14 The Role of Ethnoarchaeology and Experimental Archaeology in the Study of Ceramics

As we have already seen, the classification of ceramics and, as will be seen shortly, the interpretation of the materials, techniques, *chaînes opératoires* and technological features of the pottery, are often carried out through ways of understanding the material culture that are typical of the western world. We must consider that the research itself involves a close connection between archaeologists and the patterns they observe in the artefacts. Thus, the possibility that the several relationships established by archaeologists among the material culture may be far from the behaviours and motivations existing in the past should be assessed. The reason is that the whole research process is conditioned by the theoretical, scientific and social context in which the researchers are placed. Ultimately, researchers themselves are responsible regarding the significance given to the connections established between pottery technology and individuals (Van der Leeuw, 1984).

In this sense, positivist positions based on numerical data have generally considered that there is a wide gap between researchers and their object of study. Moreover, this perspective, significantly present in ceramic Archaeometry, understands the materiality as something static, stable and unchanging that can be objectively approached. This objective assessment is performed through the use of techniques and methods from the natural sciences, which are applied in order to achieve quantitative data about certain variables that characterise the objects (Dobres and Hoffman, 1994). Nevertheless, the use of quantitative data does not exclude the possibility of undertaking ethnocentric interpretations based on our own way of understanding nature or efficiency, among other many aspects (Jones, 2002).

Other perspectives on technology are not free from these problems either. We must therefore be aware of our position as researchers when addressing through the archaeological record specific social dynamics and identities in the past. For example, it has been noted that issues like these may be strongly related to current insights involving processes (e.g., colonization and decolonization) that are restricted to modern times. It is common to discuss cultural traditions and identities in prehistoric times when perhaps the desire to visualise these aspects in the past may be related to problems that take place in the present (Dobres and Robb, 2000; Miller, 1994; Tilley, 2006).

Once the idea that any research is an extension of the scholar is accepted, it is possible to be aware of our own views and minimise the systematic and exclusive application of certain perspectives when approaching the past. Besides this assumption, we can address the interpretation of material culture from a wider perspective through the use of ethnoarchaeology and ethnoarchaeometry. Along with these procedures, experimental archaeology is also a proper way to solve specific issues related to materiality that may arise throughout the research process.

Both ethnoarchaeology and experimentation may be key strategies to know the feasibility of certain techniques and assess their potential cultural significance (Colomer, 2005; Schiffer and Skibo, 1987). Ethnography, ethnoarchaeology and experimental archaeology are essential in ceramic research to provide more coherent, comprehensive and diverse frameworks that can be subsequently used to support our interpretations about the technology of past societies and its significance. Therefore, some clarifications and qualifications regarding the possibilities and limitations that both disciplines offer in the study of pottery technology are needed.

14.1 Ethnoarchaeology, Ethnoarchaeometry and Ceramic Technology

As we will see in the next section, ethnoarchaeology is currently used in different ways to interpret ceramic technology. The aim of this section is not to draw a detailed approach to the huge amount of ethnoarchaeological studies focused on modern pottery communities. Moreover, the evolution of ceramic ethnoarchaeology and its state-of-the-art are already summarised in several works (e.g., Arthur, 2003; Hegmon, 2000; Skibo, 1992; Stark, 2003). Therefore, the goal here is to highlight the possibilities and limitations that may involve the use of data obtained from studies focused on contemporary societies in order to improve our approaches to the past. In addition, throughout this book many examples and case studies related to modern groups of potters are repeatedly mentioned. Thus, it is absolutely necessary to clarify which viewpoint has been applied regarding the role of such ethnoarchaeological works.

In recent decades, studies focused on ceramic productions undertaken by modern societies have become widespread and tried to address several concerns. Ethnography demonstrated that cultural, social and economic factors are also technological and that the technical aspects of the materials can be used to address the people behind the pottery. Thus, ethnoarchaeological studies improved the archaeologist's sources to investigate past societies, since these approaches represent the ideal framework to assess the close interrelationship existing between structure and agency, allowing us to understand the complex bonds that link materiality and the intangible (Dietler and Herbich, 1998; Druc, 1996; Lemonnier, 1986; Martineau, 2001; Tite, 2008).

