager Pisanus* and *Volaterranus*; maritime landscapes from *Vada Volaterrana* to *Luna*) and

South *Picenum* (*ager Firmanus* and *Asculanus*: the upper valleys of the Tenna and Aso rivers) (see the most recent works Menchelli, 2014; Pasquinucci & Menchelli, 2012b; in press) (figs. 1-2).

These studies apply a global archaeology approach (*archeologia globale*: Mannoni, 1985; *total archaeology*: Darvill, 2001) consisting of diachronic and interdisciplinary research including geomorphology, palaeogeography, remote sensing, archaeological fieldwork, geophysical surveys, ancient and medieval archaeological, epigraphic and literary sources, toponymy and historical cartography (on the numerous sources indispensable for correct topographic-archaeological research see Quilici & Quilici Gigli, 2004: 23-61). The projects, which are being carried out in very close collaboration with the relevant Soprintendenze per i Beni Archeologici and the different levels of local government (municipal, provincial, and regional), aim to provide useful data for heritage management and town/territorial planning (e.g. see Francovich, Pellicanò & Pasquinucci, 2001).

Particular attention is being paid to palaeogeographic aspects. Landscape changes in North coastal Tuscany and the related submarine areas are being studied in collaboration with researchers from the Department of Earth Sciences, University of Pisa (Pasquinucci & Menchelli, 2012a). Geoarchaeological surveys and drilling campaigns are in progress in the *Vada Volaterrana* area to reconstruct the ancient lagoon landscapes and their transformations. In the same area, a geophysical survey programme is being conducted to define the extent of the *Vada Volaterrana* town which was the harbour of *Volaterrae* from the Etruscan to the Late Roman times (Pasquinucci et al, 2012).



Fig. 1. Comune di San Giuliano (Pisa): survey in progress (photo: author).

In these projects data is organised and managed by GIS platforms (e.g. see Iacopini et al, 2012). During the survey, the site and offsite locations are georeferenced and recorded through a mobile system which collects and sends geo-tagged photos and the site/offsite descriptive data to a Web-GIS platform. This procedure permits an immediate recording of the raw data, providing more time for further research.

As is well known, interdisciplinary research and updated technologies enable the topographer to direct, develop and test his/her fieldwork (see e.g. the important activities of the *Consiglio Nazionale delle Ricerche, Istituto per i Beni Archeologici e Monumentali*). In general, the ever-increasing

development of digital technologies and archaeological theory heighten the debate. Fuzzy theory, Statistical Modelling, Neural Network Analysis, Algorithms, Computer Vision Applications are tools and methods usually discussed and applied to archaeological research (e.g. see the papers presented in *The Computer Applications and Quantitative Methods in Archaeology Conferences, CAA*, and those published in the review *Archeologia e Calcolatori*). Obviously, the archaeologists' biggest challenge is anchoring these general applications and models in the realities of human complexity. In any case, the introduction of the new digital technologies to archaeological practices will not provide optimum results unless underpinned by a sound theoretical framework.

In our projects, processual methodology standards are applied in fieldwork and artefact collection and documentation, as well as data management. Nevertheless, we think that geomorphologic, spatial



Fig. 2. Comune di Amandola (Fermo): survey in progress (photo: author).

and quantitative evidence should be integrated with qualitative and symbolic data in order to reconstruct all the anthropic activities throughout the centuries (see Pasquinucci & Menchelli, 2012b). We try to follow a third way, adopting an eclectic and flexible approach, enabling us to avoid the excesses of both processual positivism and of post-processual subjectivism (Bintliff & Pearce, 2011). Therefore we attempt to outline both landscapes and mindscapes (e.g. see Ashmore & Knapp, 1999 for conceptualised and ideational landscapes).

