

Using the present to interpret the past:

The role of ethnographic studies in Andean Archaeology

Bill Sillar

Institute of Archaeology, University College London
34 Gordon Square, London, WC1H 0PY
b.sillar@ucl.ac.uk

Gabriel Ramón Joffré

Departamento de Humanidades,
Pontificia Universidad Católica del Perú, PUCP
glramon@pucp.edu.pe

Abstract

Within Andean research it is common to use ethnographic analogies to aid the interpretation of archaeological remains, and ethnographers and archaeologists have developed shared research in technology, material culture and material practice. Although most of this research does not follow the detailed recording methods of spatial patterning envisioned in earlier formulations of ethnoarchaeology, it has had a profound effect on how archaeology in the region has been interpreted. This paper uses examples from the study of pottery production to address earlier debates about the use of ethnographic analogy, discusses the dangers of imposing an idealised or uniform vision of traditional Andean societies onto earlier periods (*'Lo Andino'*) but stresses the benefits of combining ethnographic and archaeological research to explore continuities and changes in cultural practice and regional variations.

Key Words: South America, Ethnoarchaeology, Pottery, Technology, Craft Production, 'lo Andino'

The use of analogy and the role of ethnoarchaeology

Archaeological data are complex and multifaceted, yet only a fraction of the materials used in the past are preserved, and important aspects of past societies expressed in words, concepts and actions leave little or no material trace. To interpret this partial evidence we try to identify the active processes that archaeological materials participated in and seek to reconstruct their social significance. The main mechanism that we use to do this is to make analogies to comparable situations where the active processes and social context have been recorded in more detail. These analogies may be drawn from a wide range of sources such as historic records, folklore and ethnographic reports, including ethnoarchaeology which studies ethnographic situations with the specific aim of assisting archaeological interpretation. Ethnographic analogies can be used to interpret individual objects, techniques and physical process (e.g. the form and function of a grinding stone or discard pattern around a hearth) which we could refer to as 'formal analogies'. Ethnography has also been used to develop analogies to interpret broader aspects of past social and economic organisation (such as the organisation of production, trade and exchange systems or community social structures). These 'institutional analogies' include the use of cross-cultural models of comparative anthropology, such as the frequent used yet controversial identification of band, tribe, chiefdom and state societies (e.g. Service and Sahlins 1960, Service 1962) or the differentiation of household, itinerant, workshop and factory levels of production (e.g. Peacock 1982, Costin 1991). Broad analogies of social institutions have been of particular interest to archaeologists working in the Andes (Ramón 2008: 28-37), where local models for social structure identified from ethnography and historical records (such as the *ayllu* community structure or the 'vertical archipelago' model discussed below) are often evoked. Archaeological identification of these 'institutional analogies' should require multiple lines of evidence, but in practice they are frequently stated or assumed on the basis of historical continuity, without very much evidential support.

Analogies drawn from any time or place may provide useful stimuli to interpret archaeological data, but analogies from the same geographical and cultural region frequently have greater resonance due to assumptions of cultural continuity and environmental specificity. Direct historical analogies use information from present-day people and historical records relating to the same geographic region to interpret archaeological remains, based on an assumption that there are some relevant continuities or parallels between the

present and the past. Direct Historical analogies have been a consistent feature of archaeological interpretation in the Andes, which Julian Steward (1942) championed as the 'Direct Historical Approach'. This is partly justified by the relatively late European colonisation, continuities within some indigenous populations, and local environmental adaptations including the role of local domesticates such as potatoes and llamas. Uhle (1903) used observations of contemporary behaviour in the Bolivian highlands to interpret archaeological material at Pachacamac (Peru) (Ramón 2008: 27), Bandelier (1910) utilised observations of local Aymara people to interpret excavated remains on the islands of Titicaca and Koati (Bolivia), and the Peruvian archaeologist Julio Tello drew upon the experiences of his youth and conducted his own ethnographic research to interpret archaeological remains and iconography. Each of these investigators used ethnographic observations to interpret artefacts (formal analogies) and combined these with historical records to interpret how the sites they were investigating functioned within the Inca state. The use of local analogies for the formal identification of artefacts and the interpretation of larger scale social institutions remains a common feature of Andean archaeology. This raises a persistent and vexing question of archaeological theory: How can we assess the relevance of an analogy? Analogies always compare two different situations (Wylie 1985). For direct historical analogies we can ask: What is the geographical and temporal distance between the archaeological context and the ethnographic analogy, and how social and environmental changes may have changed the activity? Thus forcing us to identify and discuss pertinent differences between the present day analogy and the archaeological material as well describing the similarities. Exploring the relationship between various modern referents and the archaeological materials can help to identify relevant parallels between the present and the past as well as identifying differences that better reveal the particularities of each society.

A primary aim of ethnoarchaeology in the 1960s and 70s was to avoid simply assuming cultural continuity and try to determine more detailed grounds for cross-cultural interpretation, such as identifying predictable aspects of human behaviour linked to material and environmental conditions (Binford 1978, 1977, Schiffer 1976). Rather than archaeologists choosing their 'favourite' analogy, ethnoarchaeology aspired to achieve a more systematic comparison of archaeological and ethnographic data through detailed actualistic studies that observed the material correlates of specific activities and processes within living societies. Researchers working in the Andes undertook early examples of ethnoarchaeology, such as the influential studies on the organisation of pottery production by

Donnan (1971) and Arnold (1975), recording material aspects of present day activities to compare with archaeological remains. But where Donnan was describing marks that potters used to identify their pots within communal firings in order to justify a very local interpretation about the role of itinerant potters, Arnold was developing broader generalisations that could be applied cross-culturally. Arnold (1985) went on to develop a general theory that considered how the distance to collect raw materials, the investment in production facilities and techniques could be related to environmental conditions and the scale of demand.

‘Ethnoarchaeology is neither a theory nor a method’ (David and Kramer 2001, 2) and we only distinguish an ethnoarchaeological study from any other ethnography by the fact that it explicitly addresses archaeological concepts. Almost any ethnography can inform archaeological interpretation, but its relevance is only made clear by making interpretative links between archaeological data and the examples or concepts reported by the ethnographer. There has been little published debate about the fieldwork methods or recording systems that should be used by ethnoarchaeologists. In practice most researchers adopt the methods of ethnographers and primarily describe the activities they observe with the supplement of photographs and sketch plans. Very few ethnoarchaeological studies use the precise 3D planning, detailed artefact recording, quantification and materials analysis techniques that we would expect from an archaeological excavation. There are good reasons for this. While archaeological recording methods may be required to address some issues, they tend to be intrusive and disruptive to the continuity of daily practice and interfere with understanding the social context that is at the heart of ethnographic work. An individual ethnographer can be a ‘participant observer’ who learns not only about the physical evidence of an activity, but also how it relates to other activities and cultural values including how it is understood by different participants. While an archaeological experiment may be designed to test our assumptions by controlling specific variables, ethnographic situations are not ‘controlled’. Conducting ethnoarchaeological research can be frustrating as the people we work with get on with other demands on their time or talk about a myriad of things that we did not intend to study; we may even be told that the focus of our study is misplaced or unacceptable. That is precisely how we learn about the social significance of activities, the complex chains of interdependent activities, and the economic and political reality within which people live. Keeping ethnoarchaeological field methods relatively simple has huge benefits, although some questions (such as studies of site formation, taphonomic processes,

or high temperature technologies) may benefit from more intrusive methods of spatial recording or more detailed materials analysis.

Ethnographic studies take place at a particular time and place, and it is very difficult to judge how long-term practices relate to current conditions based on a short-term visit.

Ethnographers gain a better understanding of the dynamics of social change through repeated visits, with input from diverse members of the community, comparing material practice to ideals expressed in conversation, and observing process of change. Another approach is to conduct regional surveys that compare and contrast how similar activities are affected by distinct social and economic circumstances and thus evaluate differences across environmental areas, ethnic and linguistic groups or socio-political conditions (see below).

