Africa, South and Southeast Asia and the Pacific

THE CAMBRIDGE WORLD PREHISTORY

VOLUME 1 • Edited by Colin Renfrew & Paul Bahn

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The Cambridge World **Prehistory**

The Cambridge World Prehistory provides a systematic and authoritative examination of the prehistory of every region around the world from the early days of human origins in Africa 2 million years ago to the beginnings of written history, which in some areas started only two centuries ago. Written by a team of leading international scholars, the volumes include both traditional topics and cutting-edge approaches, such as archaeolinguistics and molecular genetics, and examine the essential questions of human development around the world. The volumes are organized geographically, exploring the evolution of hominins and their expansion from Africa, as well as the formation of states and development in each region of different technologies such as seafaring, metallurgy and food production. *The Cambridge World Prehistory* reveals a rich and complex history of the world. It will be an invaluable resource for any student or scholar of archaeology and related disciplines looking to research a particular topic, tradition, region or period within prehistory.

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Volume 1: Africa, South and Southeast Asia and the Pacific

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I. Introduction

1.1 INTRODUCTION

COLIN RENFREW AND PAUL G. BAHN

The Concept of World Prehistory

World prehistory is now recognised as a vast field of human experience. Indeed, it covers by far the greater part of the human story: hundreds of thousands or even millions of years. In comparison, the annals of written history do not extend back as far as six thousand years before the present day.

Fifty years ago, when Grahame Clark in Cambridge first published his *World Prehistory* (Clark 1961), the subject of prehistory had been studied and researched in a systematic and coherent way for just a century. Over that century, from the publication of Charles Darwin's *On the Origin of Species* (Darwin 1859) and the public recognition in that same year of "the antiquity of man" (Lyell 1863; Lubbock 1865), the fossil record for human origins and the worldwide evidence for the origins of civilisation had been impressively documented. Yet it was only with the development of radiocarbon dating in 1949 by Willard Libby (1955), a decade earlier than the publication of Clark's book, that some unified view of the broad sweep of prehistory became possible. For only then could a dating system be established whereby those processes and events could be set in some coherent context across the world. Only then could the development of the human species be assigned to a specific homeland – Africa – and the early outlines of the human story be written. Only then could the sedentary revolution in different parts of the world be set in the context of the climatic changes that made it possible. For then it became possible to view the key social developments that followed, including the rise of state societies, in some coherent perspective on a unified timescale. It was following the emergence of those complex societies or "civilisations", in Sumer and in Egypt, in China, in Mesoamerica, and then more widely, that the transformative technologies of writing developed. With the written records that then became possible, there emerged recorded history and the rich textual narratives today available from every part of the world.

Where fifty years ago the obscure millennia of prehistoric times might seem merely a prelude to the well-illuminated records of the historic past, it is possible today to take a broader view. For the spotlight of history, until the colonial expansions beginning in the 16th century of the Common Era (CE), has shone only in limited areas – on the Classical World of Greece and Rome, in India, in China. Rarely, until the dissemination of printed texts, again in the 16th century CE, has the historical record offered a rich and circumstantial documentation of the human past. Until that timepoint is reached, the historian and the prehistorian both have to rely heavily upon the techniques of archaeology to provide the data necessary for the study and understanding of the human past. For many parts of the world, little more than two centuries have passed since the voyages of Captain Cook and his successors brought literacy and the sometimes doubtful merits of colonial administration to their shores. So, in surveying the broad sweep of human experience, the disciplines of prehistory and of history must work together.

In recent years, it has occasionally been claimed that the term "prehistory" is somehow racist or at least colonialist, in that it implies that oral histories are inferior to written documents. We disagree completely with this view. The invention or adoption of writing systems in different parts of the world over the last few millennia has been largely a matter of chance and serendipity, and in no way ranks different cultures in a hierarchy of intelligence or importance. One could just as easily survey the world of the past using the invention or adoption of the wheel as a significant event around the globe. Nevertheless, the arrival of a writing system constitutes a useful marker when undertaking a broad survey of humankind's past such as we have attempted here. Prehistory ends in the Near East millennia ago and in other parts of the world, such as Polynesia, only a couple of centuries ago, but in comparison with the timespan of human existence, this is a drop in the ocean.

The crucial point is that, once writing appears, the study of the human past has documents to flesh out its story – it becomes history – whereas before the advent of writing, it is archaeology, the study of material culture, that is the primary source of information, with oral traditions in a supporting role for recent periods. However, as this *Cambridge World Prehistory* shows for the first time, the study of linguistics can also play a very important part, while the new field of genetics has rapidly established itself as a vital tool in reconstructing the past. We hope that these volumes, which place equal emphasis on

archaeology, language and genetics, will constitute a significant milestone in the study of prehistory. Thanks to constant major advances in the technology of archaeological investigation, as well as in our ability to extract and analyse genetic material from ancient remains, it is a certainty that when another attempt is made – perhaps in a few decades – to assess our picture of human prehistory, that picture will in some ways have changed immeasurably.

