Editorial

You may have noticed that this issue of ACN is late by approximately two months. For a quarterly publication this is rather too long and it is a situation that we, the Editors, are not comfortable with. The reason is simply the increasing difficulty in obtaining material to publish. Over the last four or five issues the problem has noticeably worsened to such an extent that we cannot carry on as before. Whereas we used to get a fairly regular stream (well, trickle!) of submitted articles and notes we now get virtually nothing without endless arm-twisting and begging which is far too time-consuming.

It could be that ACN has genuinely outlived its usefulness with the increase in Internet facilities making the dissemination of ACN-type news much more immediate. Whatever the reasons, we have decided that rather than kill it off immediately we will continue for at least another year with a reduced number of issues. Instead of four we will produce three or two issues depending on how successful we are at getting copy.

This will also give you, the readers, a chance to respond in whatever way you see fit. If you have any comments, suggestions (or even articles) please contact us. Regardless of the outcome we would like to take this opportunity to thank you for supporting ACN over the last eleven years.

The Potes Databases

Introduction

Dealing with pottery is nowadays one of the most problematic matters in Galician archaeology, due to both the inherent characteristics of pottery itself, and the approaches taken to study it.

First of all, we must consider that, in spite of the huge amounts of documented material, either from excavations and prospectuses, it shows little information because of its high degree of fragmentation. On the other hand, the methods used to work with such material do not seem totally satisfactory. Two basic approaches are frequent:

1. Selection of a small quantity of pieces, usually based on aesthetic criteria, of which an individual and varied description is made, depending on the characteristics of the very pieces or regarding the author's expectations or the theoretical course he or she feels involved in. There is a lack of concern to unify criteria through a common system of description, thus making impossible to compare and relate data, as well as using information for statistical analysis (Varela and Montero 1993: 84).

2. Use of a priori created typologies with chronocultural delimitation purposes, which usually range between two extremes: some of them show a heavy local nature, being its major limitation the impossibility to carry out comparative studies involving different regional sets of material; some others, on the contrary, are too generic, resulting in an excessive standardization of styles and covering overlapping local variations.
Looking at this situation, and given the few resources we can get for post excavation work, we have tried to find an alternative approach that would permit a flexible treatment of material and would be accessible to any user. Such an approach should agree with the research strategy of Landscape Archaeology, which believes that the archaeological record integrates into social processes and, consequently, every sociocultural instance - both from the real and imaginary worlds - is intimately and directly linked to the products that are created within it (Criado Boado 1989). We must deal with three concepts to get deeper into this: description, comparison, and interpretation.

The idea of description must be understood as a self-contained discourse that talks for the basic characteristics of the archaeological record in a way as coherent with them as possible, and avoiding its manipulation by introducing strange principles of description or others opposed to its original logic (Méndez Fernández 1994:79); this is a key point because only by unifying criteria to describe we can compare data, analyze its constitutive parts and establish correlations among them (Lévi-Strauss 1987:29).

Once we have completed the stage of data description and comparison, we can afford to make an interpretation, but we believe that it will be correct only if it comes after the previous stage of description in a systematic way.

The object of study

We found the duality of fragment and pot from the very beginning of our work. On one hand, fragments carry archaemetric information we did not want to throw away, but which is always partial. On the other hand, a description based on the pot as a whole offered us much more information. Some problems appeared when we tried to define 'pot', because the description of a recipient does not imply that a big proportion of it is available, but we usually perceive a pot through a unique piece. The real difference is given by the amount of global information that the idea of pot can offer. Provided that a pot is made of fragments, we have decided to keep them closely related by a relationship of complementarity, centering contextual information around fragments (it can give information on the degree of fragmentation of pots, their dispersion across the archaeological site, etc.), and descriptive and formal information around pots. From this, our research procedure can be split in two phases:

1. During the first phase, we deal with fragments in an aseptic and empirical way, because the fragment is told of as and object itself, and more valuations and assessments are not needed.
2. During the second phase, the work is done around pots. The study of every fragment that is part of any pot must be have been done previously, and the researcher must make decisions about the pot as a whole.

These criteria were directly translated to the computer level, first recording every sherd found in archaeological sites with little detail, and then selecting some of them and thoroughly describing the resulting pots into the Potes database. The selection of fragments is always done according to the following criteria:

1. Decorated sherds are always selected.
2. Every fragment that can give information about the shape of the pot, such as edges, necks, bottoms, and handles, is also selected.
3. Every piece that can give additional information on pot shape or size, such as the diameter of the pot or the profile of the body, is also selected.

4. Finally, fragments offering kinds of information other than decoration and shape, such as any material treatment or the existence of any surface remains (food, soot) or cracks, are also selected.

After selecting the fragments, all of them are given the same treatment, and all of them are put through the same questions, although the amount of information that can be obtained varies much from case to case. The pottery used to put into practice the computerized system comes from both excavations and prospections. Regarding chronological periods, the system started being developed with Bronze Age decorated pottery (Príeto Martínez 1993), but currently, and after some modifications and improvements, we have added Bronze Age undecorated and Iron Age decorated and undecorated pottery.

Applying a basically object-oriented viewpoint, a simple revision and formalization of the ideas so far exposed show us two different classes of objects: fragments and pots. Fragments aggregate to make composite pots, and both classes have well defined properties. For example, size and three-dimensional location within an excavation are attributes of fragments, while shape and decoration are attributes of pots.

The database

We can describe the internal organization of the Potes database from two different points of view, both closely related: its relational structure and its thematic distribution.