Ethnoarchaeological studies can sometimes be criticised for selecting study locations that fit with the image of the past society that the researcher wished to study. In the 70s and 80s this approach helped to justify assumptions that universal technical and environmental factors were the primary constraints on past societies. But, by the 1990s a rising awareness of indigenous rights made it increasingly awkward to observe and record living people's activities for the express purpose of interpreting ancient material remains, revealing the racism of a social evolutionary perspective which implied that the study group was selected to represent some 'primitive' aspect of past societies. This is what Gosden (1999, 9) is critiquing as immoral, however, Politis (2002:63-4) refuted that statement by pointing out that ethnoarchaeology is no more, or less, prone to colonial or racist attitudes than other aspects of ethnography and archaeology and many ethnoarchaeologists have directly engaged with the post-colonial critique. As ethnoarchaeologists we need to be vigilant against projecting our own stereotype of what we consider to be archaic practices, and it is essential that we start by trying to understand how the practice relates to current concerns. An essential aspect of this is to consider how nation states, market economies and globalisation influence current situations; this is not a question of trying to remove 'modern contaminants' from our analogies, but rather to consider the degree to which larger-scale social and economic institutions influence the activities we are studying in the present (and the degree to which similar or different social institutions were influential in the past).

Recently, a technology of the Ancient Andes that was considered 'long-dead' by scholars was found to be still in active use. Van Buren and Mills (2005) identified a metalworker in Porco

(Bolivia) using a *huayrachina* (wind-furnace) to smelt lead and undertake silver cupellation. *Huayrachinas* were used in the late prehistoric and early colonial period but it had been assumed the use and knowledge of this technology had ceased, so this opportunity to record a metalworker's methods provided great insights. To contextualise current practice, Van Buren and Cohen (2010) compared archaeological and ethnographic materials to explore how craftspeople had responded to changing economic and social circumstances over the last 500 years. This helped to explain why the marginalised context of the clandestine use of *huayrachinas* today (sometimes smelting ore robbed from corporate mines) was very different to its use for silver production within the Inka State. Comparing the modern and the ancient examples permitted a more nuanced analysis of distinctive aspects of how the technology was used in relation to the social and economic circumstances of historical actors.

The rise of Anglo-American ethnoarchaeology in the 60s and 70s is sometimes explained as archaeologists reacting to contemporary changes in anthropological theory. Ethnographers were moving away from the historical particularism of Boas and functionalism of Malinowski towards neo-evolutionary and structuralist approaches which usually put less emphasis on the systematic recording of material culture. Archaeologists responded by filling this gap with their own ethnographic studies, directed at topics of current archaeological interest such as site-formation, hunter-gatherers and craft production. During the 1980s 'mainstream' anthropological research returned to studying material culture as a significant area of research, with ethnographic studies of social practices, identity formation and change at local and global levels based on an analysis of artefacts, buildings, and techniques (e.g. Douglas and Isherwood 1981, Appadurai 1986, Lemmonier 1986, Miller 1987). As long ago as 1986 Ian Hodder asked:

"Should ethnoarchaeology not disappear, to be replaced by or integrated with the anthropology of material culture and social change?" (Hodder 1986, 104)

A rejoinder to Hodder's question could point out that few anthropologists are likely to investigate issues such as depositional practices and site formation, and thus ethnographic studies dedicated to help the interpretation of archaeological remains still have a specific role. But, disciplinary boundaries have blurred and material culture studies undertaken by ethnographers, archaeologists, sociologists or geographers are of inter-disciplinary interest.

Researchers working with Amazonian hunter-gatherers (e.g. Politis 2007, Yu 2015) continue to publish 'ethnoarchaeological' work, and Gustavo Politis (2015) provides an excellent discussion of ethnoarchaeology in South America. However, relatively few researchers working in the Andes today refer to their work as ethnoarchaeology (the last volume on Andean ethnoarchaeology was Kuznar 2001), and many of those who consciously combine ethnographic and archaeological studies are at pains to highlight social and economic changes that complicate direct analogies from present to pre-Hispanic periods (e.g. Dransart 2002, 167). Nonetheless there is a considerable body of ethnographic work focusing on the role of material culture that is published in relation to archaeological debates. Rather than worrying about the permeable and shifting boundaries between academic disciplines and sub-disciplines, we will draw on some of these Andean ethnographic studies to discuss recent work on craft production, but first it is useful to reflect on how ethnographic analogies are used in Andean Archaeology.

Using the present to interpret the past in the Andes

Ethnographers working in the Andes have always had a strong focus on the role of material culture, and this continued throughout the 1960s to the 1880s when many 'classic' ethnographic monographs of the Andes provided graphic details of material culture in relation to aspects of social organisation (e.g. Stein 1961, Doughty 1968, Brush 1977, Bastien 1978, Gade 1975, Isbell 1978, Flores Ochoa 1979, Urton 1981, Skar 1982, Sallnow 1987, Allen 1988, Valderrama and Escalante 1992). Under the left-wing governments and *indigenismo* movement in Bolivia and Perú during the 1960s and 70s there was also a strong political focus on recording and celebrating popular culture, including agricultural activities and craft production. A number of anthropologically informed studies of historical documents focused on reconstructing the social organisation and economy of the Andean region in the immediately pre-Hispanic era (e.g. Zuidema 1964, 1973, Murra 1972, 1980, Rostworowski 1977, 1978, 1988, 1989, Salomon 1987, 1991). Indeed some of the earliest colonial texts, which became the primary sources for reconstructing Inca and early Colonial history, include detailed descriptions of agriculture, herding, crafts and religious practice that are continually cited by archaeologists and historians (e.g. Guman Poma [1615] 1988, Cobo [1653] 1988, Garcilaso [1612] 1989). Andean archaeologists were not alone in their interest in material culture, with many anthropologists, sociologists and historians sharing this research interest. A close integration of ethnography, history and archaeology is expressed

from John Rowe's seminal works on Inca culture (1944, 1946) through Craig Morris's archaeological research at Huánuco Pampa (Morris 1978, Morris and Thompson 1985) and Ramiro Matos (1994) at Pumpu, to Gary Urton's (2003) work on the structure and function of Inca *kipus*, as well as seminal works on Andean technology such as Lechtman and Soldi (1981) and Ravines (1978).

Most archaeological publications on the Andean highlands reference one or more ethnographies from the region in support of their interpretation of archaeological data (but are much less likely to cite ethnoarchaeological studies from Africa or Asia). There are also major aspects of Andean social organisation, 'institutional analogies' that are sometimes assumed to be widespread and long-lived features including: ecological complementarity such as Murra's (1972) model of 'vertical archipelagos' where ethnic groups located small colonies of workers in distant locations to gain control of environmental resources, nested forms of dualistic social organisation which included bi-partite communities and highland-lowland relations (e.g. Skar 1982), labour exchange mediated through the provision of *chicha* beer (e.g. Isbell 1978), and a belief that the land is animate and could be engaged with through the provision of offerings (e.g. Bastien 1978). A further influence is that archaeologists themselves often work with indigenous groups and community members as part of the excavation team allowing the archaeologists to gain a familiarity with local subsistence activities and festivities that rivals some ethnographers. This is illustrated by Ann Kendall's work on Inca settlement planning and agricultural infrastructure which led to subsequent work to rehabilitate terracing and irrigation (Kendall 1997, 2005). Given that many of us were brought up in middle-class, urban, western societies it is not surprising that we turn to our experience of Andean rural life to help interpret the material remains of Andean archaeology. The situation is a little bit different in the case of archaeologists such as Matos (1994), Ravines (1971), and Valdez (1997) who were born or raised in the Peruvian highlands and became familiar with local herding and agricultural tasks as well as weaving and pottery making before they became archaeologists. These Peruvian archaeologists often ascribed functions and names to archaeological pottery vessels based on their personal experience, which can be contrasted to foreign archaeologists who tended to be more explicit about such an interpretative step. For instance, in 1915 Bingham wrongly interpreted an Inca pottery form from his excavations in Machu Picchu as a brazier, whereas in 1934 Valcárcel, recognised it as a *callana* used to toast maize and beans (Ramón 2008: 222, n. 28).

However...