The study of prehistoric archaeology has proliferated so mightily in recent years that no one author can give even an outline account. So it has seemed worthwhile to emulate the classic *Cambridge Ancient History* of half a century ago and to bring together experts who can summarise the prehistoric annals of their own continents. The task is however a greater one than it was fifty years ago. For then the "Ancient World" implied the literate world from which written records were preserved. In reality, this implied mainly the Mediterranean World (with western Asia), since early India, China and Mesoamerica were not adequately included. It is, however, the very democratic feature of world prehistory that it can deal equitably with all the globe. Every part of the world, except perhaps Antarctica, has its place, since every continent has a rich archaeological record that is now undergoing intensive study.

The development of prehistoric studies

Without the disciplines of archaeology, there could be no study of prehistory. Archaeology, the study of the human past on the basis of its material remains, offers the only way of approaching those periods for which no written account is available or from which no written records remain. The development of prehistoric studies therefore lies within the ambit of the emergence of archaeology itself, which can be traced back to the early days of literate society (Schnapp 1996). It was only in the 19th century, however, that what Glyn Daniel (1962) termed *The Idea of Prehistory* developed with clarity. As he showed, it emerged in part from the stratigraphic researches of geologists such as Charles Lyell (1838, 1863). It was in that context that the "antiquity of man" was conclusively demonstrated, and the creationist narrative based upon a literal reading of the Book of Genesis called into question.

In 1833, Paul Tournal, a French pharmacist, divided the last geological period – that of humans – into the historic (going back seven thousand years) and the "antehistoric", of unknown duration. This was the first use of such a term, and the first real linkage of geology and history. The earliest known use of the term "préhistorique" came in a paper by another Frenchman, Gustave d'Eichthal, which was presented to the Paris Ethnological Society in 1843 (d'Eichthal 1845). Soon after, Darwin's evolutionary approach set the evolution of the human species in its wider place in the living world (Darwin 1871).

It was the Danish antiquaries of the early 19th century who first established the Three Age System, allowing chronological divisions to be introduced into the narrative of the early past on the basis of the constituent materials of the artifacts recovered (Daniel 1950). The word "prehistory" itself soon came into common use with the publication of Daniel Wilson's *The Archaeology and Prehistoric Annals of Scotland* (1851) and of John Lubbock's *Prehistoric Times* (1865). Lubbock also divided the Stone Age into the "Palaeolithic" (Old Stone Age), now generally regarded as ending with the onset of the Neothermal Period around 10,000 BCE, and the "Neolithic" (New Stone Age). This term too has continued in use in many areas of the world, being understood today as implying food production and the domestication of plants and animals. The Australian scholar Gordon Childe gave further authoritative expression to that usage with his term the "Neolithic Revolution" (Childe 1936), although in the archaeology of the Americas the term "Archaic" is often preferred to "Palaeolithic" and "Formative" to "Neolithic".

The various research techniques that are now subsumed under the term "archaeological science" have greatly enriched the study of prehistory (see Renfrew & Bahn 2012). As noted later, radiocarbon dating has been the most revolutionary of these techniques in its effects, although it is only one of the chronometric methods that the sciences have made available. In view of their central role, they are briefly reviewed in the next section. Also, the influence of climatic factors upon human affairs has increasingly come to be better understood. Again, this progress is based largely upon scientific methods of dating, and palaeoclimatology is one of the disciplines that sustain prehistoric studies today. It is further considered in the section "The Role of Climate and Climatic Change," following the discussion of chronology.

New approaches

If the major archaeological advance of the mid-20th century was the application of radiometric dating methods, including radiocarbon dating, to the prehistoric past, the great clarification at the turn of the new millennium was offered by the developments of molecular genetics. Its application to the human past in the new discipline of archaeogenetics has already established beyond reasonable doubt the African organs of our species, *Homo sapiens*, and the timing of the out-of-Africa dispersals around sixty thousand years ago (Forster 2004). The subsequent population history is today under intensive study, with abundant new data becoming available. The information derived from the DNA of living human populations is now increasingly being supplemented by ancient DNA derived from human remains uncovered in archaeological excavations. Although the results in many areas are not yet clear and some interpretations are still obscure, the editors agreed that the archaeogenetic evidence is now becoming indispensable to the study of world prehistory. It was therefore decided to commission a chapter for each section of the present work devoted to a specific continent or region where the archaeogenetic evidence for its population history could be discussed.

