



Actes du XIVème Congrès UISPP, Université de Liège,
Belgique, 2-8 septembre 2001

Acts of the XIVth UISPP Congress, University of Liège,
Belgium, 2-8 September 2001



SECTION 1

THÉORIES ET MÉTHODES / THEORY AND METHODS

Sessions Générales et Posters
General Sessions and Posters

Édité par / Edited by

Le Secrétariat du Congrès

Président de la Section 1 : Pierre Cattelain



BAR International Series 1145
2003

This title published by

Archaeopress
Publishers of British Archaeological Reports
Gordon House
276 Banbury Road
Oxford OX2 7ED
England
bar@archaeopress.com
www.archaeopress.com

BAR S1145

Acts of the XIVth UISPP Congress, University of Liège, Belgium, 2-8 September 2001
Section 1: Théories et Méthodes / Theory and Methods

Sessions Générales et Posters / General Sessions and Posters

© the individual authors 2003

Avec la collaboration du Ministère de la Région Wallonne
Direction générale de l'Aménagement du territoire, du Logement et du Patrimoine
Subvention n° 01/14750
Mise en page / Editing : Rebecca MILLER

Marcel OTTE, Secrétaire général du XIVème Congrès de l'U.I.S.P.P.
Université de Liège
Service de Préhistoire
7, place du XX août, bât. A1
4000 Liège Belgique

Tél. 0032/4/366.53.41
Fax 0032/4/366.55.51
Email : prehist@ulg.ac.be
Web : <http://www.ulg.ac.be/prehist>

ISBN 1 84171 517 4

Printed in England by The Basingstoke Press

Typesetting and layout : Darko Jerko

All BAR titles are available from:

Hadrian Books Ltd
122 Banbury Road
Oxford
OX2 7BP
England
bar@hadrianbooks.co.uk

The current BAR catalogue with details of all titles in print, prices and means of payment is available free from Hadrian Books or may be downloaded from www.archaeopress.com

THE TECHNOLOGICAL CHAIN AS A METHODOLOGICAL AND THEORETICAL TOOL FROM ARCHAEOLOGY

I. COBAS FERNÁNDEZ & M. P. PRIETO MARTÍNEZ

Résumé : On va centrer notre communication en deux aspects: la visée particulière que nous avons donnée à la Chaîne Technique Opérative dans le cadre de l'Archéologie du paysage pour l'appliquer à l'étude de la céramique préhistorique et protohistorique du NW de la Péninsule Ibérique et les problèmes que nous avons trouvés pour l'application de cet outil dans le contexte mentionné.

En ce qui respecte le premier point, nous croyons que la plus grande nouveauté c'est qu'on ne considère pas la CTO comme un outil exclusivement descriptif des faits technologiques mais comme un instrumente qui permet la relation de ces faits-ci avec le contexte social dans lequel ils se produisent. C'est pour cette raison que nous avons divisé la CTO en trois aspects profondément imbriqués, les aspects techniques, considérés dans *la chaîne technique*, les aspects sociaux, inclus dans *la chaîne conceptuelle* et dernièrement, *le produit final*, qui constitue le dernier maillon de cette chaîne, résultat de la combinaison des deux aspects antérieurs.

En ce qui concerne le deuxième point, il y a de grandes problèmes pour en connaître les aspects technologiques, puisque on a besoin de l'emploi de techniques auxiliaires pas toujours disponibles, mais il est surtout difficile de connaître la dimension imaginaire en nous y approximant à travers sa représentation matérielle.

Abstract: We will focus on two main topics: first, the special approach to the Technological Chain (TC) that we have used to study NW Iberian protohistoric and prehistoric pottery from a landscape archaeology viewpoint; and second, the specific problems that we found while trying to perform such work.

Regarding the first point, we believe that the most innovative issue is that the TC is not only seen as a mere descriptive tool for technological facts, but we have tried to relate such facts with the social context in which they occur. As a result of it, we have divided the TC into three deeply intertwined aspects: the technical aspects or *technological chain*, the social aspects or *conceptual chain*, and the final result of those processes, the *final product*, which comprises the last link in the chain.

Concerning the second point, we have found important obstacles in trying to get to the technological aspects, because the auxiliary techniques are not always readily available. Also, gaining knowledge of the imaginary dimension is even more difficult, as we approach it solely from its material demonstration.

Key words: Operative sequence, operational technological chain (OTC), ceramics, formal analysis, style, patterns of formal regularity, landscape archaeology.

INTRODUCTION*

The theoretical proposal we use as our starting point is that of **Landscape Archaeology**¹, according to which archaeological entities are not isolated objects, but are instead determined by all of the social events which go together to form this record. Archaeological entities are spatial entities, forms produced by social action, connected to a socio-cultural context and comprehensible within it. Material culture is understood as an objectification of the social being, as proposed by Shanks and Tilley (1987: 130, quoted by 1993b: 41)², a product of a specific society which responds to specific cultural norms, meaning material culture "may be interpreted in terms of coherence with the whole cultural system" (Rivera 1990: 24), as all of the process followed to elaborate it, from

obtaining prime materials until achieving the final product, is conditioned either intentionally or accidentally by the social circumstances surrounding it. It becomes a reflection and active part of the social context within which it was produced³.