"Intense contact with a particular contemporary lifeway can result in a potentially dangerous identification with that lifeway - an archaeological version of one of the traditional *bêtes noires* of the ethnologist; 'going native' and losing analytical perspective - so that one is tempted to impose the ethnographically familiar lifeway on the archaeological remains without further scrutiny." (Watson 1979, 286-7)

The assumption that Andean cultures have a widespread set of fundamental and traditional features was promoted from an academic viewpoint by Wendell Bennet (1948) who developed the idea of a broad 'Peruvian Co-tradition', and by the Peruvian archaeologist and politician, Tello, who was a member of one specific branch of the *indigenismo* movement which promoted the role of archaeology and valuing indigenous culture to foster national identity, disregarding regional differences (Ramón 2014:63, 69-71). However, the application of a unified model across the Andes without sufficient concern to assess economic, socio-political and historical variations across time and space has been characterised and critiqued as '*Lo Andino*'. In spite of some continuities in Andean material practice and social organisation, radical cultural, economic, religious, environmental and population changes over the last 500 years, and millennia before that, means that we cannot just assume continuities from prehistory to the present and that we also need to pay more attention to regional variations. Many researchers (e.g. Cahill 1990, Van Buren 1996, Estenssoro 2003:324 n.29) have pointed out that an uncritical assumption of stable cultural values imposes an essentialism and timelessness that removes Andean peoples from the flow of history and ignores significant regional variations. Even if an archaeological artefact had the same technical function as a modern analogy we need to assess the changing social context of such apparent continuities. For instance Hayashida (2009) explored brewing practices and identifies significant changes during the last 500 years that relate to the developing commercial and social role of *chicha* beer in society as well as significant regional variations.

An article that brought these issues to the fore was Orin Starn's (1991) highly critical rebuke of Andean ethnographers, particularly those with a structuralist approach, for assuming they were observing 'tradition' rather than seeking to identify the current political context and processes of change. The primary example used by Starn was Billie Jean Isbell's (1978) ethnography *To Defend Ourselves: Ecology and Ritual in an Andean Village*. Starn critiqued

Isbell for failing to notice the circumstances which lead to the emergence of *Sendero Luminoso* (the ‘Shining Path’ Maoist guerrilla movement which started its actions in Chuschi, Ayacucho, precisely the region of Isbell’s study). Isbell’s study fell in the period after General Velasco’s agrarian reform (which redistributed land from large haciendas to create community lands) and before the military backlash against *Sendero Luminoso* under Alberto Fujimori (Sendón 2006). Placing Isbell’s work within this specific locality and historic moment helps to show how some aspects of the structure and practice of ‘the village’ were influenced by larger scale political and economic forces. Although Starn’s criticism was primarily directed at ethnographers, this is also a problem for ethnoarchaeologists who seek to isolate traditional practices without considering their present day social, political and economic context. For instance, Deere (1990) cautioned against presenting a reliance on reciprocal exchange of labour and produce as “traditional”, when contemporary instability in Andean national economies impoverished and marginalised highland farmers forcing them into a barter economy. Many of the forms of barter and labour exchange which Sillar (2000a) documented in the Department of Cuzco the 1980s and early 90s took place in relation to this economic instability and have since been largely abandoned as up-turns in the Peruvian economy facilitated more consistent paid labour and allowed many to abandon ‘traditional’ agro-pastoral and craft activities and take up professional careers. There are important continuities in the material practices of Andean society that can justify direct historical analogies, but we must consider the social and economic circumstances that facilitate such continuities (or revivals) and use archaeological research to assess when such practices emerged.

A significant area of debate has been over the form and continuity of local social institutions, for instance Andean ethnographers, including Nuñez del Prado (1957), Bastien (1978) and Billie Jean Isbell (1978) have discussed how South-Central Andean communities are organized as *ayllus* with nested hierarchies of dualistic social organisation within which kinship obligations play a central role. William Isbell (1997) tried to identify archaeological markers for *ayllus*, arguing that the kin-based social structures were related to ancestor worship and the use of above ground funeral structures (*chullpas*), which led him to argue that *ayllus* began to emerge as a localised reaction to wider state formation around 200AD. Although it should be noted that in the villages where *ayllus* have been documented, which are the primary analogy for this archaeological model, the dead are buried in modern cemeteries (rather than *chullpas*). William Isbell (1996) has also countered assumptions that

ethnographically recorded forms of labour exchange, *ayni*, were common in prehistory, by showing that the much larger sized households seen in many archaeological sites would provide more labour power which would make the *ayni* labour exchange between the households of nuclear families less relevant in the past. These examples move beyond asserting the existence of an ethnographic example of institutional analogy to try to identify material evidence for the historical circumstances within which social institutions could emerge and change.

Production techniques and the organisation of craft production

Andean ethnographic studies have made a significant contribution to the advance of widely referenced models for the organisation of craft production (e.g. Arnold 1985, Costin 1991, 2000). Pottery production has been a major focus of our research in southern Perú (Ramón) and North-central Perú and Bolivia (Sillar) so, in the following section, we discuss studies of pottery production from our study regions as examples of the contribution ethnographic studies have been making to archaeological research themes.

Ethnographic research on Peruvian pottery production includes the pioneering work by Brüning (1898) who described the work and organisation of itinerant potters from the collection of their raw materials to the firing. Max Uhle (1903, 1922) also used ethnography to help explain and interpret archaeological remains; as a skilled ethnographer, Uhle presented a map on the distribution of pottery production techniques at the *International Congress of Americanists*, which Linné (1925:89) mentions in his macro-regional comparison of production techniques. The Peruvian sociologist Castro Pozo (1924) wrote a study on Central and Northern Peruvian communities, including important information on villages with potters. The Peruvian archaeologist Tello (1938) used a study of ethnographic techniques from Cuzco, Huarochirí and Ancash to try to explain the manufacturing technique of Moche stirrup vessels from northern coastal Peru. These early researchers pioneered a comparative approach, which showed the potential systematizing ethnographic information from different areas of the Andes to help explain precolonial material.

There have been many good descriptions of ethnographic pottery production techniques by archaeologists such as Tschopik (1950); Ravines (1964, 1966); Christensen (1955) and

Lavalleé (1967). At the same time ethnographers were also undertaking pottery production studies including Espejo (1951); Respaldiza (1953) and Spahni (1966) who presented distinct studies on Mangallpa in Cajamarca, Simbilá in Piura, Quinoa in Ayacucho, Checca in Puno and Paucocha in Loreto. The use of detailed sequences of pictures (or drawings) to illustrate distinct steps in the manufacturing process, which we would now consider to illustrate aspects of the *chaîne opératoire*, were pioneered by Quiroz (1986) in the 1950s, and continued by Ravines (1966, Ravines and Villiger 1989:145-8) and O'Neal (1976). The archaeologist Collier (1959) continued the work on defining regional technical traditions of pottery styles by comparing two groups of potters from the north coast (Mórrope and Simbilá), highlighting how production techniques related to the use of tools such as wooden paddles and stone anvils (cf. Cleland and Shimada 1998). The left-wing military regime of Juan Velasco (1968-1975) encouraged the documentation of craft production and displays of popular culture within national museums. In 1973-4 the Museum of Art and History at San Marcos University sponsored Celia Bustamante and team to study potters from Cajamarca and Puno. Around the same time a second team directed by Sabogal Wiese, produced an extensive report on handicrafts in the Andes which was published by SINAMOS, an official agency of the military government (Sabogal et al 1974-5). José Sabogal Wiese was an agronomist who expanded the ethnographic research of his father (Sabogal Dieguez, an important Peruvian painter who also promoted and studied popular art) by conducting regional studies of pottery production and forming techniques (Sabogal 1978, 1982) and proposed an early typology of the organisation of pottery production and distribution systems (Sabogal 1977, 1987). Within this comparative approach, the archaeologist Rogger Ravines (1971) developed a chart of sixty villages with potters in the Peruvian Amazonia and Highlands distinguishing features such as the gender of the artisans and production techniques. Addressing many of the questions that Charles Kolb (1976) later published as important topics for the investigation of how pottery production relates to social and economic organisation. While the Polish ethnographer Krzanowska (1983) developed a chart (and a map) of 63 villages with potters and used a literature review to compare production techniques in different locations. Krzanowska and O'Neal were followed by several other female scholars, e.g. Camino (1982), Chávez (1987, 1992), Hagstrum (1988, 1989) and Hosler (1996) who provided some of the most detailed studies of village level pottery production. Scholars associated with the *Seminario de Historia Rural Andina*, directed by Macera also undertook pottery studies: the archaeologist Morales (1981) and the ethnographers Echeandía (1982) and Quiroz (1981, 1986), combining archaeology, history,

and ethnography in a similar manner to the earlier work of Tschopik. Thus, the 1960s to '80s were characterised by extensive ethnographic research into craft production and technology undertaken by scholars from a wider range of disciplines, within which specific ethnoarchaeological studies were only a small component. Together they placed pottery making techniques within specific social and economic settings and provided the basis for regional comparisons.