The other field of research increasingly becoming relevant to the study of world prehistory is archaeolinguistics,

the study of the history and prehistory of the world's languages. At first sight, of course, to speak of the "prehistory" of languages may seem a contradiction in terms, since without writing (on which written history depends) there can be no direct documentation of language. Yet the recognition of the existence of language families carries the implication that there can be relationships between languages that go back to a time before those languages are documented in writing. In the modern world, many communities are in practice defined (and named) on the basis of the language that they speak. Language is often the best indicator of the communal self-recognition that anthropologists term "ethnicity". So this is another strand of evidence that it seems appropriate to emphasise in the *Cambridge World Prehistory*. Here, however, a note of caution is needed. Statistical methods inspired by phylogenetics and comparative biology are increasingly being used to study languages (Pagel 2009; Gray & Renfrew 2006), but they have not yet found widespread acceptance among some historical linguists. Nor have they yet been very widely applied. The editors have felt that a "new synthesis" may be emerging (Renfrew 1991: 3; 2000: 7) among the fields of prehistoric archaeology, molecular genetics (archaeogenetics) and historical linguistics (archaeolinguistics). They have therefore commissioned chapters on the prehistory of languages, insofar as they can be documented or reconstructed, for the various continents. They recognise, however, that the reconstruction of linguistic prehistory is at an early stage and that historical linguists are far from reaching consensus on questions of time depth (McMahon & McMahon 2006). As in the case of archaeogenetics, the chapters written here on archaeolinguistics must be of a tentative nature.

For this reason, this work deliberately avoids seeking to produce some version of a unified synthesis among the three fields, which might well be a premature undertaking. It has seemed more prudent to take together the prehistory with the molecular genetics, and then separately to compare the linguistic with the archaeological evidence. Perhaps by the time of a second edition of this work, some unified synthesis among the three disciplines will have become possible. It still seems a difficult task today.

Various other directions and modes of interpretation have been developed in recent years and the history and theory of prehistoric archaeology are now well-developed fields (Trigger 1989; Hodder 1986; Renfrew 2007). The processual archaeology of the 1960s (or "New Archaeology" as it was then termed) has been followed by the "postprocessual" archaeology of succeeding decades. This in turn has been superseded by the multivocality of the postmodern world. Meanwhile, underlying these philosophical disputes about method has been the emergence of the new political considerations of the postcolonial era and the reevaluation of Marxist archaeology. Aspects of these debates have inevitably influenced the chapters that follow. We view these chapters as a major resource, together offering an impression of the development of prehistoric sciences across the world. The synthesis must lie in the mind of the reader.

The Structure of the Work

It is an inevitable feature of a world survey, such as the *Cambridge World Prehistory*, that it aspires to global coverage. Certainly it has been the intention of the editors that there should be a wide coverage. So, while the key areas for the emergence of state societies or "civilisations" are frequently privileged in synoptic works, it is our hope to be more even-handed in geographical coverage.

One problem, certainly, is the appropriate criterion for inclusion in the work as "prehistory", rather than for exclusion on the grounds that historical sources are fully operating in a particular region at the time under consideration. Clearly literacy did not come to Australia until the time of Captain Cook in the 18th century of the Common Era. Yet literate records began in Mesopotamia and Egypt already in the 4th millennium BCE. So there are inevitable disparities. There are problems also when a territory that could formerly be regarded as "literate" can be seen to have undergone a "dark age" in the succeeding period, during which written records are no longer available.

The approach that we have followed here has been to offer a very concise account for those periods where literate records are available, but when they do not yet offer the wealth of information available for more modern times. So, for Africa, in Chapter 1.17, Salima Ikram offers a summary of Dynastic Egypt, followed by Jacke Phillips with her summary of Classical and Post-Classical Africa. These chapters, like Margarete Pruech's summary of ancient China (Chapter 2.9) and Joan Oates' summary of Akkad (Chapter 3.8), have the purpose of providing some outline narrative for periods that in other areas can still properly be regarded as prehistoric. They avoid the gaps that total exclusion on the grounds of literacy would create. So the inclusion of Georgina Herrmann's chapter on the Post-Classical and Islamic periods in western and central Asia (Chapter 3.15) and Anthony Snodgrass's summary of the Classical World (Chapter 3.27) avoid the formation of seriously damaging lacunae. We have here regarded the Pre-Columbian periods in Central and South America as effectively prehistoric, in view of the paucity of written records in Mexico until the Colonial Period and of the absence of readable texts in Peru, whatever secrets the *quipu* may hold. In effect, this allows the work to create an outline narrative for the world, stopping in the Classical Period in Europe and the equivalent in western Asia. For some other areas, prehistory can be deemed to end with the experience of European colonisation.