The study method we propose is what we have called Formal Analysis⁴ (Figure 1), comprising a deconstruction of the characteristics of the objects through a descriptive process,

* This paper was presented in the XIVth Congress of the U.I.S.P.P. (Liège, Belgique, 2-8 Sept. 2001). Symposium 2.1: *Pottery Manufacturing Processes: Reconstruction And Interpretation* (Organisers : Alexandre Livingstone Smith, Rémy Martineau and Dominique Bosquet).

¹ The basic principles of this theoretical vision have been dealt with by Felipe Criado Boado in numerous articles (see: 1993a, 1993b, 1999).

² The proposal is for a study of material culture as an "object situated within the social world as an object" (Boast 1995).

³ What we offer here is only a brief summary of a line of investigation into prehistoric and protohistoric ceramic material culture, which has been under development since 1993 until now in the Material Culture Group of the Laboratory of Archaeology and Cultural Forms, belonging to the University of Santiago de Compostela in Spain, directed by Felipe Criado. Other papers which may be consulted about this line of investigation are Cobas 1995 and 1997, Cobas and Prieto 1997, 1998a and 1998b, Prieto 1993, 1995, 1996, 1998 and 1999.

⁴ In the study of myths using Structural Anthropology, it is said that one of the aims of description is to "identify and make inventories of types, analyse their respective parts, and to establish correlations between them. Without this preliminary work (...) the comparative method (...) runs the risk of failure: either the data which one attempts to compare are so geographically or historically close that it is impossible to be certain that one is dealing with different phenomena, or they are too heterogenous, and the confrontation becomes illegitimate as it approximates things which are not comparable" (Lévi-Strauss 1987: 29), we agree with this definition, and believe that it is perfectly applicable to ceramic studies.