Dean Arnold started his PhD research in Quinua, Ayacucho in 1967 but soon realised that pottery was not being produced as he had unfortunately timed his stay during the rainy season (Arnold 1993: xxiv). This is a good example of how ethnographic frustration can contribute to research insights, as his reflections on the seasonality of part-time pottery production contributed to his work on ceramic ecology and how environmental conditions contribute to the economic organisation and scale of production (Arnold 1985). Arnold (1975, 1993) suggested that unlike modern part-time potters living on the marginal land of Quinua the high quality design and firing of pottery found in the nearby imperial capital of Wari (c. 600-1000 AD) was more likely to have been made by full-time potters. Valdez (1997) has questioned whether archaeological evidence can demonstrate full-time production at Wari, and he highlights how modern Quinua pottery production now focuses on making models of churches and animals for urban and tourist markets. These are themes that Arnold has addressed more fully in his Maya research where he has shown that the time commitment potters make to their craft varies in relation to other social and economic commitments as well as changes in market demand, suggesting that measures of output, technological investment and use of space are more applicable ways of assessing the degree of craft specialisation (Arnold 2015, 285-6). Arnold (1972) also compared the 'etic' materials analysis of clays with local 'emic' descriptive taxonomies to show how the physical characteristics of clay relate to distinctive uses. This pioneered the approach also seen in Van Buren and Cohen's (2010) work on the *huayrachina* smelters using detailed material analytical methods on ethnographic material to compare with archaeological samples. Druc's ethnographic work in Ancash, Conchucos (Druc 1996, 2001, 2005) and Cajamarca (Druc 2011) has also largely focused on describing modern potters collection and processing of raw materials which she combined with detailed laboratory analysis (Druc and Chávez 2014). This has contributed to her research into the distribution of archaeological ceramics (Druc 1998) and informed her reference books and identification manuals for the description and interpretation of pottery fabrics. Working with modern artisans to inform and illustrate

the correct identification of archaeological materials is an important role for ethnographic research that can be under-valued if we focus too strongly on theoretical contributions or social models. Roddick and Klarich's (2012) research into pottery making in the Titicaca Basin has also been informed by materials analysis that compared samples from ethnographic observations of raw material acquisition and processing with archaeological materials.

Ramón, who was originally trained by Camino, started by working with potters in Santo Domingo de los Olleros, Lima (Ramón 1999), before carrying out a regional study across northern Peruvian Andes (departments of Ancash, Cajamarca, La Libertad, Lambayeque, and Piura) visiting circa fifty villages with potters (Ramón 2008, 2013a, 2013b, Andrade and Ramón 2014). Ramón has mostly focused on characterising and comparing manufacturing techniques, but he and Bell have also studied the relation between production and distribution (Bell 2007, Ramón and Bell 2013) and itinerant production (Ramón 2013b). He has also highlighted more formal analogies for the identification of pottery toolkits in relation to variations in paddle and anvil, mold and coiling techniques (Ramón's 2008, 2013a). This can be compared to Rivera's (2014) discussion of how spinning and weaving tools relate to specific weaving techniques, these studies provide one of the clearest areas for direct historical analogy, contributing to the broader research question of the degree to which some production techniques depend on specific tools whereas others offer a greater affordance to the shape and size of tools that can be used.

Sillar (2000a) compared the steps in pottery production processes in several communities of southern Cuzco (Peru) and the departments of Cochabamba and Potosí, (Bolivia) to identify commonalities and differences in the manufacture trade and use of pottery in relation to household organisation. The regional approach in Ramón and Sillar has helped to clarify intra-Andean variability in pottery production, for instance in the south and central Andes potters tend to form the pot on a plate that they can rotate during production, whereas to the north of Ancash there is a greater use of single and double moulds (horizontal and vertical) and paddle and anvil forming techniques. These broad regional technical traditions are complemented by community level specializations where several pottery making families produce similar forms and styles (Sillar 2000a), with a further dynamic as individual potters adapt and borrow techniques (Sillar 1997). There is a growing interest in reporting transcripts of local testimonies, such as Druc's (2001) review of potter's discussions of *shashal*, a raw material used in Ancash and La Libertad. The inclusion of the potter's, or the users of pottery, voices and reproduction of complete interviews (e.g. Farfán 1949, Respaldiza 1953, Sosa 1984, *Biblioteca Campesina*

1994 and Ramón 2013a: 145-167) facilitates a consideration of indigenous terminology as well as the social context and descriptions used by the artisans.

A significant contribution that has been explored through ethnographic research is the interrelationship between various agricultural, herding and craft practices through seasonal cycles and cross-craft complementarity (Sillar 1996, 2010, Dransart 2002, García 2001, Andrade and Ramón 2014). For instance Cleland and Shimada (1998) studied pottery production on the Peruvian coast to show how agricultural and fishing activities can mask evidence of pottery making in domestic space. García Roselló (2008) shows how wider social, economic and ideological concerns inform choices in pottery making in various Chilean communities and affects the spatial organization of the household, and Sillar showed how part-time household based pottery production related to the seasonal organisation of labour obligations (Sillar 2010) and a patchwork of communities making distinct craft products that were integrated through diverse exchange mechanisms (Sillar 1997, 2000a). Llamas caravans were the only mechanism to aid human transport in the pre-Columbian Andes, forming an important component of Andean exchange systems, and various ethnoarchaeological studies have investigated herding practices (Flannery *et al* 1989) and llama caravans (Nuñez and Dillehay 1995, Yacobaccio *et al* 1998, Nielsen 2001, Lecoq 1987), including their role in itinerant pottery production (Sillar 2000a, Ramón 2013a). Camelid fleece was not only essential for textile production (Arnold and Dransart 2014) but llama dung also provided one of the major fuels used in pottery firing (Sillar 2000b) highlighting how quite distinct craft products may be dependent on wider herding or agricultural practices.

Another important area of research is a better understanding of pottery use. Sillar (2000a) provides a discussion of how different pottery forms are used in relation to a range of culinary, feasting and ritual activities, influencing the range of pots within each household. There have also been a number of studies that look at pottery use in the preparation and serving of *chicha* beer (e.g. Camino 1987, Cutler and Cárdenas 1981, Sillar 2000a, Hayashida 2009). A specific area of ethnoarchaeological research has been how taphonomic processes affect the preservation of remains, without which it is difficult to put the function of archaeological pottery in context (DeBoer and Lathrap 1979). This is particularly relevant for understanding culinary activities and Zeidler (1983) highlights how food preparation relates to fixed features (such as grinding stones and hearths) which influence the spatial

pattern of deposition, including the location of bone debris (Stahl and Zeidler 1990), and Sikkink (2001) examined domestic agricultural and culinary activities, to evaluate which flora remains were charred and where they were deposited within the household. Here it is useful to mention Yacobaccio and Madero's (2001) comment that models based on observing momentary ethnographic activities need to be tempered by a consideration of how repeated use of a location for a range of more or less intensive activities result in cumulative patterns, so that the comparison to archaeological data requires a combination and averaging of numerous ethnographic examples.