After some discussion, it has seemed inevitable that a broadly geographical approach be adopted, which following current understanding of the origins of humankind should begin in Africa. The out-of-Africa expansion of our species then suggests that South and Southeast Asia could come next. Western and central Asia and then Europe and the Mediterranean come last in a deliberate effort to disrupt the precedence that the early development of writing is sometimes thought to confer. For each region, as noted earlier, the evidence from DNA and

from historical linguistics are reviewed. They do not yet often offer a coherent and unified view when brought into contact with the archaeological evidence. But such a synthesis is to be anticipated when the foundations for chronology in the fields of molecular genetics and historical linguistics are more thoroughly explored and understood.

In some areas, for instance, South America, where the archaeological record is rich and the chronology well defined, it is possible to offer quite a tight regional coverage with a number of chronological subdivisions. In others – for instance, in Africa – the periodisation is not so well defined. In each region, a summary of what is known is offered, even for those areas that have been little explored archaeologically. The study of world prehistory is still in its infancy.

Chronology

The crucial significance for prehistory of a reliable timescale, as noted previously, emphasises the importance that the development of radiocarbon dating held for the development of archaeology from the mid-20th century onwards. Its application, however, especially in the early years, was not without its problems. The tree-ring calibration of the radiocarbon timescale held a number of implications, not least the realisation that the accuracy of radiocarbon determinations, over parts of the timescale, is significantly restricted by the presence of "kinks" in the calibration curve that make the resulting calibrated dates less precise than one might have wished.

The measurement of radiocarbon is not, however, the only reliable method available to the prehistoric archaeologist for the determination of the age of samples. Indeed, for time periods before about fifty thousand years ago the concentration of the radiocarbon remaining in ancient samples is too small to be measured effectively, and other chronometric techniques need to be used.

The range of dating techniques made available to archaeology by the natural sciences is now very wide in its scope. Without reviewing them in detail, it may be helpful to indicate some of the principal approaches to the problem of absolute dating. The basic techniques of stratigraphic excavation are fundamental to the establishment of a relative chronology, where sequence can be established with confidence, but cannot lead to any sort of date measured in calendar years. For this, in relation to the prehistoric period, it is necessary to rely upon the techniques of archaeological science.

For the Palaeolithic Period (*i.e.*, before the onset of neothermal conditions some ten thousand years ago), radiocarbon dates can be used back to about 50,000 BP (years before present). Before that time, the quantity of radiocarbon remaining is too small to be measured accurately; but for earlier periods, several other techniques, likewise relying on radiometric clocks, are available. These, like radiocarbon, depend upon the principle of the regularity of the radioactive decay process, but utilise radioactive isotopes with a longer half-life than that of 14C. One of the most widely used is potassium-argon (K-Ar) dating, which is used by geologists to date rocks that are hundreds of millions of years old. It has proved one of the most appropriate techniques to date early human (hominin) sites in Africa, which can be up to 5 million years old. It is restricted to volcanic rock no more recent than around one hundred thousand years old.

It is, however, radiocarbon dating that made possible a truly global view of prehistory. Although its accuracy should not be exaggerated, for no single date can offer a precision of more than fifty years or so, its applicability to any organic material contemporary with the events of the period under consideration gives it a very general relevance.

The Role of Climate and Climatic Change

As we write, Pakistan is suffering the worst flooding in its history, with millions of people rendered homeless. It is a stark reminder that humankind has always been at the mercy of the elements, with extreme weather – drought, floods, storms – affecting populations throughout prehistory as well as history, up to and including the present day. Many examples are to be found throughout these volumes, most notably the sequence of glacial and interglacial episodes during the Pleistocene. In the Sahara Desert (as discussed by Jean-Loïc Le Quellec in Chapter 1.10), even small fluctuations in rainfall had dramatic consequences over time. Dune fields expanded and contracted, and at times no human being could survive in much of North Africa, while at other times the Sahara was home to elephants, rhinos, hippos, crocodiles, ostriches and giraffes, which abound in the region's prehistoric rock art. Lakes came and went, the vegetation and the fauna were modified and the subsistence practices of prehistoric peoples constantly had to adapt to these changing environmental conditions.

Many examples can also be found within these volumes of the effects of cyclical climatic phenomena such as monsoons or the El Niño-Southern Oscillation (ENSO). As has recently been pointed out (Cook *et al.* 2010), the Asian monsoon system affects more than half of humanity worldwide; and a reconstruction of droughts and pluvials over the past millennium, derived from tree-ring chronologies, has revealed the occurrence and severity of the monsoon failures and megadroughts that have repeatedly affected the farming peoples of Asia during that period.