In this respect, ethnoarchaeology enable us to test the viability of certain theoretical approaches and archaeological interpretations. Its use revealed in practice the complexity of the processes and phenomena involving ceramics, especially regarding technological variability, change processes and the dynamics of cultural transmission. Also this discipline has focused on the link existing between technological traits and social issues related to the organization of production, allowing us to realise the way pottery features are the consequence of the social interaction between groups of potters and other individuals (Arnold, 1985, 1989, 1999; Costin, 2000; Longacre, 1999; Martineau, 2001).

Thus, ethnoarchaeology has been used to examine the processes of pottery manufacture and use, as well as the distribution of ceramics and its relation to social factors (Calvo *et al.*, 2011, 2013; Stark, 1992; Vander Linden, 2001). Moreover, ethnography allows us, in some cases, to approach the significance and meaning of objects that are quite difficult to interpret (Barley, 1994; Stark, 2003). The study of modern potters also permits us to improve excavation methodologies, enabling archaeologists to be aware of the existence of some archaeological materials that had gone unnoticed (Van der Leeuw, 1984, 1999).

As we have seen, the study of materiality and ceramic technology in contemporary societies can be very effective for archaeological purposes. However, the interpretation obtained from these works may be partial and even counterproductive without a proper framework of understanding between ethnography and archaeology. Many researchers agree with this sentiment, but currently different trends are valid in ethnoarchaeology regarding the role of the inferences and the limits of the discipline.

Processual archaeology stated from the beginning the serious limitations involved in interpreting the significance of the ceramic technology exclusively through deductive approaches of the past and theories solely centred in ancient pottery productions (Arnold, 1999). As it will be further discussed momentarily, in these studies (e.g., Arnold, 1971, 1972, 1985; Rye, 1976) an etic vision of the practices carried out by modern societies predominates, and their final aim is to draw general laws. These universal laws permit us to interpret the past through comparisons and direct analogies based on contemporary practices. Basically, processualist positions have focused on establishing a series of cultural-evolutionary "black boxes" that include broad key features related to the processes of production, distribution, use and deposition of ceramics in order to provide stable and predictable universal models. These models advocate unilinear social and technological evolution, where change is understood as a process closely linked to environment and economy.

These foundations do not consider either the opinions of the individuals under study or the emic vision of their own culture. One of the reluctances attributed to emic perspectives in the study of technology in ethnoarchaeology relates to the assumption that the data obtained from people do not really corresponds to reality. Rather, their viewpoints respond to fictions created by the individuals, who intend to preserve a specific image of themselves. However, this is a fact that also affects researchers (Carreras and Nadal, 2003), so that a more participatory and etic approach does not solve this problem.

In this sense, contextual perspectives in ethnoarchaeology have also subjected to criticism many topics on ceramic technology developed by evolutionary processual approaches. These trends demonstrated, for instance, the inadequacy of normativist, technicist and economistic viewpoints that are broadly used in archaeological interpretations, especially in ceramic archaeometry. Thus, these contextual disciplines highlighted that technological choices made by individuals do not always correspond to natural laws and universal predictable models. They also emphasised

the inadequacy of certain ceramic descriptions and classifications often carried out in archaeology, since they may be far from the concepts and ideas used by people in their daily lives (Van der Leeuw, 1999).

In contrast, ethnoarchaeological observations of different social, cultural and environmental contexts, as well as the careful use of this discipline through a deep contextual analysis, has thrown light upon the cultural complexity involved in the technological choices of the individuals along the life cycle of ceramics. In this sense, many studies in ceramic technology consider that ethnoarchaeology is a suitable discipline to connect the abstract and ideal dimension of the analytical data with the real and multidimensional world in which people live. Thus, it has been emphasised that social practices and material culture are strongly determined by the context in which individuals live, where ceramics interact in complex ways with multiple aspects of culture (Christakis, 1999; Gibson and Woods, 1990; Stark, 2003).

The application of these latter perspectives has reopened the debate on concepts, such as "hand-made pottery", that were supposedly well-established. Thus, it is currently emphasized that these concepts are endowed with a complexity that is difficult to approach from an etic and universalistic perspective alone. In this way, not all hand-made vessels are manufactured, perceived, understood and used in the same way, and thus also involve multiple and varied meanings. In this sense, ethnoarchaeology approximates for us the complexity and diversity of cultural behaviours and promotes a more open-minded and less ethnocentric perspective whereby we exercise greater caution in order to avoid universilising interpretations (González Ruibal, 2003). This perspective raises awareness regarding the existence of multiple technological choices that are completely inconceivable from our highly functionalist western and modern viewpoints (Sillar and Tite, 2000; West, 1992).