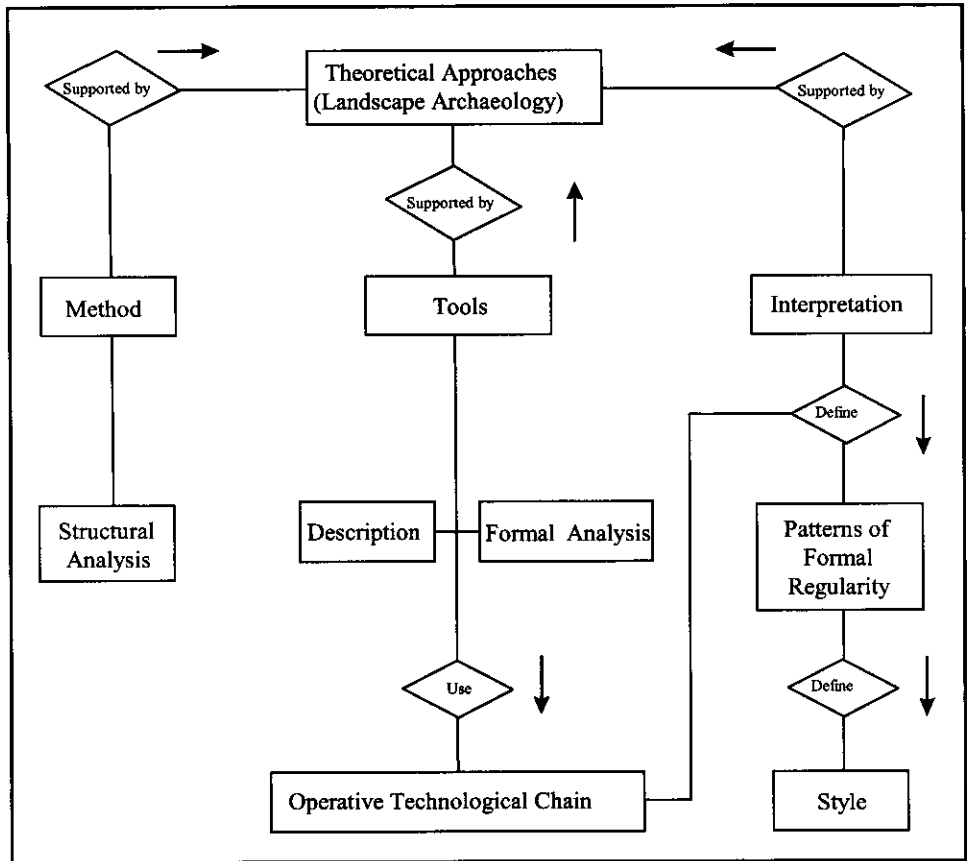


Figure 1. Phases of work process

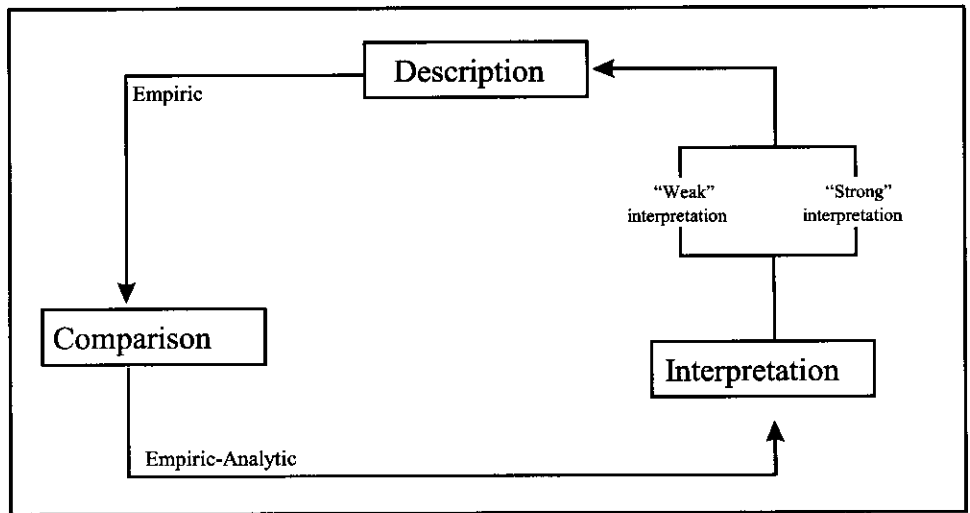


Figure 2. Scheme of work process

and then reconstructing them via an interpretative process. This study takes place in three successive stages which deal with increasingly higher degrees of subjectivity and interpretation. Firstly, a description is made of the objects, forming the foundations upon which all later developments will be based, with the aim of recognising the objects' physical characteristics⁵. The objects are then classified, re-

ordering formal relationships (Criado 1993b: 53) and recognising the formal features which make it possible to define tendencies and variations, types and subtypes within the material group studied, and finally the process of interpretation, within which data are elaborated from the previous stages, attempting to relate them with a pattern of common rationality. This is done by contrasting the data obtained from material culture with other data relevant to this culture, and, when possible, by relating this data to an anthropological theory (figure 2). In summary, the aim of the study is to reconstruct the patterns of regularity which

⁵ The development of work with material in three stages is a common proposal by most authors: Rivera (1990), Hodder (1988), Bate (1978) Delgado (1989).

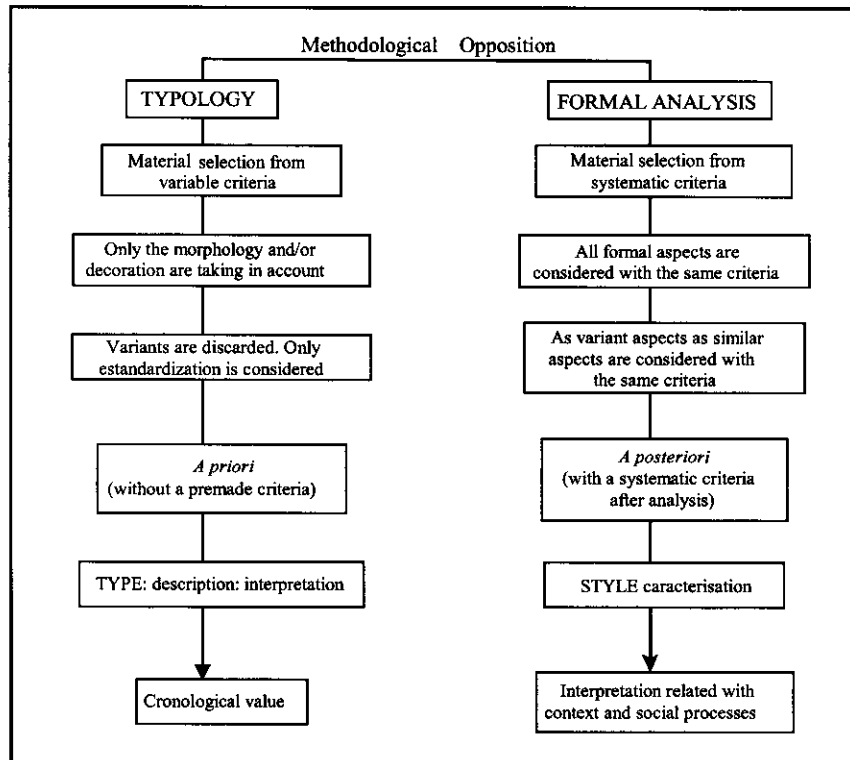


Figure 3. Comparative scheme of two methodologies applied to study of pottery

exist between objects, with the objective of characterising styles⁶.

1. THE OPERATIONAL CHAIN

We believe that the operational chain is the instrument which most obviously brings together all of the principles upon which our proposal for the study of material is based. It unites aspects of descriptive, analytical and interpretative nature, graphically presenting the formal patterns of regularity and differences in material cultural throughout the complete technological process, as far as the archaeological remains permit, in order to characterise the context of past primitive societies, by comparison in multiple levels of complexity. It is descriptive, as long as it is carried out using the data obtained in the first part of the study. It is analytical, as it considers the different phases of material elaboration within a given material group. It is interpretative, as it is hypothetical attempt to not only understand the way in which an object was made, but also the conditioning factors and circumstances which are hidden beneath this process of fabrication⁷.

⁶ We understand the concept of Style in its widest sense, "as one of the mechanisms of the discourse of power, as it is reflected in the formal products of the society: style would be the external formalisation of power, this understood in a Foucaultian sense" (Prieto 1999: 75) (Figure 4).

⁷ These three principles are structurally opposed to the concepts of type and typology, notions which have marked studies of material culture since the earliest days of archaeological literature, using typology as a key methodological instrument, and definitions of type the final objective of the study (Figure 3).

1.1. Historiographic revision of the use of the technical chain

When referring to technical chains we should inevitably refer to the origin of this concept in the context of the study of stone production, despite the fact that in order to apply it to the study of ceramic materials there has been no direct transposition of the term in the way that this was used at first, as a descriptive utility, in Historical-Cultural Archaeology (Léroi-Gourhan 1965) and later on also as an analytical utility, in particular from a functionalist perspective (Binford 1989), but rather in relation to the developments which this concept has undergone in recent years, basically in Technological Anthropology (Lemonnier 1986, 1991a, 1991b, Gosselain 1992), in which its interpretative potential is explored.