In turn, there can be knock-on effects on society. For instance, in the late 1630s and early 1640s CE, the most serious drought in five centuries afflicted China and seems to have triggered peasant rebellions that led to the fall of the Ming Dynasty in 1644 (*ibid.*: 487). The Late Victorian Great Drought of 1876 to 1878 occurred during one of the most severe El Niño events of the past 150 years, and among its devastating consequences across much of the tropics was a revolt against the French in Vietnam. More than 30 million people are thought to have died from famine worldwide at that time (*ibid.*: 488). It is hardly surprising, therefore, that any major events of this kind in prehistory will have had a major impact on human societies.

Key Themes

The regional coverage that the *Cambridge World Prehistory* sets out to give is undertaken on a geographical basis. This approach, while offering some benefits in potential uniformity of treatment, may at first sight make it difficult to discern any overarching grand narrative. What is the basic story? The reader may find it difficult to formulate a clear answer to that question. Yet it is one of the strengths of the study of prehistory that there is, in fact, no single authoritative story: there are many stories, some yet to be written. The basic evidence is archaeological in character: the data first make their appearance as material objects. They are artifacts, traces of human activity found in a context rich in possibilities for interpretation. But, as the development of prehistoric archaeology clearly shows, such interpretation is generally based upon the interests of the current age, and on the prejudices and preoccupations of the researcher. The interpretation is, moreover, restricted by the analytical and inferential techniques available.

Some outlines for a narrative of world prehistory can already be discerned. But they may differ somewhat from those glimpsed by earlier generations of researchers. In the mid-19th century, students of society sought to find some parallel for the Darwinian evolution of species in a version of social evolution in which notions of "progress" could play a significant role. Even so great a prehistorian as Gordon Childe, inspired by a benign view of Marxist theory, wrote a masterly and optimistic overview, *Man Makes Himself*, in 1936. Disillusioned, he ended his own life twenty years later. In reality, it is for each generation, and perhaps even for each observer, to draw the lessons of history or of prehistory.

It is now possible to outline a series of problems to which the present survey, as set out in these volumes, begins to offer some solutions – or, if that is too bold a claim, at least to contribute data that are relevant. They are presented here as topics under review. Some of these can be concisely expressed as follows:

What was the long-term significance of the expansion out-of-Africa, of *Homo erectus*? The very early dates for hominin occupation in the Caucasus area and the range of fossil finds from Iberia to China offer a rich field of study.

What were the key features in the speciation process of *Homo sapiens*? How do we explain those changes, apparently primarily in Africa, which led in some co-evolutionary process, in which cultural and genetic factors both played their part, to the eventual emergence of our species?

What kinds of cognitively developed behaviour did the Neanderthals (*Homo neanderthalensis*) develop themselves, and what behavioural innovations resulted from their interactions with *Homo sapiens*? It seems clear that aspects of Neanderthal behaviour anticipated some of the innovations of sapient humans. The similarities and the interactions between them remain to be more fully explained.

Seafaring was apparently involved in the human colonisation of Australia. Was this the earliest development of maritime skills, and what other instances can be documented in the Pleistocene Period? Given that very early maritime achievement, have we underestimated the achievements of the early seafarers?

Why was the "creative explosion" of Upper Palaeolithic Franco-Cantabria centred upon Europe, with limited manifestations of such activity during the Pleistocene Period seen in other continents? If the genetic constitution of our species was established in Africa, before the out-of-Africa dispersal, why were these quintessentially human achievements for so long restricted in their geographical scope?

What factors governed the emergence of sedentary societies in the different continents and the origins of food production? This has long been a primary research focus for prehistoric archaeologists. Climatic factors were obviously important. Yet what prompted the wide range of new behaviours that soon followed early sedentism and the first agriculture?

What social formations accompanied the early rise of monumentality and investment in ritual behaviour in the different regions? The early ritual plazas of coastal Peru, the megalithic monuments of northwestern Europe and the early ritual centres of western Asia are far removed from each other spatially. Yet they show new forms of behaviour, including the development of ritual practices, which are remarkably analogous in various ways. Why should that be?

How many independent areas of early metallurgical innovation were there? And what factors favoured their development? It has seemed to some scholars unlikely that the technical practices involved in copper and bronze metallurgy could have occurred more than once in human history. Yet there are suggestions of spontaneous developments in western Asia, in Europe, in the Americas and perhaps in China. How does one best address this problem?

How many early state societies can be regarded as cases of "pristine" state formation? This is, of course, an old debate going back to the early speculations of Lewis Henry Morgan. As so often is the case, much of the argument depends upon the formulations to conceptualise social structure that are used. But even when perhaps simplistic terms such as "civilisation" are abandoned, the question remains. And on present evidence, there were several such developments that occurred in places that may not have been in contact after the first dispersal of our species.