In this sense, any culture relates to certain historical processes involving different individuals as agents. In this framework, different interactions with the social and natural environment are produced and diverse historical dynamics are generated. Thus, it is risky to make universal generalizations regarding technology based on models that have a low level of universality, since the transmission of technological knowledge always takes place in specific contexts and through concrete language and situations. Obviously, concepts induced from different phenomena are incommensurable. Hence, the systematic application of ethnographic analogies not subjected to criticism and reflection is extremely dangerous, since it can easily give place to the establishment of cultural attributes that do not necessarily correlate between different societies (Carreras and Nadal, 2003; Djordjevic, 2003; González Ruibal, 2003).

These premises are sufficiently consistent to avoid making empirically based analogies between contemporary practices involving pottery and the actions undertaken by individuals in the past. In any case, although no culture is universal and each practice has to be understood in its specific framework, it is possible to reflect on concepts that are related to similar technological actions and contexts. We

can evaluate if the common technological traits documented may respond to a similar phenomenology (Van der Leeuw, 1984) and carry out an accurate contextual analysis with the aim to validate or refute the hypotheses (Hodder, 1991).

In short, although the possibilities of ethnography to enrich our explanations about the past are suggestive, their use in terms of direct analogies related to extinct prehistoric cultural practices is quite dangerous. The rationality patterns of modern societies do not necessarily fit with the rationale and concerns of ancient communities. It is therefore necessary to admit the limitations of ethnoarchaeology in archaeological interpretation. In this sense, this discipline provides a reflective framework that enriches our interpretations regarding archaeological pottery and provides us access to multiple conceptualizations of both reality and materiality. The study of modern societies allows us to face multicultural complexity and overcome ethnocentric conceptions through which many western and modern researchers often explain the material record of past societies. Thus, this perspective enhances critical views that are crucial when assessing the analysis of contexts, objects and meanings that little have to do with our own values and rationale (González Ruibal, 2003; Hernando, 1995; Hodder, 1991).

The archaeometric characterization of ceramics and raw materials from modern societies has led to a branch in ethnoarchaeology and ceramic studies called *Ethnomineralogy* (Arnold, 1971) or *Ethnoarchaeometry* (Buxeda *et al.,* 2003). The combination of archaeometry and ethnoarchaeology favoured a deeper insight on the way the different potter's technological choices carried out along the *chaîne opératoire* have a particular reflection in the multiple dimensions of materiality. On the one hand, archaeometry provides an effective procedure for obtaining a large amount of accurate technological data from the materiality. On the other, ethnography provides a framework that explains such archaeometric data through several viewpoints (e.g., social, ideological, identity, etc.).

Ethnoarchaeometry allows us to test methodologies commonly used in the analysis of ceramics and to challenge their constraints and possibilities in the study of the archaeological record. In this sense, studies developed in Pereruela in Spain (Buxeda *et al.,* 2003; Cau, 2003) tested, for example, the amount of sample that is needed to have a proper analytical representation of a ceramic. This study also dealt with the compositional variability existing within a single vessel as well as within a production centre, approaching the chemical elements and causes involved in such variability. Researches like these assess, for instance, the ability of various archaeometric analyses such as XRF or INAA to distinguish different production units and centres of production.

Complementarily, ethnoarchaeometry assesses how social aspects are reflected in the composition of pottery with the aim to develop deeper interpretations regarding its technology. In this sense, attention is paid to the way potters categorise clays through their mineralogical attributes (Arnold, 1971) or how the compositional variability observed in ceramics may respond to multiple social and environmental factors

(Arnold, 2000). This branch of ethnoarchaeology has also demonstrated that many archaeological interpretations made on the basis of archaeometric data may be overly simplistic. Thus, they do not accurately respond to the social realities underlying the technological actions with which relate (Livingstone-Smith, 2007). Moreover, it is also highlighted that the composition of ceramics may reflect particular social links (Druc and Gwyn, 1998; Stark *et al.*, 2000) or the existence of factionalism within a single community (Neupert, 2000).

All the viewpoints mentioned above imply a useful framework to best approach the significance of the technological actions identified through the analysis of materials. Thus, a significant methodological, interpretative and conceptual progress in the study of ceramic technology can be achieved by complementing archaeometry and ethnoarchaeology. Going beyond the mere analogy, ethnoarchaeometric approaches allow a better understanding of the relationship between the ideal and materiality, providing an adequate procedure for interpreting the analytical results in terms of social practices. Moreover, this discipline allows us to carry out interpretations in which pottery vessels and their life cycle are fully active in society. Ethnography has proven to be crucial for recognizing the existence of social interactions within a community that are related to specific ways of organising pottery production and identity bonds (e.g., Gosselain, 2000). So, these kinds of approaches make it possible to face the social significance of technology as well as the mechanisms and contexts in which it is transmitted, maintained or changed throughout time and place.