For example in South Picenum (*Pisa South Picenum Survey Project III*), besides spatial analyses aiming at reconstructing the settlements' dynamics in the centuriated landscapes, we also try to

reconstruct the stratification of sacred landscapes in the Monti Sibillini area (Montemonaco-Montefortino-Montegalgo district). These include the ancestral veneration of the Sybil Roman healthy water cults in caves (the rite of the *sanatio*) up to the apparition of the Madonna dell'Ambro (Montefortino) to a mute shepherd girl in medieval times. Here the Shrine of Montefortino was built in the sixteenth century; it is still frequented and constitutes an identity component for the local communities, which continue to have collective participation as regards this sacred landscape.

This paper will deal, in particular, with survey methodology: moving to the fieldwork, the crucial point is how to handle the remains on the surface soil which, apart from the fortunate presence of *in situ* structures, are represented by ploughsoil assemblages consisting of fragmented objects (usually interpreted as sites) or isolated finds (off-sites).

Some remarks will be made about the informative potential of ploughsoil findings, looking for practices to improve their epistemological value and filter bias. I feel consideration should be given to the following points:

- 1) The formation processes of the ploughsoil assemblages which could imply a variable relationship between the surface evidence and the subsoil remains, due to natural and anthropic agencies (erosion, alluvial deposits, agricultural work, building activities and so on) (fig. 3);
- 2) Landscape complexity: we should try to envisage the continuum between towns, minor centres, *villae*, small hamlets and any evidence of anthropic activities. The off-sites, if properly studied and interpreted, can provide equally important information as the sites about the history of the district we are researching (many case studies examples presented in De Haas, 2012 and Menchelli, 2012). In fact scattered finds in woody mountainous districts can be evidence of mainly seasonal activities (hunting, gathering, breeding, wood and wicker picking) which required ephemeral huts and shelters as well as basic tools and equipment. I find evidence of this in the mountainous district in the Tenna and Aso upper valleys, in the Marches region, where sheep-breeding is still practised in the traditional way and the shepherds working in the area continue to use huts built in perishable materials, as in ancient times. Moreover, peculiar sporadic finds can be related to social and religious practices: a votive statuette found in a spring area can be evidence of a health cult connected with water (*sanatio*), as documented near the head of the Aso river, in the Montemonaco area (Lucentini, 2001: 79-87) as mentioned above; and
- 3) Painstaking strategies in collecting and studying pottery which constitutes the main bulk of finds. For example, ceramics should be studied from both quantitative and qualitative points of view. For any site, rigorous calculations of the minimum number of exemplars should be carried out, adding to the "classical" EVE practices (Orton, Tyers & Vince, 1993) the technical-ar-

chaeometric peculiarities of the fragmented vessels: that is potsherds which have the same form can be attributed to different vessels if they show diverse technical peculiarities, e.g. different fabrics.

Moreover, diagnostic elements should be considered as qualitative evidence (e.g. *tegulae mammatae* for identifying the heated part of a villa; third century Latial-Campanian cooking wares as markers of colonial farmsteads or in any case of "Romanised" sites: e.g. see Picchi & Menchelli, 2011).

On this subject, particular attention should be paid even to "strange" items which we are not able to classify: for example, in the southern *ager Pisanus*, in the Stagno area a parallelepiped ceramic object (32 cm high) was found in an assemblage formed of impasto sherds dating from the Iron Age. (Panicucci & Bagnoli, 1986). It was considered significant even if its function and meaning were not identified; a general similarity was found with items documented as supports for salt-making vessels in many contexts, from the Neolithic period until today (Manga Region, Niger) but we did not attempt to interpret it because we were dealing with an isolated find and a comparison which was too vague.

This weak clue was confirmed some years later, when we excavated a Late Bronze Age site specialised in salt-making in the Coltano area, a few kilometres north of Stagno. Here we found more than 10,000 fragmented vessels and eleven parallelepiped and fourteen cylindrical supports similar to the one at Stagno (fig. 4). Therefore it became evident that in the Protohistoric Age this district specialise in salt production: according to palaeogeographic studies, the Coltano and Stagno sites were on the banks of a coastal lagoon and people living there gathered salt by boiling brine in vessels which very often had to be broken in order to recover the crystallised salt. (Pasquinucci & Menchelli, 2002). The isolated object we found in the Stagno area was only the tip of the iceberg and we were lucky to find something of the underlying part.