Towards New Problems

The theses and questions briefly considered in the preceding section are very much the product of the preoccupations of the archaeology of the early 21st century. They reflect, perhaps inevitably, a concern with "origins" and with the nature of innovation. They can be investigated at a global level by interrogating the chapters of the present work as systematically set out in the pages that follow. Inevitably, while radiocarbon chronologies are still being established for local and regional culture-sequences, the emphasis has indeed been upon the

East Asia and the Americas

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2.29 ARGENTINA AND CHILE

LIDIA CLARA GARCÍA

The early prehistory of Argentina and Chile has been presented elsewhere (see Chapter 2.16). The later periods are associated with sedentary peoples obtaining food primarily from agriculture or herding, sometimes combined with hunting and gathering and usually also producing ceramics. Late prehistoric cultures of this type, which had major contacts with southern Bolivia and Peru, are known only in northwestern Argentina and adjacent parts of northern Chile. It is these regions, therefore, that are the subject of this chapter.

The Region

Northwestern Argentine archaeology includes the provinces of Jujuy, Salta, Catamarca, La Rioja, Tucumán and Santiago del Estero (see Map 2.29.1). Bennett, Bleiler and Sommer (1948), for practical reasons but also treating them as valid cultural units, synthesised their work with that of many other scholars and organised information into four major sections: north (Jujuy and part of the adjacent northeastern Salta), centre (Salta, Tucumán and north of Catamarca), south (Catamarca, La Rioja, San Juan and the north of Mendoza) and east (Santiago del Estero). We will follow this organisation in our study of the late occupations in this region.

Where ecological zones are concerned, González (1977) subdivided northwestern Argentine archaeology into four regions – Puna, western forests, valleys and gorges – since each of them has its own styles, artistic approaches and techniques. Mendoza, San Juan and San Luis provinces are considered the centre-west (Bárcena 2001). González sees this area as transitional between mainly agriculture-based societies (northwestern Argentina) and guanaco hunter-gatherers (Patagonia). With regard to iconography, he links centre-west Argentina with the northwest. Of course the north section has a particularly important relationship with northern Chile and southern Bolivia.

During the Late Period (1000 BCE onwards), climate did not develop in a uniform way throughout this wide region. A basic sequence for the Atacama altiplano made through multidisciplinary studies, in comparison with the present-day climate, indicates that from c. 6450 to 1050 BCE, extremely dry conditions were established, interrupted by heavy storms. After that period humid conditions increased (Grosjean *et al.* 1995). Markgraf (1985) determined, for Jujuy Province (23–24° S), that present-day conditions were established around 2000 BCE, and found that during the past two thousand years, and especially in the last five hundred, overexploitation can be considered the cause of semi-arid conditions. In the south Puna, in Antofagasta de la Sierra, a study has also found increasingly humid conditions towards 1050 BCE (Olivera, Tchilinguirian & Grana 2004). The same change in the Argentinian Andes between 32° and 35° S was observed by Markgraf (1983).

Archaeological Research and Chronology

Archaeological research in northwestern Argentina started in the late 19th century. By the mid-1930s, the Argentine Society of Anthropology was founded, and promoted research in several anthropological disciplines that were carried out by various national institutions and universities (Podestá 2007).

As mentioned earlier, a synthesis of all the initial archaeological investigation carried out in northwestern Argentina was published in the late 1940s by Yale University (Bennett, Bleiler and Sommer 1948). The authors organised investigations up to that moment into periods (Early, Middle, Late and Inka), based on cultures corresponding to ceramic styles; and they also organized the information into four areas, distinguished on cultural and geographical grounds. They considered that the centre, east and south of northwestern Argentina were quite unified, and comprised a cultural centre in which developments in each subarea were approximately of the same nature. The north had not yet had its time depth established, showing that it did not form part of this unity, and had late affiliations with northern Chile, southern Peru and Bolivia. In general, this scheme is still in use, and forms the basis for the periodisation of late occupations in northwestern Argentina (González & Pérez 1983; Tarragó 2000).

González (1977) worked primarily in the Valley of Hualfín, Catamarca Province, and dated its periods, classifying the cultures and styles into Early or Formative in the southern Andes

MAP 2.29.1. Northwestern Argentina and northern Chile archaeological region with some of the sites and cultures mentioned in the text for the Late periods (since 1000 BCE)

(500 BCE to 650 CE); Middle or Period of Tiwanaku influences (600 to 850 CE); Late or Period of the Flourishing of Regional Cultures (850 to 1480 CE); and Imperial or Inka (1480 to 1535 CE). He stated that different horizons had had different influences in different areas, and that Córdoba and Santiago del Estero Provinces did not show Inka influences, and nor did the Aguada culture.