Finally, *Historical Anthropology* is another interesting discipline that should be briefly mentioned in this section. This approach considers available knowledge (e.g., folklore, mythology, crafts, values and concepts, etc.) related to specific historical frameworks that are close in space and time to the archaeological contexts under study. Thus, this historical information may potentially be used to interpret archaeological data, although always avoiding essentialisms and timeless identities. This perspective, in which current material culture is used to interpret the archaeological record, is also developed from ethnoarchaeometrical studies centred on the analysis of raw materials, pastes and pottery fabrics. Thus, several studies consider the technological traditions and traits that define current pottery productions with the aim to deepen in the technology of ancient artefacts. This is the case, for instance, of some archaeometric research recently undertaken in some Mediterranean islands such as Sicily, Sardinia and Crete (Cau *et al.*, 2011; Kiriatzi *et al.*, 2009; Montana and Polito, 2009; Polito *et al.*, 2011; Tsantini *et al.*, 2011), as well as in pottery productions from Ituri in the Congo (Mercader *et al.*, 2000), the Banda area in Ghana (Cruz, 1996; Stahl *et al.*, 2008) or the Philippines (Yankowski, 2008) and Pakistan (Spataro, 2004).

14.2 Ceramics and Experimentation in Archaeology

In spite of the usefulness of ethnography and historical anthropology it is obvious that these disciplines have important constraints for approaching, for instance, the study of prehistoric pottery. This is due to the impossibility of carry out analogies and the lack of continuity between prehistoric and contemporary technological pottery traditions. In this sense, experimental research is one of the procedures commonly used in archaeology to overcome some of the gaps that emerge when extinct technologies are approached from modern science. These experiments become reference models in which we know all the details of the manufacturing process. Thus, they improve our understanding of the physical changes occurring in the materials due to technical processes that are associated with specific technological actions performed in the past (Baena, 1999; Banning, 2005; Clop, 1998; Gibson and Woods, 1990; Martineau, 2001; Morgado and Baena, 2011; Ramos Sainz, 2002; Sillar and Tite, 2000; Schiffer and Skibo, 1987).

These gaps or weak points mainly arise when we try to address the significance of past technologies and explain technological change. In this sense, experimentation with materials and techniques allows a better understanding of the relationship that exists between the physical properties of the pottery, manufacturing processes and the potter's technological choices. Experimental research can provide hypotheses about the needs that could have motivated these choices, thus responding to specific archaeological problems through the study of materiality. This so-called *behavioural perspective* (Schiffer, 1976, 2004; Schiffer and Skibo, 1987) assesses human behaviour in technical and functional terms, allowing us to validate or refute assumptions that have long been considered valid in most cases.

As most scholars state, the usefulness of experimental archaeology lies in considering archaeological data and concerns as the starting point of the experiments. Only from accurate archaeological observations it is possible to generate proper experiments designed to answer specific questions regarding the use of a particular technique or material. Thus, through this procedure we can get a number of assumptions with which to re-read the archaeological record and the contexts under study. In this sense, it is also important to consider what kind of resources, raw materials and methods are being used in the experimental research and reflect about them in archaeological terms (Martineau, 2001).

Experimental research on ceramics has prolifically developed since the 1960s, focusing on different materials and techniques. The purposes and accuracy of the studies vary depending on the methodology and objectives. On the one hand, there are replicative experimental studies (e.g., Aranda and Fernández, 2005; Broda *et al.*, 2009; Gasull *et al.*, 1984; Ramos Sainz, 2002) which attempt to recreate the experience of the craftwork. Thus, their aim is to reproduce the techniques and procedures presumably used in ancient times and recreate ceramic replicas as accurately as possible based on the technological features observed in the archaeological record.

In these studies, the control over the multiple variables involved in the experimental process is low and their quantification non-existent. Although such experiments may be useful for providing some experience and establish qualitatively the degree of difficulty of certain techniques, their potential is especially noticeable in the field of archaeological education (Erin, 2009; Morgado and Baena, 2011).