Modern craft production is greatly influenced by Spanish, Colonial and more recent capitalist economic systems, and we need to consider which aspects of recent craft production are most relevant to interpret particular archaeological situations. This is especially true given that research on modern 'household' based production reflects current economic conditions and a bias in how researchers have selected their case studies. Modern households are largely structured around the nuclear family, but Mayer (2002) identifies a number of radical breaks (particularly in the Colonial period) that altered how Andean households were organised, and pre-Hispanic 'households' are likely to have been much more variable (Isbell 1996). Present day forms of household organisation can only represent some aspects of the past, but researching the dynamics of social and economic transformations today can still inform us about how craft production relates to its social and economic context. For instance Colloredo-Mansfield's (1999) study of economic change in Otavalo (Ecuador) showed how the transformation of traditional textile production into a prosperous tourist industry has led to the development of a 'Native middle class' with an influx of new consumer goods, as successful weavers vie to invest in houses that display their status through decisions such as whether 'modernist' cement or 'traditional' tile should be used for the roof (Colloredo-Mansfield 1994). Pablo García's (2015) research in Chinchero (Peru) shows how household workshops that demonstrate weaving techniques to tourists are not the location of any significant cloth production, and in order to satisfy the demand for hand-woven cloth inmates of the prison in Cuzco have been commissioned to weave 'traditional' styles. Studies of the social and economic reasons that drive current decisions to abandon some activities, while maintaining or adapting others, are informative about modern Andean society and relevant to how we study similar changes in the past.

Conclusions

Within Andean scholarship there has been a consistent inter-relationship between ethnography and archaeology. Archaeologists working in the Andes show a strong preference for direct-historical analogies drawn from ethnography and history of the region. We see great strengths in this approach, but we stress that a more critical comparison is facilitated by documenting how material practices relate to current social, economic and political contexts and the need for a fuller consideration of regional variations. Ethnographic research that examines the role of material culture in society remains essential to debates of archaeological method and theory and provides core material for analogies and interpretative models. Few of the studies mentioned above self-identify as ‘ethnoarchaeology’, and most do not provide sufficient quantification, spatial detail or materials analysis for a detailed comparison with the ‘material correlates’ of archaeological remains. We need more detailed quantitative and spatial recording and compositional analysis of ethnographic material, particularly in relation to issues such as site formation and understanding practical technologies. But, the primary benefit of ethnoarchaeology is the opportunity to understand the social context of material actions, which has been a strength of Andean research. The ethnographic studies discussed above not only help mitigate the ethnocentrism of imposing ‘Western’ expectations on the Andean past (Politis 2015) but together they can also counteract the other ‘ethnocentrism’ of assuming that the Andes of the recent past provide a uniform model for more distant pre-Hispanic periods. Ethnography shows the wide intra-Andean variability in the present, suggesting a similar situation for the remote past; it is necessary to pay greater attention to these cultural differences within the Andes. The usefulness of ethnographic studies for archaeology is not simply measured by the degree of similarity between present-day material culture and the archaeological remains, it is also in documenting variations in material practice to facilitate comparison across time and space. Ethnographic studies help archaeologists think more broadly about the original social context of the material remains they are investigating, and combining these with other models (e.g. from experimental, ecological or computational studies) enables us to identify and discuss regional and temporal difference in past and present societies. Ethnographic studies that explain how particular material practices fit within present-day socio-economic settings and cultural values help archaeologists consider which aspects are appropriate analogies for the past. Far from entrenching Andean studies in the stereotypical expectations of ‘*lo Andino*’, these studies offer the best chance of revealing and explaining diversity across the Andes.

We need more research into the historical process by which household composition, domestic equipment or agricultural practices have changed over time; to explain how local decisions to maintain some practices and abandon, or adapt, others relates to wider regional and global changes.

Where Andean studies have had less impact is in the contribution they could be making to cross-cultural comparison. If we start by assuming that the Andean region had unique cultural responses to unique environments it becomes self-fulfilling because it inhibits comparison with other cultural areas. A fuller comparison of how the material practice of the Andes parallels or diverges from other parts of the world will allow Andean studies to make a greater contribution to general theoretical debates. As the bibliography in this article demonstrates, Andean research provides a wide range of ethnographic studies that are an excellent resource for comparative studies. Archaeologists working in the Andes will gain great insights through identifying similarities and differences in the material practice and social organisation reported in ethnographic and ethnoarchaeological studies from other parts of the world – but currently these are not referenced sufficiently in Andean studies. This requires a return to some of the ambitions of comparative anthropology which underwrote New Archaeology, but without reverting to the search for ‘law-like generalisations’. Cross-cultural comparison can facilitate a better understanding of what causes commonalities and variations at a regional and global level.

Bibliography

Allen, C. J. 1988. *The Hold Life Has: Coca and Cultural Identity in an Andean Community*. Washington: Smithsonian Institution Press.

Andrade, L. and G. Ramón. 2014. “Toolkits and cultural lexicon: An ethnographic comparison of pottery and weaving in the Northern Peruvian Andes”, *Indiana* 31: 291-320.

Appadurai A. ed. 1986. *The Social Life of Things: Commodities in Cultural Perspective* Cambridge: Cambridge University Press.

Arnold, D. E. 1972. “Mineralogical analyses of ceramic materials from Quinua, Department of Ayacucho, Peru.” *Archaeometry* 14 (1): 93-101.

Arnold, D. E. 1975. “Ceramic ecology of the Ayacucho Basin Peru: implications for prehistory” *Current Anthropology* 16: 183-194.

- Arnold, D. E. 1985. *Ceramic Theory and Cultural Process*. Cambridge: Cambridge University Press.
- Arnold, D. E. 1993. *Ecology and Ceramic Production in an Andean Community*. Cambridge: Cambridge University Press.
- Arnold, D. E. 2015 *The Evolution of Ceramic Production Organization in a Maya Community* Boulder: University Press of Colorado
- Arnold, D. Y and P. Dransart eds. 2014. *Textiles, Technical Practice and Power in the Andes*. London: Archetype Publications.
- Bandelier, A. 1910. *The Islands of Titicaca and Koati*. New York: Hispanic Society of America.
- Bastien, J. W. 1978. *Mountain of the Condor: Metaphor and Ritual in an Andean Ayllu*. American Ethnological Society Monograph No. 64. St. Paul: West Publishing Co.
- Bell, M. 2007. *Negotiation the Pottery Exchange Landscape*, MS Thesis, Department of Geography, University of Wisconsin.
- Bennet, W. C. 1948. "The Peruvian co-tradition" In: *A Reappraisal of Peruvian Archaeology* edited by W. C. Bennett, Memoirs 4 Society for American Archaeology.
- Biblioteca Andina*. 1994. *Barro Bendito. La Alfarería en la Tradición Cajamarquina*. Cajamarca: Proyecto Enciclopedia Campesina/Asociación para el Desarrollo Rural de Cajamarca.
- Binford L. R. 1978. *Nunamiut Ethnoarchaeology*. New York: Academic Press.
- Binford L. R. ed. 1977. *For Theory Building in Archaeology*. New York: Academic Press.
- Brüning, H. 1898. "Moderne Töpferei del Indianer Perus." *Globus* 74: 259-60.
- Brush, S. 1977 *Mountain, Field, and Family*. Philadelphia: University of Pennsylvania Press.
- Cahill, D. 1990. "History and anthropology in the study of Andean societies." *Bulletin of Latin American Research* 9 (1): 123-132.
- Camino, L. 1982. *Los que Vencieron al Tiempo. Simbilá, Costa Norte. Perfil Etnográfico de un Centro Alfarero*. Piura: Cipca.
- Camino, L. 1987. *Chicha de Maíz: Bebida y Vida del Pueblo Catacaos*. Piura: Cipca.
- Castro Pozo, H. 1924. *Nuestra Comunidad Indígena*. Lima: El Lucero.
- Chávez Mohr, K. L. 1987. "Traditional pottery of Raqch'i, Cuzco, Peru: a preliminary study of its production, distribution and consumption." *Ñawpa Pacha* 22: 161-210.
- Chávez Mohr, K. L. 1992. "The organisation of production and distribution of traditional pottery in South Highland Peru." In *Ceramic Production and Distribution: an*