Other chronologies considered different indicators. Núñez Regueiro (1974), following a Marxist approach, organised the later periods of northwestern Argentina into a Productive stage, divided into the Archaic and Formative (Lower, Middle and Upper); and a Local Developments Period (Lower and Upper). He considered that since 1000 CE there have been sociocultural traditions that show lines of development that can be followed, such as Santa María, Belén, Angualasto or Sanagasta and Humahuaca, in this region.

Raffino (1988) looked at settlement patterns (what he called FOS: Soil Occupation Factor) and organized the information from northwestern Argentina into Lower and Upper Formative, Local Developments, Inka and Hispano-Indigenous periods.

Other scholars use chronological periods in order to discuss processes (Yacobaccio *et al.* 2004), phases based on recent radiocarbon dating and associated materials for cases of local development such as that of Quebrada de Humahuaca, or the classical culture history names, but these are assigned different dates and meanings (Nielsen 1997; Nielsen & Boschi 2007). Some researchers, from an evolutionist perspective, even use the term Late Holocene occupations for the period we are interested in (López 2008).

Not all authors agree about the timespan of each period, especially when reconstructing microregional processes. Moreover, new research results have shown that certain cultures, such as La Aguada, in the Middle Period (centre, south and east sections), continued later in time (into the Regional Integration Period), and overlapped with what in the north section is called the Local Developments Period. Inka occupations have also proved to be earlier than traditionally accepted, while the Early or Formative Period (if we accept the first ceramic sites as evidence) is very extensive. At Humahuaca, for instance, some authors believe that the Early or Formative Period lasted until 900 CE (Olivera & Palma 1997; Nielsen & Boschi 2007). We agree with this position, even though, for microregional processes, blocks of time are very useful for tracing changes.

Many of the archaeological sites and localities in northwestern Argentina are multicomponent. We have thus tried to organise all this diversity in the late occupations into tentative periods for the four sections mentioned earlier. Cultures and sites have been reorganised in accordance with current research results (see Fig. 2.29.1).

Early

The most ancient mummies in the world have been found on the north coast of Chile, from the Archaic Period, before the Late Period, which is the focus of this chapter (Fig. 2.29.2). We mention them and their contexts as part of the complex origin of the later societies in this part of the world. Llagostera (1989) refers to the Camarones Complex (hunting and maritime fishing adaptation), in which the initial Chinchorro mummies are found; but most of them are found in the Quiani Complex. He also explains the history of the finds, the coastal adaptations and their sequence, in relation to other occupations in the region. Complementary subsistence materials, such as plant and camelid fibres, were obtained initially through transhumance, and later on through commerce (for further reference to coastal adaptations, see Chapter 2.23).

B. Arriaza (1995) has presented a thorough study of the natural and artificial Chinchorro mummies, and proposed a sequence from 8000 to 1300 BCE based on radiocarbon dates made directly on them. He describes the evolution in artificial mummification practices: initially, there were only natural ancient mummies, then black-red and red artificial mummies and finally natural specimens again. Arriaza believes that the differences are temporal and not social. Sometimes these mummies were carried to other locations of the living societies that honoured them, when they moved.

The first cultigens have been found in archaic occupations at Inca Cueva Cave 7 (north) c. 3000 BCE (Aschero & Yacobaccio 1998). In the Ansilta culture, San Juan Province, cultigens were found c. 2000 BCE (south), followed by discoveries at Altos Valles Calchaquíes, Salta and Antofagasta de la Sierra, Puna de Catamarca, in the centre region (Lagiglia 2001; Fernández Distel 1974). Domestication of animals has also been traced back to c. 2550 BCE (Yacobaccio & Korstanje 2007).

The earliest occupations with ceramics are found in caves and rock shelters c. 1000 BCE in different sites of the north and south Puna – that is, the north and centre sections on the map. These early sites are Inca Cueva Alero 1 (3700 m asl), Tomayoc (4170 m asl), Cueva de Cristóbal (3750 m asl) and Pintoscayoc (3600 m asl) in Jujuy, to the north and west of Quebrada de Humahuaca; and also Punta de la Peña 11 (3400 m asl), at Antofagasta de la Sierra, Catamarca, which is even earlier. At Inca Cueva Cave 5, early ceramic occupations are dated to 50 BCE. Connections have been claimed with northern Chile in these early periods, basically Tulán 54. They are considered to be complementary to other open-air sites with year-round sedentary settlement (Aschero 2000, 2006; Aschero, Podestá & García 1991; Fernández Distel 1998; García 1988–9, 1998–9; Núñez Atencio 2007; Lavallée *et al.* 1997; Núñez 1994; Núñez *et al.* 2007; Olivera 2001; Olivera & Palma 1997).

A complete synthesis of the Lower Formative (maintaining this term) was made by Olivera (2001), who pointed out that most of the sites date to between 550 BCE and 750 CE.