1.2. The concept of the technological chain in Landscape Archaeology

The main difference which we believe is introduced by Landscape Archaeology into the application of the concept of the technical chain in ceramic studies lies in the fact that it does not only attempt to reconstruct a physical chain of movements made until obtaining a finished product (Julieu 1992: 176-79) but instead that it gives particular importance to the conceptual aspects involved in this sequence of movements, and the way in which the finished product is related to the social context. For this reason, instead of using the term operational sequence, we prefer to use the concept of technological-operational chain, as we believe that the term 'technology', considered as "knowledge which makes it

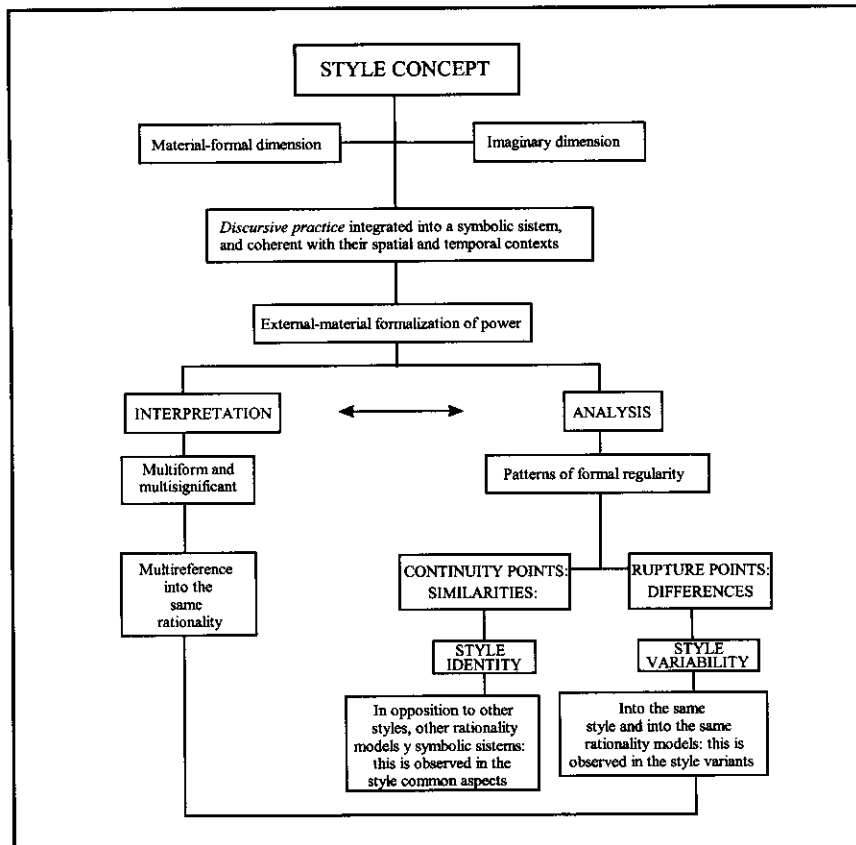


Figura 4. Style significant dimensions from Landscape Archaeology

possible to make things” (Criado 1996: 26), better fits the reality under study, in which it is important to not only consider the physical capacity to create a product, but instead the possession of a symbolic knowledge according to the social context within which the product was created.

We understand the concept of technological-operational chain as an analytical utility which makes possible an orderly description of the events and circumstances which determine the process of manufacturing ceramic elements. These events may be basically arranged into three groups: the technical aspects in their strictest sense, considered within what could properly be called the technical sequence, the aspects which refer to the social events when the social group as an individual and the historical context are combined, which we call the conceptual sequence, and finally the result of these two processes, defined as the final product. However, this is division only from a practical point of view, as they are all interrelated. We will now go on to explain each of these aspects in greater detail (Figure 5).

Technical Sequence/Chain. Within them we differentiate between the *phases of elaboration*, meaning the succession of cycles which occur in the production of a ceramic item, and the *processes of elaboration*, meaning the actions involved and types of work or specific tasks in each of these stages, as lesser entities which make possible the development of each of the cycles.

Conceptual Sequence/Chain. This considers the conditioning factors of economic, territorial, social and

imaginary nature which come together and indicate all of the productive process of the technical sequence. The way of making a piece, from start to finish, forms part of a social intention, integrated within a specific discursive practice, related to the manufacturing methods of a specific social group. Beyond the differences or nuances present in many of the productive phases, it makes it possible to recognise it within a wider social framework which will indicate the identity of style. It is the desire for knowledge and ability of each group which determines the different discursive practices which develop within them⁸ and which will accordingly mark the type of social use for which the product is destined. We do not therefore consider that it may be possible to establish universally valid technological-operational chains using technical aspects as our sole point of reference. As indicated by Perlés (1991: 9), the technological-operational chain “is not an inferential system which goes from the specific to the abstract of the conceptual scheme and the scheme of knowledge, but is also inscribed within a time and a space”. There is no direct relationship between society and material culture considered as general and unchangeable concepts: instead there is an intermediate element, or third factor (Criado 1984-85), formed by the

⁸ According to Foucault’s idea of *will of knowledge-power* (“volonté de savoir-pouvoir” 1984). We believe that this idea may be applied, although of course not directly, to prehistoric societies (Criado Boado, 1989: 78 and Méndez Fernández, 1994: 79); accordingly, the concept of power should not be understood in a strict sense, as Foucault applies it to modern western societies. The hypotheses it presents about the notion of power may be seen in *Poderes y Estrategias* (Powers and Strategies) (Foucault 1980: 170-1 and 1981: 82).