From the structural point of view, the database is made of twenty tables and many relationships among them. Two tables, Pot and Fragment, reflect the complementarity that we have wanted to keep from the beginning, and a one-to-many link between them implements the aggregation relationship described above. These two main tables hold information that just identifies the objects being studied, i.e. fragments and pots. The rest of the tables, linked to either one of the main ones through one-to-one links, hold the data associated to the attributes of each class. Some of the attributes are quantitative, being captured as numeric fields; some others are qualitative, and are sometimes captured as boolean fields - indicating the presence or absence of some element - and some others as combo boxes which force the user to choose a coded option from a predefined list. Because of the special characteristics of the pottery used to develop the system, qualitative fields are much more common than quantitative ones.

From the thematic point of view, four blocks can be identified: morphology, dimensions, treatment of the material, and decoration, to which an additional block, that records any complementary information available (photographs, results of analyses, etc.), can be added. The exact composition of such thematic blocks, which refer essentially to pots, is described below.

The shape of the pot is held across several tables; the main one contains the basic shape, while some additional others refer to different accessory elements of pots, and are only used in the case these are present.

The dimensions of the pot (height, width, diameters, proportions, etc.) are kept in a single table. This information is often difficult to obtain due to the high degree of fragmentation of pottery, but measuring the thickness of cracks in different parts of the pot, given by the available fragments, helps to its synthesis.

Information concerning the treatment of the material is distributed across four tables. One of them holds the general data (manufacturing, baking, finish, colour, etc.). Other data on elements that can occasionally appear on the material (remains of food, soot,
fingerprints), and that offer information both on pottery manufacturing and its following use. Finally, two more tables keep data obtained from physical and chemical analysis of the material.

Another fundamental aspect of any set of pottery, decoration, has an additional pair of tables assigned to. One table describes the techniques, elements, motifs, marks, and decorative schemata and series; the other one specifies the location of decoration within the body of the pot.

Consequences

Designing and constructing a new database system in archaeology is not anything new, as the use of computerised methods to store and manipulate information has been applied to archaeology — and especially to the field of material culture — for a long time. Nevertheless, we believe that it is important to remark the advantages and disadvantages of the system we have built.

The major novelty is probably given by the fact that Potes is specifically designed for the study of pottery, and is not based in a predefined typology but on the description of the observed properties. This contributes to the necessity of taking into account many different elements in order to make any study. Also, and anticipating that the system could be used in the near future with different kinds of pottery, we have tried to make it as flexible as possible, making it easily adaptable to new requirements without needing to alter its essence. This has been demonstrated in practice when incorporating such different kinds of pottery as Bronze and Iron Age ones. Regarding data manipulation, the coding of many of the attributes permits a quick and convenient way to deal with huge amounts of information, making the system reachable to any kind of user; this also facilitates the statistical processing of data. In addition, the system can be used for studies other than those strictly concerning pottery, thanks to the ability to be linked to a bigger and more complex system.¹

Although Potes is a finished and totally functional system, we certainly know there are plenty of improvable aspects, mainly due to the special characteristics of the pottery used. Anyway, it is not our objective to design a highly polyvalent system, but to find an acceptable balance between amplitude and depth.

In general, we think that the usefulness of the system is restricted in five aspects: the object of study (it is thought for recipients, and cannot be used with other pottery manifestations such as spindle whirls or moulds); the kind of recipients (we think it is only valid for pots with simple and geometric shapes, and not to zoomorphic or anthropomorphic ones, although we have not tried to apply it this way); the decorative aspect (we have only taken into account regular and geometric patterns, and not naturalistic or figurative decoration); the field of work (we have used it with prehistoric and protohistoric pottery, and have not tried with material from later periods such as roman, medieval or industrial pottery); and, finally, due to the fragmentation of pottery, it is seldom possible to reconstruct whole pots, so we think the most suitable solution is to describe the general shape of recipients through their silhouettes.

We have introduced a descriptive method that is still to be tested with different kinds of pottery to ensure its validity and complete its basic structure with additional elements. Though, we must say that we did not aim to build a perfect system, although it is a desirable piece of infrastructure, but to manage to cover the necessities of archaeological research and make archaeological interpretation possible. The information that

¹This system holds and integrates geographical, environmental, stratigraphic, actuation, assessing and heritage-related information. (González Pérez 1994).

Potes gives us is the first step and, without following elaboration, is just descriptive. It is necessary a subsequent elaboration and combination of that information to obtain global results, and that is our objective.

References


César A. González
Grupo de Trabajo en Arqueología del Paisaje
Dept. de Historia I, Facultade de Xeografía e Historia,
Universidade de Santiago de Compostela.
Pza. da Universidade, s/n
15703 Santiago de Compostela
Spain

The Third Measure: 3-D Data, Data Capture Systems and Accuracy

The quantification of artefacts large and small is a task that concerns all archaeologists, whether or not our aim is on practical conservation, documentation, or academic research. Traditionally, standing monuments are surveyed using a theodolite and small artefacts measured by calipers. With the advent of digital technology, there is now a wide array of user-friendly data-capture systems applicable to quantitative archaeology at affordable prices. Concomitant with this new technology is the facility to handle artefacts as real, physical objects, just as their makers intended, rather than as components of 'floating' attributes predefined by archaeologists. This paper will discuss the advantage of such an approach to lithic analysis and briefly summarise the pros and cons of different types of three-dimensional data-capture devices.