As is well known, pottery can provide information for different approaches, both about chrono-



Fig. 3. Comune di Amandola (Fermo): an example of erosion process (photo: author).

typology, technology, function and cognitive, social and economic matters: see the most recent work on this subject by Giannichedda (2014). Therefore, when we find an object we should not use it, reductively, simply in order to date the context, but we should also consider where and how it was produced, its function, the possible role it had in social relations, its significance for economic history, how was it transported from the production site to the place where it was found.

Vessels should not be interpreted from a static point of view, but dynamically, keeping in mind that the objects we found might have had a long life-cycle: therefore we should take into consideration not only the most obvious phases (production-dis-

tribution-consumption-discarding) but also other possibilities: e.g. the treasuring processes and recycling, reuse activities for other functions and purposes (see in general Hahn & Weiss, 2013).

The latter are evident especially for the amphorae which often appear recycled for trading foodstuffs different from their primary use, as documented by many underwater finds (Abdelhamid, 2013); moreover, amphorae may be present in a surveyed site as reused material for buildings and structures, drainages and *enchtrismos* tombs. Besides the functional aspects, the possible identity-making role of things and their emotional value should also be considered (Depner, 2013) as the objects we find in the ploughed soil might not have been in use, but derived by processes of decontextualisation, due to treasuring or, on the contrary, having been thrown away or destroyed.