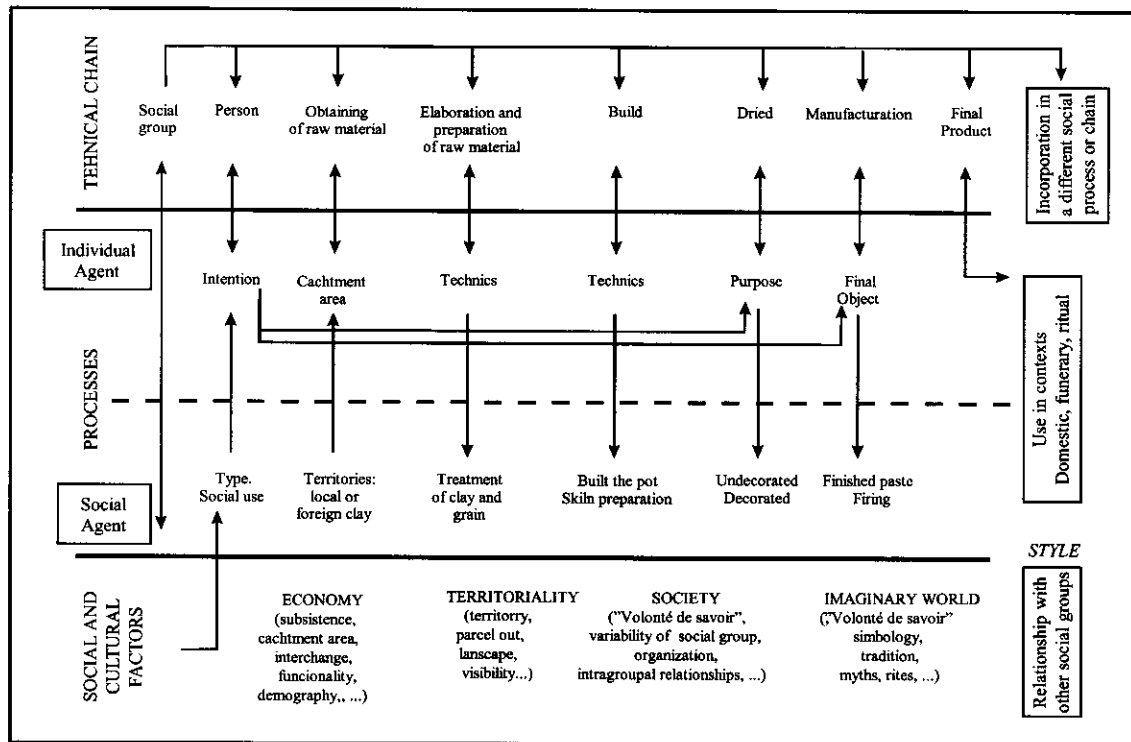


Figure 5. Scheme of the Operative Technological Chain

individual historical group, which conditions it and makes it characteristic.

The result of all this process will be the **final product**. Here we return to the definition which we gave at the start of this text, as we understand the product to be a form, the formal or joint manifestation of formal characteristics acquired as the result of “man’s gestural intervention on material” (Delgado 1988) determined by social occurrences, which due to this social determination are inscribed within a pattern of formal regularity stipulated in coherence with other codes, and in its final instance as a reflection of the pattern of rationality within which it is inscribed. Here material cultural takes on not only a functional (real) value, but also one which is symbolic (imaginary), as an element through which the cultural norms of the society which produced it are reflected. It thus acts as a transmitter of its system of values and beliefs, “although this does not imply that in daily life they may have always acted according to these values” (Rivera 1990: 24 and 25). This final product will go on to form part of the **social sequence or process**, which will form the original context of the piece⁹. Later on, using the final product once it has come to the end of its useful stage, a series of post-depositional processes¹⁰ take place. Finally the archaeologist enters into the picture, attempting to achieve an understanding of all of this from a radically different context¹¹.

⁹ What Boast calls the *useful biography* of ceramics (Boast 1995: 70).

¹⁰ Called *biography of deposition* by Boast (Boast 1995: 70).

¹¹ The biggest problem in the process of reconstructing the significance of a piece is that the archaeologist’s own subjectivity is further marred by the often ignored fact that this reconstruction has to be made only by using the *biography of deposition*. Importance should be given to studies now underway exploring how materials are integrated within the archaeological record, and the relationship between their actual condition

Seen in this light, the working proposal which we carry out for ceramics attempts to avoid both the concept of ceramic pieces only as useable objects, as well as treating ceramics “like people” (Boast 1995)¹². Instead, we study material culture as a *code* produced by a culture, which reflects through its formal characteristics, which are visible and open to description, the pattern of rationality which underlies it.

2. POSSIBILITIES AND LIMITATIONS IN THE USE OF THE OTC

The use of the technological-operational chain offers important novelties for the study of ceramic material culture, and in particular for the definition of styles, as compared to the normal concept of style, based only on the most material aspects, evident and susceptible to change (Lemonnier 1986), the morphology and decoration represented in the finished object¹³, there is instead a study of all the variety of choices made throughout the technological-operational chain which are produced within an equally viable series of options, in particular the active role of the object in past societies, and

and their possible original characteristics (Evans and Millet 1992, Hill 1995b, Maltby 1985) which, although guided by a different theoretical framework, follow lines of investigation which have started previously (Schiffer 1976), and which call attention to the dangers arising from carrying out a direct reading of ceramic material.