- Integrated Approach*. edited by G.J. Bey III and C.A. Pool, 49-92. Boulder: Westview Press.
- Christensen, R. 1955. "Una industria moderna de cerámica en Simbilá, cerca de Piura, Perú" *CHIMOR, Boletín del Museo de Arqueología de la Universidad de Trujillo*, 3: 25-32.
- Cleland, K. M. and I. Shimada 1998. "Paletaada Potters: Technology, Production Sphere, and su-culture in Ancient Peru" In *Andean Ceramics: Technology, Organization and Approaches* edited by I. Shimada, 111-150. Masca Research Papers in Science and Archaeology, University of Pennsylvania Museum of Archaeology and Anthropology.
- Cobo, B. [1653] 1988. *History of the Inca Empire: an account of the indians' customs and their origin together with a treatise on Inca legends, history and social institutions*. Translated and edited by R. Hamilton. Austin: University of Texas Press.
- Collier, D. 1959. "Pottery stamping and molding in the North Coast of Peru." *Actas del XXXIII Congreso Internacional de Americanistas* 421-31.
- Colloredo-Mansfield, R. 1999. *The Native Leisure Class: Consumption and Cultural Creativity in the Andes* Chicago: Chicago University Press
- Colloredo-Mansfield, R. 1994. "Architectural Conspicuous Consumption and Economic Change in the Andes." *American Anthropologist* 96 (4): 845-865
- Costin, C. L. 2000. "The use of ethnoarchaeology for the archaeological study of ceramic production" *Journal of Archaeological Method and Theory* 7 (4): 377-403
- Costin C. L. 1991. "Craft Specialization: Issues in defining, documenting, and explaining the organization of Production." *Archaeological Method and Theory* edited by M. Schiffer University of Arizona Press, 3: 1-56.
- Cutler H. C. and M. Cárdenas 1981. "Chicha, una cerveza sudamericana." In *Runakunap Kawsayninkupaq Rurasqankunaqa: La Tecnología en el Mundo Andino*. edited by H. Lechtman and A. M. Soldi Mexico: Universidad Nacional Autónoma de México, 247-259.
- David, N. and C. Kramer eds. 2001. *Ethnoarchaeology in Action* Cambridge: Cambridge University Press
- DeBoer W. R. and D. W. Lathrap 1979. "The making and breaking of Shipibo-Conibo ceramics." In *Ethnoarchaeology: Implications of Ethnography for Archaeology* edited by C. Kramer 102-138. New York: Columbia University Press.
- Deere, C. D. 1990. *Household and Class Relations: Peasants and Landlords in Northern Peru*. Berkeley: University of California Press.

- Donnan C. B. 1971. "Ancient Peruvian potters' marks and their interpretation through ethnographic analogy." *American Antiquity* 36 (4): 439-446.
- Doughty, P. L. 1968. *Huaylas: An Andean District in Search of Progress*. Ithaca: Cornell University Press.
- Douglas, M. and B. Isherwood 1981 *The World of Goods* New York: Basic Books
- Dransart, P. 2002. *Earth, Water, Fleece and Fabric: an Ethnography and Archaeology of Andean Camelid Herding* Routledge: London
- Druc, I. 1996. "De la etnografía hacia la arqueología: aporte de entrevistas con ceramistas de Ancash (Perú) para la caracterización de la cerámica prehispánica." *Bulletin de l'Institut Français d'Etudes Andines* 25:17-41.
- Druc, I. 1998. *Ceramic Production and Distribution in the Chavín Sphere of Influence (North-Central Andes)*. Oxford: British Archaeological Reports International. Series 731
- Druc, I. 2001. "¿Shashl o no shasal? esa es la cuestión. Etnoarqueología cerámica en la zona de Huari, Ancash." *Bulletin de l'Institut Français d'Etudes Andines* 30:157-173.
- Druc, I. 2005. *Producción Cerámica y Etnoarqueología en Conchucos Ancash, Peru* Lima: Instituto Cultural RVNA.
- Druc, I. 2011. "Tradiciones alfareras del valle de Cajamarca y cuenca alta del Jequetepeque, Perú." *Bulletin de l'Institut Français d'Etudes Andines* 40:307-31.
- Druc, I. and L. Chávez. 2014. *Pastas cerámicas en lupa digital: componentes, textura y tecnología*. Blue Mounds: Deep University Press.
- Echeandía, J. 1982. *Alfarería Tradicional en Taricá (Ancash)*. Lima: Seminario de Historia Rural Andina.
- Espejo, J. 1951. "Los alfaeros de Manka Allpa," *El Comercio* December 1st.
- Estenssoro, J. C. 2003. *Del Paganismo a la Santidad. La Incorporación de los Indos del Perú al Catolicismo 1532-1750*. Lima: Instituto Francés de Estudios Andinos/Pontificia Universidad Católica del Perú.
- Farfán, J. 1949. "Colección de textos quechuas del Perú Central [Primera parte]." *Revista del Museo Nacional* 18:121-66.
- Flannery, K. V., J. Marus and R. Reynolds 1989. *Flocks of the Wamani; A Study of Llama Herders on the Punas of Ayacucho, Peru* Academic Press, New York.
- Flores-Ochoa, J. A. 1979. *Pastoralists of the Andes* (Translated by R. Bolton). Philadelphia: Institute for the Study of Human Issues.
- Gade, D. 1975. *Plants, Man and the Land in the Vilcanota Valley of Perú*. The Hague: B.

Junk.

- García Roselló, J. 2008. "Etnoarquología de la producción de cerámica" *Mayurga* 32: 19-328
- García, L. C. 2001. "Women at Work: a present archaeological view of Azul Pampa Herding culture (North West Argentina)" In *Ethnoarchaeology of Andean South America: Contributions to Archaeological Method and Theory* edited by L. A. Kuznar, 202-220, International Monographs in Prehistory Ann Arbor, Michigan
- García, P. 2015. *In the Name of the Tourist: Landscape, Heritage and Social Change in Chinchero* PhD Thesis Department of Social Anthropology, University of St Andrews
- Garcilaso de la Vega [1612] 1989. *Royal commentaries of the Incas and general history of Peru* Translated by H. V. Livermore. Austin: University of Texas Press.
- Gosden, C. 1999. *Anthropology and Archaeology: A Changing Relationship* London: Routledge
- Guaman Poma de Ayala, P. [1584-1615] 1988. *El Primer Nueva Corónica y Buen Gobierno*. Mexico: Siglo Vientiuno editores.
- Hagstrum, M. 1988. "Ceramic production in the central Andes, Peru: an archaeological and ethnographic comparison." In *A pot for all reasons: ceramic ecology revisited* edited by C. C. Kolb and L. M. Lackey, 127-145. Philadelphia: Temple University.
- Hagstrum, M. 1989. *Technological continuity and change: ceramic ethnoarchaeology in the Peruvian Andes*. PhD Thesis. Anthropology Department, UCLA.
- Hayashida, F. 2009. "Chicha Histories: Pre-Hispanic brewing in the Andes and the use of ethnographic and historical analogues." In *Drink, Power, and Society in the Andes* edited by J. Jennings and B. J. Bowser, 232-256, Gainesville: University of Florida. Gainesville.
- Hodder, I. 1986. *Reading the past: current approaches to interpretation in archaeology*. Cambridge: Cambridge University Press.
- Hosler, D. 1996. "Technical choices, social categories and meaning among the Andean potters of Las Ánimas" *Journal of Material Culture* 1 (1): 63-92
- Isbell, B. J. [1978] 1985. *To Defend Ourselves: Ecology and Ritual in an Andean Village*. Prospect Heights, Illinois: Waveland Press.
- Isbell, W. H. 1997. *Mummies and Mortuary Monuments: a postprocessual prehistory of central Andean social organization* Austin: Texas University Press
- Isbell, W. H. 1996. "Household and Ayni in the Andean Past" in: *Journal of the Steward*