On the other hand, there are experimental researches in which accurate and precise measurements are performed on specific variables in laboratories under closely controlled conditions. Moreover, a substantial number of samples are often chosen in order to give greater significance to the results. This strategy also allows the statistical treatment of experimental data as well as the establishment of numerical ranges related to the behaviour of each parameter tested. These experiments focus on how certain technical procedures affect the composition and/or properties of materials. In this sense, various parameters and several phases of the *chaîne opératoire* are studied, as well as other issues related to use and depositional processes affecting pottery (Albero, 2010; Bronitsky and Hamer, 1986; Müller *et al.*, 2009; Pierret, 1994; Schiffer and Skibo, 1987; Skibo and Schiffer, 1987; Skibo *et al.*, 1989; Steponatis, 1984; Tite *et al.*, 2001; Woods, 1986).

Experimental studies in ceramics are quite varied. For instance, there are experiments that focus on the application of certain surface treatments, such as resins, slips or decorations (Capel *et al.*, 2006; Schiffer, 1990a; Skibo *et al.*, 1997; Young and Stone, 1990). Others refer to the firing process and analyse the behaviour of pottery regarding their composition and firing temperature (Maritan *et al.*, 2005), the use of various types of firing structures and atmospheres (Dawson and Kent, 1984, 1985, 1987) and fuels (Palamarczuk, 2004; Waldren, 1991). Other experimental researches carried out with the aim to approach the compositional changes that take place in the paste as a consequence of the clay purification process and the addition of temper are also documented (Blackman, 1992; Cogswell *et al.*, 1998; Kilikoglou *et al.*, 1988; Neff *et al.*, 1988, 1989; Sterba *et al.*, 2009).

Others studies have added temper of different nature to clays in order to approximate the attributes, advantages and limitations that these components provide to raw materials and final products. Studies performed with widely used tempers such as shell (Carter, 2002; Feathers, 2006; Maritan *et al.*, 2007; Rye, 1976; Schiffer and Skibo, 1987), quartz (Kilikoglou *et al.*, 1998; West, 1992), or organic matter (Albero, 2010; Hodges, 1962; Johnson *et al.*, 1988; Maritan *et al.*, 2006; Schiffer and Skibo, 1987; Sestier *et al.*, 2005; Skibo *et al.*, 1989; Toledo *et al.*, 2004; Tsetlin, 2003a) can be mentioned. There are also experiments that tested organic substances rarely used in pottery production, such as hair to temper the paste (Jeffra, 2008) or blood to hydrate the clay and shape the vessels (Vidal, 2011a).

Also experimental research often focuses in the analysis of clays with the aim to approach their physical properties and behaviour as well as the differences existing between the different sources surrounding archaeological sites. As seen before, the manufacturing process implies deep physicochemical changes in the raw materials

that involve a large number of variables. This complexity derives from the multiple components that make up clays, as well as the diverse environmental aspects involved in their behaviour (e.g., humidity, ambient temperature, firing atmosphere, heating rate, duration of the firing, etc.). Thus, experiments with clays usually concentrate only on variables that are considered relevant to undertake the pottery production. It is common to analyse aspects such as plasticity, water absorption, weight loss after drying and firing processes, porosity, chromatic schemes, etc. (Carter, 2002; Howard, 1982; Morales, 2005; Rice, 1987; Tsetlin, 2003a).

Although abundant literature exists regarding the general behaviour of many types of clays, the aim of experimental archaeology is also to validate such universal assessments in practice and in specific materials. This approach is recommended since significant compositional variations may exist between different clay sources that also involve relevant changes in their physicochemical properties. Thus, the causes of differences in the attributes of the clays present in a given territory can be addressed through the analytical and experimental research of ceramic raw materials. Subsequently, we can try to find out if these properties could influence their selection. Both routines, theoretical and practical, are complementary and allow us to approach and quantify some specific features of the raw materials available to ancient potters (Albero, 2011a; Albero and García Rosselló, 2011; García Rosselló and Albero, 2011).