¹² We find similar ideas in other authors such as Gruber 1986 and Sackett 1983, which attempt to avoid the direct identification between ceramics and cultures which prevail in studies of evolutionary or diffusionist type.

¹³ As is seen in the definition of style as the “formal knowledge of the particular ways in which the different artifacts have similarities between them” (Davis 1986).

the variable cultural election for each society¹⁴ (*socially pertinent technological choices*, according to Lemonnier 1986: 153)¹⁵. By incorporating the concept of the technological-operational chain, we are incorporating the technological aspect as a new parameter of style: by following the technological processes we may access criteria which are less susceptible to change and which give a more precise idea about past societies (Gosselain 1992).

Using the concept of the operational sequence has several implications, both methodological and interpretative. The most immediate, responding to a methodological orientation, means widening the areas of study, as there are stages within the operational sequence which cannot be reconstructed through archaeology, in particular those which refer to the social factors which influence it, meaning it is necessary to turn to the resource of ethnology, using weak analogies, or referring to technological processes, for the identification of which a visual observation is not enough, but instead it is necessary to carry out physical and chemical analyses from an interpretative point of view. We should bear in mind that while it is possible to have access to the technical sequence and the processes which are developed in order to make a product via the archaeological record, the consideration of cultural factors takes us on to a more hypothetical plane. The conditioning factors which mark the process of fabrication (such as oral tradition or the mythology of these societies) may not be directly documented, and barely even indirectly, in the archaeological record¹⁶.

After identifying cultural choices, we do not directly arrive at the underlying conceptual schemes, as the characteristics of the material culture should be contrasted with the implications about the nature and functioning of a particular society, using this contrast to achieve an understanding of the pattern of rationality which connects both spheres (cfr.: Rivera 1990). The problem lays in the impossibility of knowing the social schemes, as these are societies which have disappeared and which had organisational notions different from our own, leading to the difficulties found in appreciating all the nuances involved in the construction of a piece within the framework of present-day societies (García Alén 1984: 58) becoming even more complicated when we attempt to obtain an understanding of the material produced by a society which has disappeared and was different to our

own¹⁷: we have no understanding of the meanings which underlay the type of work carried out on the material, and these become even further hidden when we try to directly apply our own patterns of rationality, distorting their original meaning¹⁸.

In summary, the type of analysis which we are attempting to propose is different inasmuch as it adds a component of subjectivity into the study of ceramics, although once we accept that this component is inherent in archaeological practice, what we are attempting is to avoid falling into the trap of an uncontrolled and abusive subjectivity, and to instead create a determined methodology and theoretical focus. Similarly, based on the supposition that the different codes produced by the same culture as a response to the same cultural norms may respond to similar patterns of regularity (Lévi-Strauss 1986: 237 and ss.), the aim is to attempt an approximation to past reality through its material culture, in particular ceramic materials. Using these foundations, a defence is offered for the use of the structural line applied to the study of present-day societies. As indicated in Criado (1993b: 53), although not being able to work with present-day societies and not being able to access their language is the basic reason why in archaeology it is not possible to carry out a structural analysis as suggested by Lévi-Strauss, this does not make impossible the existence of theories and procedural methods which may be extremely useful from a methodological point of view.

Authors' addresses

Isabel COBAS FERNÁNDEZ
Laboratorio de Arqueología y Formas Culturales (Instituto de Investigaciones Tecnológicas,
Universidad de Santiago de Compostela)
R.U. Monte da Condosa.
Campus Universitario Sur.
15706 Santiago de Compostela. Spain.
E-mail: phisac@usc.es.

M^a Pilar PRIETO MARTÍNEZ
Laboratorio de Arqueología y Formas Culturales (Instituto de Investigaciones Tecnológicas,
Universidad de Santiago de Compostela).
R.U. Monte da Condosa. Campus Universitario Sur.
15706 Santiago de Compostela. Spain.
E-mail: phppm@usc.es.

Bibliography

- BATE, L.F. 1978. *Formación económico-social y cultura*. México: Ediciones Cultura Popular.
BINFORD, L. R.. 1989. *En busca del pasado*. Barcelona: Crítica (1st ed. 1988: In pursuit of the past. Decoding the archaeological record. London).

¹⁴ These choices may be seen on two levels: one particular level where it is possible to obtain different combinations for the elaboration of the same code of material culture, or a particular level where it is possible to contrast choices and combinations for the production of objects of material culture of different type.

¹⁵ This concept has features in common with the proposal of Gosselain (1992), which starts out using the definition of style of Sackett (1990) reconvertng it by submerging it into the line of study of Technological Anthropology, chiefly developed by Pierre Lemonnier (see 1983, 1986, 1991a, 1991b).

¹⁶ Mythology legitimises the origins of particular technical operations (Lemonnier 1993: 19); for example in Africa in the Bafia people, the women make ceramics although their invention is attributed to the men (Gosselain 1992); there are also taboos related to some of the technological sequences, perhaps those less controlled by the potter at technological level. In America, pottery is also the target of warnings, prescriptions and multiple prohibitions (Lévi-Strauss 1986).