- Anthropological Society* 24 (1-2): 249-296.
- Kendall, A. (ed.) 1997. *Arqueología y tecnología indígena en desarrollo rural: Restauración de sistemas agrícolas prehispánicos en la sierra sur, Perú*. Cusco: Amauta / Cusichaca Trust
- Kendall, A. 2005. Applied archaeology: revitalising indigenous agricultural technology within an Andean community *Public Archaeology* 4: 205-221.
- Kolb, C. C. 1976. "The methodology of Latin American ceramic ecology." *El Dorado: Newsletter-Bulletin on South American Anthropology* 1(3), p.44-82.
- Krzanowska, R. 1983. "Peruwianska ceramika ludowa." *Etnografia Polska* XXVII:173-201.
- Kuznar, L. A. ed. 2001. *Ethnoarchaeology of Andean South America: Contributions to Archaeological Method and Theory*. International Monographs in Prehistory. Ann Arbor, Michigan
- Lavallée, D. 1967. "La poterie de Aco (Andes centrales du Pérou)." *Objets et Mondes* 7:103-120.
- Lechtman, H. and A. Soldi eds. 1981. *La Tecnología en el Mundo Andino. Subsistencia y Mensuración*. Vol. 1. México: Universidad Nacional Autónoma de México.
- Lecoq, P. 1987. "Caravanes de lamas, sel et échanges dans une communauté de Potosi, en Bolivie." *Bulletin de l'Institut Français d'Etudes Andines* 16 (3-4): 1-38.
- Lemmonier, P. 1986. "The study of material culture today: towards an anthropology of technical systems." *Journal of Anthropological Archaeology* 5: 147-86.
- Linné, S. 1925. *The Technique of South American Ceramics*. Göteborg: Elanders Boktryckeri aktiebolag.
- Loza, C. 2004. *Itinerarios de Max Uhle en el Altiplano Boliviano: sus libretas de expedición e historia cultural (1893-1896)*. Berlin: Iberoamerikanisches Inst. Preussischer Kulturbesitz.
- Matos, R. 1994. *Pumpu: Centro Administrativo Inca en la Puna de Junín*. Lima: Editoria Horizonte/Banco Central de Reserva del Perú.
- Mayer, E. 2002. *The Articulated Peasant: Household Economies in the Andes*. Westview Press, Boulder
- Miller, D. 1987. *Material Culture and Mass Consumption*. Oxford: Blackwell
- Morales, D. 1981. *Los Alfareros de Huánuco*. Lima: Seminario de Historia Rural Andina.
- Morris, C. 1978. "The archaeological study of Andean exchange systems." In *Social Archaeology: Beyond Subsistence and Dating*. edited by C. Redman, 315-327. New York: Academic Press.

- Morris, C. and D. E. Thompson 1985. *Huánuco Pampa: An Inca city and its hinterland*. London: Thames and Hudson.
- Murra, J. V. 1972. "El 'control vertical' de un máximo de pisos ecológicos en la economía de las sociedades Andinas." In *Vista de la Provincia de Leon de Huanuco en 1562, Tomo II* edited by J.V. Murra, 429-476. Huanuco: Universidad Nacional Hermilio Valdizan.
- Murra, J. V. 1980 [1956]. *The Economic Organization of the Inka State*. Supplement 1 Research in Economic Anthropology. Greenwich, CT: JAT Press.
- Nielsen, A. E. 2001. "Ethnoarchaeological Perspectives on Caravan Trade in the South-Central Andes" in *Ethnoarchaeology of Andean South America: Contributions to Archaeological Method and Theory* edited by L. A. Kuznar, 163-201. Ann Arbor, Michigan: International Monographs in Prehistory
- Núñez del Prado, O. 1957. El hombre y la familia, su matrimonio y organización político-social en Q'ero *Revista Universitaria* (Universidad Nacional del Cuzco) 114: 9-47
- Núñez, L. and T. S. Dillehay. 1995. *Movilidad Giratoria, Armonía Social y Desarrollo en los Andes Meridionales: Patrones de Tráfico e Interacción Económica* Universidad Católica del Norte, Antofagasta, Chile.
- O'Neal, L. 1976 [1935]. "Notes on pottery making in highland Peru". *Ñawpa Pacha* 14: 41-59.
- Peacock, D. P. S. 1982. *Pottery in the Roman World: an Ethnoarchaeological Approach*. Longman: London.
- Politis, G. 2002. "Acerca de la etnoarqueología en América del Sur." *Horizontes Antropológicos* 18: 61-91.
- Politis, G. 2007. *Nukak. Ethnoarchaeology of an Amazonian people*. Left Coast Press, Walnut Creek, CA.
- Politis, G. 2015. "Reflections on Contemporary Ethnoarchaeology" *PYRENAE Journal of Western Mediterranean Prehistory and Antiquity* 46 (1): 41-83
- Quiroz, G. 1981. *La Tradición Alfarera de Santo Domingo de los Olleros*, Lima: Seminario de Historia Rural Andina.
- Quiroz, M. 1986. *El Foto Óleo*. Piura: CIPCA.
- Ramón, G. 1999. "Producción alfarera en Santo Domingo de los Olleros (Huarochirí- Lima)" *Bulletin de l'Institut Français d'Etudes Andines* 28 (2): 215-248.
- Ramón, G. 2008. *Pottery of the Northern Peruvian Andes: A Palimpsest of Technical Styles in Motion* PhD thesis, University of East Anglia, UK

- Ramón, G. 2013a. *Los Alfareros Golondrinos: Productores Itinerantes en los Andes* Lima: Instituto Frances de Estudios Andinos/Sequilao.
- Ramón, G. 2013b. "Las fuentes del estilo. Distribución regional de canteras y técnicas alfareras en Conchucos (Ancash)," *Bulletin de l'Institut Français d'Etudes Andines* 42 (1): 49-90.
- Ramón, G. 2014. *El Neoperuano: Arqueología, Estilo Nacional y Paisaje Urbano en Lima, 1910-1940*. Lima: Municipalidad Metropolitana de Lima/Sequilao.
- Ramón, G. and M. Bell. 2013. "Re-placing plainware: production and distribution of domestic pottery, and the narration of the pre-colonial past in the Peruvian Andes." *Journal of Anthropological Archaeology* 32 (4): 595-613
- Ravines, R. 1964. "Alfarería doméstica en Huaylacucho, departamento de Huancavelica." *Folklore Americano* 11-12: 92-6.
- Ravines, R. 1966. "Caccasiri-pi rurani mankata." *Folklore Americano* 14: 210-22.
- Ravines, R. 1971. *La Alfarería Tardía en el Valle del Mantaro*. Licenciatura Thesis. Archaeología. Universidad Nacional Mayor de San Marcos.
- Ravines, R. ed. 1978. *Tecnología Andina*. Lima: Instituto de Estudios Peruanos.
- Ravines, R. and F. Villiger eds 1989. *La Cerámica Tradicional del Perú*. Lima: Editorial los Pinos E.I.R.L.
- Respaldiza, J. 1953. "Un mito y un cuento de Simbilá." *Folklore Americano* 1:82-100.
- Rivera, C. 2014. "Prehispanic textile production in highland Bolivia: instruments for spinning and weaving processes" in: *Textiles, Technical Practice and Power in the Andes* edited by D. Y. Arnold and P. Dransart, 233-258. London: Archetype Publications.
- Roddick, A. and E. Klarich 2012. "Arcillas and Alfereros: Clay and temper mining practices in the Lake Titicaca Basin." In *Mining and Quarrying in the Ancient Andes: Sociopolitical, Economic and Symbolic Dimensions* edited by N. Tripovich and K. J Vaughn, 99-122. New York: Springer Publishers
- Rostworowski, M. 1977. *Etnia y Sociedad: Costa Peruana Prehispanica*. Lima: Instituto de Estudios Peruanos.
- Rostworowski, M. 1978. *Señoríos Indígenas de Lima y Canta*. Lima: Instituto de Estudios Peruanos.
- Rostworowski, M. 1988. *Historia del Tahuantinsuyu*. Lima: Instituto de Estudios Peruanos.
- Rostworowski, M. 1989. *Costa Peruana Prehispánica*. Lima: Instituto de Estudios Peruanos.
- Rowe, J. H. 1944. *An Introduction to the Archaeology of Cuzco* Papers of the Peabody