According to all these elements, assemblage

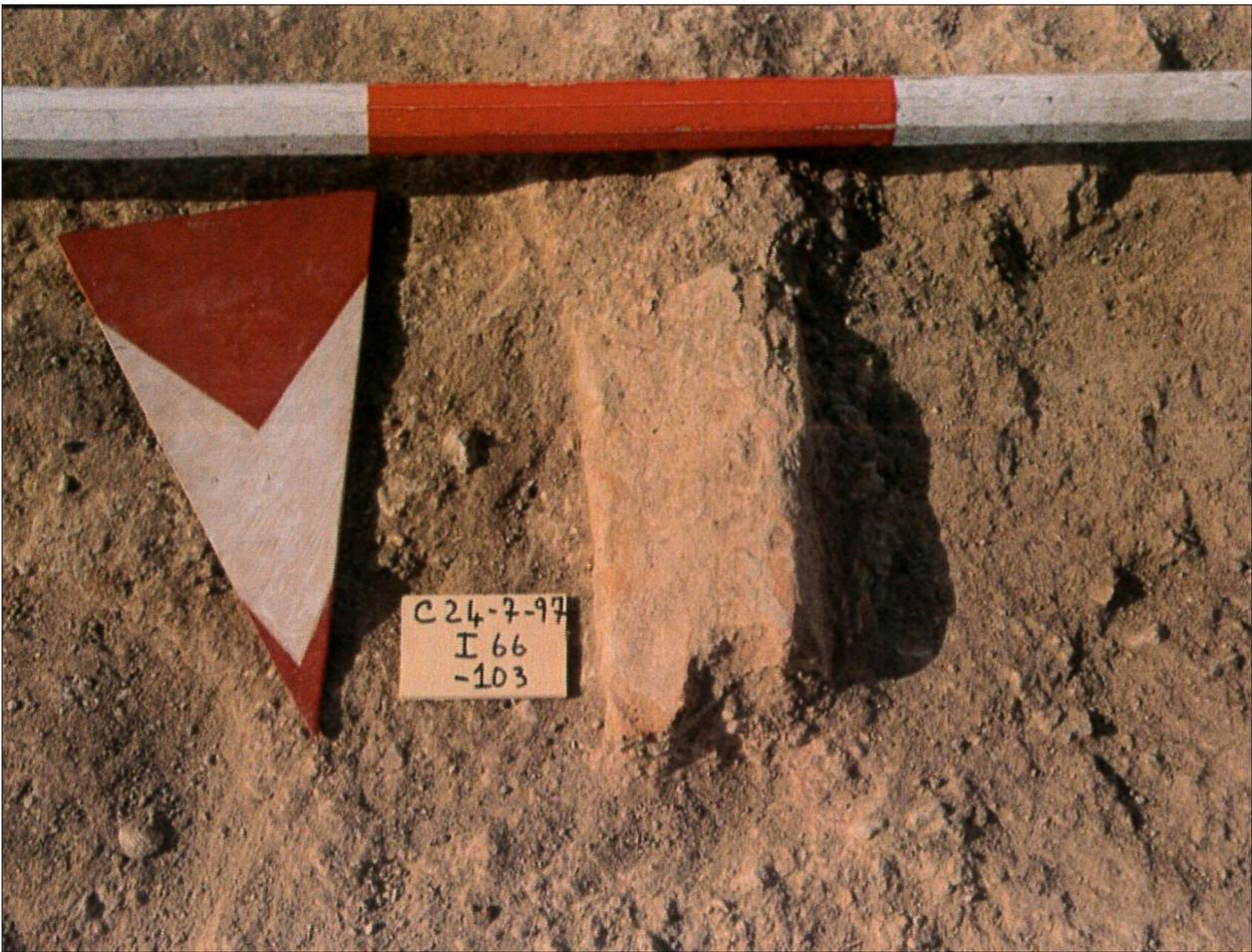


Fig. 4. Coltano (Pisa): a support for salt-making vessels being excavated (photo: author).

ceramics may be considered reliable tools for dating sites if the average chronology of all the finds is compared and, in any case, a flexible gap is taken into consideration.

Ceramics are of fundamental importance for interpreting sites and off-sites and defining their cultural phases, the social and acculturation processes, the economic, technological and commercial trends. In order to exploit fully these potentialities and avoid bias, we have to keep in mind the stochastic characteristics of the processes which have made assemblage and scattered finds available to us (see above, point 1), therefore we have to collect and document what we

find as accurately as possible, in all its material and spiritual aspects, but without considering its evidence in absolutist terms for historical reconstruction, because many elements may be missing or undervalued.

For example we know that the ceramic findings constitute the bulk in ploughsoil assemblages because objects made of other material (metal, glass, wood, wicker and so on) might had been lost (For these topic see Menchelli, 2008).

Moreover, differential pottery survival may cause interpretative distortions: Roman ceramic fabrics are the most resistant, while some weaker wares such as the Protohistorical, Etruscan and Piceni impastos are particularly damaged by the attrition processes, most probably because of their temper and firing temperature (Taylor, 2000: 20-21) and this archaeological invisibility causes gaps in the distribution maps. Even Roman thin



Fig. 5. Comune di San Giuliano (Pisa), Topographic Unit 17: finds considered evidence of a Roman farmstead (photo: M. Parini).

walled pottery may be completely destroyed by the fragmentation processes and due to abrasion, moreover black-glazed and terra sigillata sherds often lose their slip and become unrecognizable,

E. Fentress (2000) said some years ago regarding this topic 'we cannot hope to quantify what is missing, but only record what is there'. I agree to a certain extent, but I think that our task should be more complex: as well as documenting what is there as accurately as possible, we should also keep in mind what is missing, namely utilising all the available sources to try to correct the possible bias which could arise because of the absence of particular categories of materials (Menchelli &

Picchi, 2014).

For example some ceramic productions (black glazed pottery, Italian sigillata, African sigillata) had a Mediterranean distribution and therefore had become the "Guide Fossils" for dating all the sites and contexts: this practice is right (adopting the above-mentioned flexible approach) but their absence should not be considered relevant for the chronology of the sites, as a general model of pottery distribution is not applicable to the whole Romanised world.