¹⁷ Examples of studies of ceramics in present day societies as a complement to past societies are those of Varela (1990) or Delneuf (1991).

¹⁸ There is increasing awareness about the problems which arise from the manipulation of the archaeological record (p.ej.: Hill y Cumberpath 1993, Hill 1989, 1993, 1994, Le Roux y Gouyonvarc'h 1991).

- BOAST, R. 1995. Fine pots, pure pots, beakers pots. In Kinnes and Varndell (eds.), *'Unbaked Urns of Rudely Shape'. Essays on British and Irish Pottery for Ian Longworth*. Oxbow Monograph 55: 69-80.
- COBAS FERNÁNDEZ, M^a I. 1995. *Bases metodológicas para la descripción y estudio formal de la cerámica del yacimiento de Alto do Castro (Cuntis, Pontevedra)*. (Trabajo de Investigación del Tercer Ciclo). Laboratorio de Arqueología e Formas Culturais, Departamento de Historia I, Facultad de Xeografía e Historia, USC. Santiago de Compostela. Inédito.
- COBAS FERNÁNDEZ, M^a I. 1997. *Estudio de la cerámica castreña del yacimiento de Alto do Castro (Cuntis, Pontevedra)*. (Graduate Thesis). Laboratorio de Arqueología e Formas Culturais, Departamento de Historia I, Facultad de Xeografía e Historia, USC. Santiago de Compostela. Unpublished.
- COBAS FERNÁNDEZ, M^a I., PRIETO MARTÍNEZ, M^a P. 1998a. Defining social and symbolic changes from the Bronze Age to Iron Age through the Operational Chains in NW Iberian pottery. En S. Milliken & M. Vidale (eds.). *Craft Specialization: Operational Sequences and Beyond*. Papers from the EAA Third Annual Meeting at Ravenna 1997. Volume IV. BAR International Series 720: 95-106. Oxford.
- COBAS FERNÁNDEZ, M^a I., PRIETO MARTÍNEZ, M^a P. 1998b. Regularidades espaciales en la cultura material: la cerámica de la Edad del Bronce y la Edad del Hierro en Galicia. *Gallaecia*, 17: 151-75.
- CRIADO BOADO, F. 1984-85. "El tercer factor" o la lógica oculta del emplazamiento de túmulos megalíticos. *Cuadernos de Estudios Gallegos*, 35: 7-18. Santiago de Compostela.
- CRIADO BOADO, F. 1993a. Límites y posibilidades de la Arqueología del Paisaje. *SPAL* 2: 9-56. Sevilla.
- CRIADO BOADO, F. 1993b. Visibilidad e interpretación del registro arqueológico. *Trabajos de Prehistoria*, 50: 39-56. Madrid.
- CRIADO BOADO, F. 1996. El futuro de la arqueología. ¿la arqueología del futuro?. *Trabajos de Prehistoria*, 53 (1): 15-35. Madrid.
- CRIADO BOADO, F. 1999. Hacia una arqueología de los paisajes imaginarios: teoría, metodología y aplicaciones. Santiago de Compostela: CAPA, 6.
- DAVIS, W. 1986. Comments on Nathalie Franklin, "Stochastic vs. Emblematic: an archaeologically useful method for the analysis of style in Australian rock art". *Rock Art Research* 3: 124-25.
- DELGADO, L. 1988. Los componentes estéticos de la práctica social. Notas para el estudio del arte prehispánico. *Boletín de Antropología Americana*, 18: 33-48. Instituto panamericano de Geografía e Historia. Caracas.
- DELGADO, L. 1988. *Seis ensayos sobre estética prehispánica en Venezuela*. Caracas: Estudios, monografías y ensayos. Biblioteca de la Academia Nacional de la Historia: 133.
- DELNEUF, M. 1991. Un champ particulier de l'experimentation en céramique: les ateliers de poterie traditionnelle du Nord-Cameroun. En *25 ans d'études technologiques en préhistoire. Bilan et perspectives*: 65-82. XI Rencontres Internationales d'Archéologie et d'Histoire d'Antibes. Actes des rencontres 1990, Ville d'Antibes: Éditions APDCA Juan-les-Pins: 397.
- EVANS, J. y MILLET, M. 1992. Residuality revisited. *Oxford Journal of Archaeology*, 11: 225-40. Oxford.
- FOUCAULT, M. 1980. *La microfísica del poder*. Madrid: La Piqueta.
- FOUCAULT, M. 1981. *Diálogos sobre el poder*. Madrid: Alianza Editorial.
- FOUCAULT, M. 1984. *Vigilar y castigar*. Madrid: Siglo XXI (1^a ed. 1966. Paris).
- GARCÍA ALÉN, L. 1984. Funcionalidad y sentido estético en las vasijas de los alfareros-campesinos de Galicia. In *Jornadas Científicas Sobre Cerámica y Vidrio* (Galicia, 1-3 junio 1981), Santiago de Compostela: Universidad de Santiago de Compostela: 57-73.
- GOSELAIN, O. P. 1992. Technology and style: potters and pottery among Bafia of Cameroon. *MAN* (New Studies), 27: 559-86.
- GRUBER, J. 1986. Archaeology, history and culture. In d. Meltzer, J. Sabloff y D. Fowler (eds.): *American archaeology, past and future*. Washington D.C.: Smithsonian Institution: 163-86.
- HILL, J. D. 1995. Ritual and rubbish in the iron age of Wessex: a study on the formation of a specific archaeological record. Oxford: Tempus Reparatum, BAR, British Series 242.
- HODDER, I. 1988. *Interpretación en arqueología. Corrientes actuales*. Barcelona: Ed. Crítica. (1^a ed. 1986. Cambridge).
- JULIEU, M. 1992. La technologie et la typologie. In J. Garanger (dir.). *La préhistoire dans le monde. Nouvelle édition de la préhistoire d'André Leroi-Gourhan*: 162-93. Paris: Nouvelle Clío.
- LAKOFF, G. 1987. *Women, Fire and Dangerous Things*. Chicago.
- LEMONNIER, P. 1983. L'étude des systèmes techniques, une urgence en technologie culturelle. *Téchniques culturelles* 1: 11-26.
- LEMONNIER, P. 1986. The study of material culture today: toward an anthropology of technical systems. *Journal of Anthropological Archaeology* 5: 147-86.
- LEMONNIER, P. 1991a. De la culture matérielle á la culture? Ethnologie des techniques et préhistoire. En *25 ans d'études technologiques en préhistoire. Bilan et perspectives*: 15-20. XI Rencontres Internationales d'Archéologie et d'Histoire d'Antibes. Actes des rencontres 1990, Ville d'Antibes: Éditions APDCA Juan-les-Pins: 397.
- LEMONNIER, P. 1991b. Technological choices. Transformation in material cultures since the Neolithic. London: Ed. Routledge.
- LÉROI-GOURHAN, A. 1965. *Préhistoire de l'art occidental*. (1^a ed. Paris).
- LÉVI- STRAUSS, C. 1986. *La alfarera celosa*. Barcelona: Paidós Studio/Básica: 213. (1^a ed. 1985. Paris).
- LÉVI- STRAUSS, C. 1987. *Antropología estructural*. Barcelona: Ed. Paidós: 428. (1^a ed. 1974. Buenos Aires).
- MALTBY, M. 1985. Patterns in faunal assemblage variability. In G. Barker y C. Gamble (eds.): *Beyond domestication in prehistory Europe*: 33-74. London: Routledge.
- MÉNDEZ FERNÁNDEZ, F. 1994. La domesticación del paisaje durante la Edad del Bronce gallego. *Trabajos de Prehistoria*, 51, n^o 1: 77-94. Madrid.
- PERLÉS, C. 1991. Économie des matière première et économie du débitage: deux conception opposeés?. En *25 ans d'études technologiques en préhistoire. Bilan et perspectives*: 35-46. XI Rencontres Internationales d'Archéologie et d'Histoire d'Antibes. Actes des rencontres 1990, Ville d'Antibes: Éditions APDCA Juan-les-Pins.
- PRIETO MARTÍNEZ, P. 1993. *Aproximación al análisis formal de la cerámica de la Edad del Bronce en Galicia*. Trabajo de Investigación, inédito. Santiago de Compostela: Departamento de Historia I, Facultad de Xeografía e Historia, Universidade de Santiago de Compostela.
- PRIETO MARTÍNEZ, P. 1995. Definición de un sistema metodológico para el estudio de la cerámica de la Edad del Bronce en Galicia: La tradición campaniforme del yacimiento de A Lagoa (Toques, A Coruña). In *Actas del XXII Congreso Nacional de Arqueología (Vigo, 1993)*; vol. II: 17-24. Vigo: Concello de Vigo, Consellería de Cultura e Xuventude, Xunta de Galicia.