- Museum of American Archaeology and Ethnology XXVII:2, Harvard University
- Rowe, J. H. 1946. "Inca culture at the time of the Spanish Conquest." In *Handbook of South American Indians Volume 2: The Andean Civilizations*. edited by J.H. Steward, 183-330. Washington: Smithsonian Institution, Bureau of American Ethnology Bulletin 143.
- Sabogal, J. 1977. "Alfareros golondrions del valle de Jequetepeque." *III Congreso Nacional de Folklore, Víctor Navarro del Aguila*. Lima.
- Sabogal, J. 1978. *Siete Sitios Cerámicos en la Región de Piura*. Lima: Ministerio de Trabajo/Ministerio de Industria.
- Sabogal, J. 1982. *La Cerámica de Piura*. 2 vols. Quito: IAAP.
- Sabogal, J. 1987. *Cerámica Yunga: Estribación Andino Piurana*. Piura: CIPCA.
- Sabogal, J. T. Álvarez, A. Escobar, J. Vildosola and M. Morante. 1975. *Estudio Socio-Económico del Ámbito Cultural*. 3 vols. Lima: SINAMOS.
- Sallnow, M. J. 1987. *Pilgrims of the Andes: Regional Cults in Cusco*. Washington: Smithsonian Institution Press.
- Salomon, F. 1987. *Native Lords of Quito in the Age of the Incas* Cambridge University Press, Cambridge
- Salomon, F. 1991. "Introduction" In *The Huarochirí Manuscript: A testament of Ancient and Colonial Andean Religion* edited by F. Salomon and J. Urioste University of Texas Press, Austin.
- Sosa, G. 1984. *El Barrió Nos Unió: Arte y Tecnología de la Cerámica de Chulucanas, Piura*. With a technical note by L. Camino. Piura: Cipca.
- Schiffer, M. B. 1976. *Behavioural Archaeology*. New York: Academic Press.
- Sendón, P. F. 2006. "Ecología, ritual y parentesco en los Andes: notas a un debate no perimido." *Debate Agrario* 40-41: 273-297.
- Service, E. R. 1962. *Primitive Social Organisation: an Evolutionary Perspective* New York: Random House.
- Service, E. R. and M. D. Sahlins. 1960. *Evolution and Culture*. Ann Arbor, MI: University of Michigan Press
- Sikkink, L. 2001. "Ethnoarchaeology and contemporary domestic economy in the Mantaro Valley in: *Empire and Domestic Economy* edited by T. N. D'Altroy and C. Hastorf, 97-114. Kluwer Academic/Plenum Publishers New York
- Sillar, B. 1996. "The dead and the drying; techniques for transforming people and things in

- the Andes” *Journal of Material Culture* 1 (3): 259-289.
- Sillar, B. 1997. “Reputable pots and disreputable potters: individual and community choice in present-day pottery production and exchange in the Andes.” In *Not so much a pot, more a way of life* edited by C. G. Cumberpatch and P. Blinkhorn, 1-20. Oxford: Oxbow Books Ltd.
- Sillar, B. 2000a. *Shaping Culture: Making Pots and Constructing Households. An Ethnoarchaeological Study of Pottery Production, Trade and Use in the Andes.* Oxford: British Archaeological Reports International Series, 883.
- Sillar, B. 2000b. “Dung by preference: the choice of fuel as an example of how Andean pottery production is embedded within wider technical, social and economic practices.” *Archaeometry* 42 (1): 43-60.
- Sillar, B. 2010. “La saisonnalité des techniques.” *Techniques & Culture* 52-53: 90-119
- Skar, H. O. 1982. *The Warm Valley People: Duality and Land Reform Among the Quechua Indians of Highland Peru* Oslo: Scandinavian University Press.
- Spahni, J. 1966. *La Cerámica Popular del Perú.* Lima: Peruano Suiza.
- Stahl, P. W. and J. A. Zeidler 1990. “Differential bone-refuse accumulation in food-preparation and traffic areas on an early Ecuadorian house floor.” *Latin American Antiquity* 1: 150–169.
- Starn, O. 1991. “Missing the Revolution: Anthropologists and the War in Peru.” *Cultural Anthropology* 6 (1): 63-91.
- Stein, W. 1961. *Hualcan: Life in the highlands of Peru.* Ithaca: Cornell University Press.
- Steward, J. H. 1942. “The direct-historical approach to archaeology” *American Antiquity* 7: 337-43.
- Tello, J. 1938. “Arte antiguo peruano: álbum fotográfico de las principales especies de cerámica muchik existentes en los museos de Lima, primera parte: tecnología y morfología” *Inca* 2: 7-37
- Tschopik, H. 1950. “An Andean ceramic tradition in historical perspective.” *American Antiquity* 15:196-218.
- Uhle, M. 1903. *Pachacamac: Report of the William Pepper M.D. L.D. Peruvian Expedition of 1896* Philadelphia: University of Pennsylvania.
- Uhle, M. 1922. *Fundamentos Étnicos y Arqueológicos de Arica y Tacna* Quito: Imprenta de la Universidad Central
- Urton, G. 1981. *At the crossroads of the earth and the sky: an Andean cosmology.* Austin: Texas University Press.

- Urton, G. 2003. *Signs of the Inca Khipu: Binary Coding in the Andean Knotted-string Records* Austin: Texas University Press.
- Valderrama, R. and C. Escalante. 1992. *Nosotros los humanos. Ñuqanchik Runakuna. Testimonio de los quechuas del siglo XX*. Cuzco: Centro de Estudios Regionales Andinos Bartolomé de las Casas.
- Valdez, L. 1997. "Ecology and ceramic production in an Andean community: a reconsideration of the evidence." *Journal of Anthropological Research* 53: 65-85.
- Van Buren, M. 1996. Rethinking the Vertical Archipelago: Ethnicity, Exchange, and History in the South-Central Andes. *American Anthropologist* 98 (2): 338-351.
- Van Buren, M. and B. Mills 2005. "Huayrachinas and Toco chimbos: Traditional Smelting Technology of the Southern Andes." *Latin American Antiquity* 16 (1): 3-25.
- Van Buren, M. and C. Cohen 2010. "Technological Changes in Silver Production after the Spanish Conquest in Porco, Bolivia." *Boletín del Museo Chileno de Arte Precolombino* 15 (2): 29-46.
- Watson, P. J. 1979. *Archaeological Ethnography in Western Iran*. Viking Fund Publ. 57, Wenner-Gren Found. Tucson: Univ. Ariz. Press
- Wylie, A. 1985. "The reaction against analogy." *Advances in archaeological method and theory* 8: 63-111.
- Yacobaccio, H. D. and C. M. Madero 2001 "Ethnoarchaeology of a Pastoral Settlement on the Andean Plateau: an investigation of archaeological scale" in *Ethnoarchaeology of Andean South America: Contributions to Archaeological Method and Theory* edited by L. A. Kuznar, 84-96. Ann Arbor, Michigan: International Monographs in Prehistory.
- Yacobaccio, H. D., C. M. Madero and M. P. Malmirca 1998 *Etnoarquología de Pastores Surandinos* Buenos Aires: GZC.
- Yu, P.-L. 2015. "Ethnoarchaeology of foraging and the case of vanishing agriculturalists in the Amazon Basin." *Journal of Anthropological Archaeology* 38: 59-66.
- Zeidler, J. A. 1983. "La etnoarqueología de una vivienda Achuar y sus implicaciones arqueológicas." *Miscelánea Antropológica Ecuatoriana* 3: 155-193.
- Zuidema, R. T. 1964. *The Ceque System of Cuzco: The Social Organization of the Capital of the Inca* Leiden: E.J. Brill.
- Zuidema, R. T. 1973. "Kinship and ancestor-cult in three Peruvian Communities: Hernández Príncipe's Account of 1622" *Bulletin de L'Institut Francais des Etudes Andines* 11 (1): 16-33.

Bill Sillar is a Senior Lecturer at the Institute of Archaeology, University College London (UCL) with a research focus on material culture and technology particularly in Andean South America. Bill has conducted ethnographic research, archaeological survey and excavations in Peru and Bolivia. His ethnographic research has included a comparative study of pottery production, trade and use in the Department of Cuzco, Peru and departments of Potosi and Cochabamba, Bolivia, as well as work on building construction and household ritual practice. A project based around Raqchi, Dept. of Cuzco, Peru, aimed to place the modern village within a longer-term understanding of continuity and change in landscape development and the impact of successive expansionist states (Wari, Inka and Spanish). More recently he has been studying changes in the organization of pottery production, stoneworking and monumental architecture in the Cuzco region during the emergence of the Inka Empire.

Gabriel Ramón is Ordinary Professor at the Humanities Department, Pontificia Universidad Católica del Perú. PhD in archaeology (University of East Anglia), MA in urban history (Universidade de São Paulo), and two simultaneous BAs, archaeology (Universidad Nacional Mayor de San Marcos) and history (Pontificia Universidad Católica del Perú). He has published three books: *La muralla y los callejones* (1999), *Los alfareros golondrinos* (2013) and *El neoperuano* (2014).