Accurate studies of local and regional pottery, in particular amphorae, cooking and coarse ware can provide more trustworthy data for the chronotypological approach. Other sources (literary, documentary, archival, ethnographic, naturalistic, toponymy) of data have to be used to test and integrate the informative potential of the survey results. This interdisciplinary approach is neces-

sary because the landscape reconstruction derived only from ceramic findings could be biased, as documented by our survey in South *Picenum*. In the low and middle Tenna and Aso River valleys the settlement patterns are documented by abundant ceramics locally/regionally produced and imported from Mediterranean trade; the villas, farmsteads and minor sites in that area appear to have been active up to the late sixth century, when the Lombards conquered South *Picenum* (Menchelli, 2012).

On the contrary, in the upper mountain valleys, Late Roman ceramics have not been found and local productions are difficult to date precisely, but other sources enable us to reconstruct a landscape not completely abandoned during the Lombard occupation. For example, toponymy permits the identification of the cultural change which took place in the sixth century AD side by side with the preceding Latin place-names, German ones (such as *Gualdo* = wood) and churches and sites dedicated to the saints particularly venerated by the Lombards became widespread.

To sum up, following the global approach and its consequent theoretical framework and rigorous methodology, archaeologists will be able to take up the interpretative challenge of defining the landscapes in terms of their different components: sites, off-sites and their historical-functional classification (e.g. Roman villas, Late-Etruscan farmsteads and non-datable pens for transhumant sheep). This, after all, is the crucial point in topographic research and the archaeologist's most difficult but creative task: extracting meanings from ploughsoil assemblages (clearly the reference is to Francovich & Patterson, 2000), trying to follow a third path between the objectivity of the data and interpretative subjectivity, naturally supported by solid survey experience (on these interpretative challenges see Menchelli, 2012: 13-22; Volpe & Goffredo, 2014: 43).

Obviously, the objective and subjective standards used for these classifications have to be explained clearly, so that the research results of a district can be used for comparisons and large-scale analyses (Alcock & Cherry, 2004; see Launaro [2011] for an example of comparative

research about the Roman Italy). A few fragmented sherds of vessels and bricks and tiles (fig. 5) can be considered evidence of a Roman farmstead on the basis of an archaeologist's acknowledged experience. For example, in the ongoing survey in the *ager Pisanus* (Comune di San Giuliano) we have decided to test the current archaeological visibility by carrying out surveys in areas already investigated in 1986, where some farmsteads had been identified in the centurial organisation of the *Iulia Opsequens Pisana* colony (Vaggioli, 1990).

If about 30 years ago, rural Roman sites were characterised by fragments which could be easily classified and where, in any case, of large dimensions, today instead they only present a few fragmented sherds. Obviously the mechanical ploughing system in the last decades has progressively crushed the ancient remains and, moreover, as these sites were published and therefore locally well known, many materials might have been picked up by "Sunday archaeologists". The careful collection and interpretation of these concentrations of small fragments is the last possibility of documenting the Roman settlements, before it is too late (as noted by G. Barker many years ago about the changing visibility of the ancient sites: Barker & Symonds, 1984). Therefore the "legacy data" can be a very important tool in arriving at a truly diachronic perspective to understand the formation processes of the ancient landscapes (regarding this topic see in general Witcher, 2008; for case study examples Cascino, Di Giuseppe & Patterson, 2012; Kaptijn, Waelkens & Poblome, 2013).

In conclusion, the above-mentioned accurate and interdisciplinary practices can be useful in reconstructing the ancient landscapes in their complexity, diachronically identifying the paleogeographic changes and the trends of settlement patterns, the town-countryside relationship, infrastructural networks, commercial flows and social, religious and economic activities. A multiscale approach should be adopted, following a local/global dialectic, which considers the local data in the Mediterranean political, economic and social context. By applying these procedures we can

compose a mosaic of mutually comparable local narrations forming historical frameworks which will be increasingly broad and detailed in time and space.

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