- PRIETO MARTÍNEZ, P. 1996. *Estudio de la cerámica del segundo milenio a.C. de la Sierra del Bocelo y el Occidente gallego*. Tesis de licenciatura, inédita. Santiago de Compostela: Facultad de Xeografía e Historia, Departamento de Historia I, Universidade de Santiago de Compostela.
- PRIETO MARTÍNEZ, P. 1998. *Forma, estilo y contexto en la cultura material de la Edad del Bronce gallega: cerámica campaniforme y cerámica no decorada*. Tesis doctoral editada en CD-Rom (1999). Santiago de Compostela: Facultad de Xeografía e Historia, Departamento de Historia I, Universidade de Santiago de Compostela.
- PRIETO MARTÍNEZ, P. 1999. Caracterización del estilo cerámico de la Edad del Bronce en Galicia: cerámica campaniforme y cerámica no decorada. *Complutum*, 10: 71-90.
- RIVERA DORADO, M. 1990. El reflejo de la memoria. Notas sobre arte y arqueología. *Revista Española de Antropología Americana*, 20: 19-33. Madrid.
- SACKETT, J. R. 1983. From de Mortillet to Bordes: a french paleolithic research. In G. Daniel (ed.): *Towards a history of archaeology*: 59-112. London: Thames and Huston.
- SACKETT, J. R. 1990. Style and ethnicity in archaeology: a case for isochrestism. In M.W. Conkey y C.A. Hastorf (eds.): *The uses of style in archaeology*: 32-43. Cambridge: Cambridge University Press.
- SCHIFFER, M. 1976. *Behavioral archaeology*. London/New York: Academic Press.
- SHANKS, M. y TILLEY, C. 1987. *Reconstructing in archaeology*. Cambridge: Cambridge University Press.
- VARELA TORRECILLA, C. 1990. La producción alfarera artesanal del occidente de la Península del Yucatán: un ejemplo de cambio cultural. *Revista Española de Antropología Americana*, nº 20. Ed. Universidad Complutense: 183-220. Madrid.