Another kind of experimental research commonly applied in ceramic archaeometry is centred on the experimentation and subsequent analysis of the archaeological samples themselves. As stated in previous sections, re-firing experiments of archaeological pottery are usual in order to approach the firing procedures used by potters. Thus, the several physicochemical changes occurring in clays and pastes as a consequence of the application of heat, as well as their thermic and dilatometric behaviour, are usually recorded. These types of thermal analyses, such as Differential Thermal Analysis (DTA), Thermo-Gravimetric Analysis (TGA) and X-ray Diffraction (XRD) equipped with high temperature chamber, provide experimental patterns that can be compared with the data obtained from the archaeological ceramics. For instance, they can be used for modelling the development of high temperature minerals in the samples or to differentiate between exothermic (heat release) and endothermic (heat absorption) mineral phases occurring in the pastes (Albero, 2011a; Buxeda and Cau, 1995; Buxeda *et al.,* 2002; Schwedt *et al.,* 2006). Thermal experiments also provide information about weight loss and calorimetric changes that occur in the sample during the heating process. Their use is common in clay studies and, to a lesser extent, in ceramic archaeometry[17] since they are quite effective

17 The benefits of thermal analyses in archaeological and experimental research on clays and ceramics have been highlighted by many scholars (e.g., Capel, 1983; Drebushchak *et al.,* 2005; Gibson and Woods, 1990; Mahmoudi *et al.,* 2008; Maritan *et al.*, 2007; Morales, 2005; Murad and Wagner, 1996; Orellana *et al.,* 2001; Papadopoulou *et al.*, 2006; Souza *et al.,* 2005; Turbanti, 2004).

for modelling, among other processes, solid phase reactions as well as crystalline and glass transitions.

The criticisms made to experimental approaches lie in the fact that most research exclusively undertakes functional, materialistic or technical explanations of the results obtained. They rarely refer to other aspects of the artefacts that are also important to properly understand other dimensions of their use, such as the symbolic or social spheres (Carreras and Nadal, 2003). Furthermore, there are some problems arising from the significance that archaeologists give to inferences based on technological approaches in which the roles of apprentice, participant and researcher lie in the same individual. In this sense, this framework is clearly deficient for establishing definitive conclusions about the reasons that motivate people to use a certain technology in the past. As with ethnoarchaeology, the impossibility of drawing analogies between past and present through experimental research should be accepted. However, once this fact is assumed, it remains clear that the value of experimental archaeology lies in its potential to generate new hypotheses that permit to enrich significantly our interpretive frameworks.

Experimentation provides a background from which we can approach the cognitive ability of people to perceive certain attributes of the materials (Schiffer, 2004; Schiffer and Skibo, 1987). Thus, this strategy allows us to reflect to what extent changes in the physical properties of ceramics may result from potters' intentional actions and their awareness of the effects of such properties. This background makes it possible to identify whether the actions performed by potters and users were intentional and meaningful. However, among the problems related to this approach, as will be discussed in the following sections, the impossibility of establishing valid and universal categories of perception shared for all the cultures should be noted (Jones, 2002).

Experimental research also provides a framework from which to understand the complex and multiple physical connections existing between the different techniques and materials involved in the *chaîne opératoire*, as well as among the different phases of the life cycle of ceramics. In short, the development of accurate experiments starting from particular archaeological enquiries allows us to better approximate the technical parameters that drive pottery production. Thus, these approaches are capable of providing more significance to the inferences made regarding ceramic records of extinct societies (Djordjevic, 2003; Kingery, 1982; Schiffer and Skibo, 1987; Sillar and Tite, 2000).

The physical properties of raw materials and artefacts are fundamental aspects of the materiality and affect the way in which they are selected, handled and used (Jones, 2004). Thus, overcoming purely technical interpretations in experimental research lies in investigating how prehistoric societies used the properties of various materials and techniques in order to constrain or expand their use in certain social practices. In this sense, we can try to establish some connections between the properties of particular materials and the way they are socialized in particular contexts.

In conclusion, after this brief overview of the possibilities and limitations of experimental research in the study of ceramic technology, we can summarise that the ultimate goal should not be to reproduce prehistoric manufacturing techniques but rather to analyse the qualitative and quantitative aspects of materials and techniques that could be relevant in the potter's technological choices in the societies under study. In this way, the data obtained from experimental research become relevant once related to the social context in which the materials and techniques are used.

Finally, we have to note the opportunities that experimental archaeology provides for generating new theoretical frameworks for studying the ceramic record with a greater degree of complexity. In this sense, some experimental protocols focused on identifying the potential role of various social groups in pottery production have been recently developed. Their learning skills and the features that characterise their pottery productions and which permit to identify them have also been recorded. In this line of research, for instance, the cognitive and physical capabilities and constraints of different collectives such as the elderly, children (Vidal, 2011b) or handicapped people (Vidal, 2013) have been studied.