During this period, in the different sections, the rise of Early occupations displayed some differences. This is a period in which indicators such as ceramics and settlement patterns show that the sedentary life of small communities occupied all the environments in this wide area. People lived basically from agriculture and camelid pastoralism, combined with hunting and gathering, which continued up to later times. The exchange of different kinds of goods, produced or extracted locally, was increased (Gero & Scattolín 1994; Núñez Regueiro 1974;

Periods	Dates	South	Center	East	North
Hispano-Indigenous	1,660 CE				
Inka	1,400–1,550 CE	Angualasto Gualfín Barreal	El Shincal Watungasta Potrero de Payogasta		Rinconada Titiconte Coctaca Rodero Los Amarillos La Huerta
Late	900–1,400 CE	Belén Sanagasta Aimogasta Angualasto	Tastil Santa María or Yocavil Calchaquí Quilmes	Averías	Humahuaca Tilcara Casabindo Doncellas Yavi
Middle	550–900 CE	La Aguada	La Aguada Tafí	Sunchituyoc	Isla
Early	1,000 BCE–550 CE		Las Cuevas Cerro El Dique Tebenquiche Campo Colorado Candelaria		Antumpa El Alfarcito Estancia Grande ICc5 - level I San Francisco
		Saujil	Laguna Blanca Casa Chávez Montículos		Cueva de Cristóbal Pintoscayoc - Upper Layer 5
		El Alamito Condorhuasi	El Alamito Condorhuasi-Ciénaga Tafí Valle del Cajón	Condorhuasi	ICa1 - levels 5 and 6 Tomayoc phase III

FIGURE 2.29.1. Cultures and sites according to sections in northwestern Argentina

Olivera 1991; Raffino 1977; Ratto *et al.* 2009; Sempé de Gómez Llanes 1977; Scattolín *et al.* 2009; Yacobaccio *et al.* 2004).

Open-air sites from this period include those of Antumpa and Estancia Grande in the Humahuaca Valley (north). For the centre section, sites include Las Cuevas and Cerro el Dique at the Quebrada del Toro; Campo Colorado at the Calchaquí Valley; Ciénaga and Condorhuasi, at the Santa María and Hualfín valleys; Tafí in the eponymous valley; El Alamito at Campo del Pucará, Catamarca Province; as well as the Tebenquiche and Valle del Cajón Sites (Albeck 2000; Albeck & Zaburlín 2008; Scattolín *et al.* 2009; Tartusi & Núñez Regueiro 2001).

The first group of occupations mentioned for this Early initial period are all located in rock shelters and caves and are supposed to have developed from early hunter-gatherer economies. They include Tomayoc III, Inca Cueva a 1 (Layers 5 and 6), Cueva de Cristóbal and Pintoscayoc (Upper Layer 5). At these dates (c. 1000 BCE), comparable open-air sites are also found, such as at Chiu-Chiu 200 (Loa, Chile), where the site has been interpreted as part of a basically pastoral economy, with mobility between the Río Salado-Loa in winter and higher altitude summer occupations in the Andes and Puna (Benavente Aninat 1982). In the higher Loa region (Turi-Toconce), some sites such as Turi-2 and Chulqui are considered to be the possible residential basis of permanent or semipermanent occupations. Others, such as Toconce or Chulqui rock shelters, seem to be sites with restricted activities (Aldunate *et al.* 1986). Chilean researchers consider these sites to be related to those of the middle Loa, and this process seems to be the basis for productive consolidation of economies in northern Chile (Núñez 1989). For these early productive stages, Núñez has indicated relations with northwestern Argentine sites like Campo Colorado, including the western forests area (north section), and with southern Bolivian sites, such as Wankarani. It has long been suggested that these groups moved in caravans, linking the sites at both sides of the Andes (Dillehay & Núñez 1988; Núñez & Dillehay 1979; Núñez Atencio 2007).

As for the other known cultures in the south, centre and east sections, many of them were established on the basis of ceramic vessel styles; in many cases no details of settlement patterns are available, and they have been recognised through grave finds or stylistic traits of artifacts recovered after looting, which were later assigned to cultures that were assumed to represent ethnographic identities, and which were organised into sequences that were afterwards fixed through radiocarbon dating of finds. One such case is that of Condorhuasi-Ciénaga: some of the very beautiful Condorhuasi ceramics display anthropomorphous and zoomorphic characters, particularly with feline traits. The Condorhuasi-phase complex of Río Diablo is thought to be the earliest for this sequence, c. 100 to 650 CE. Its settlement pattern is believed to be one of small circular households placed between agricultural lands.

In the south Puna the Saujil culture developed from c. 400 BCE to 850 CE. at the Valle de Abaucán, in an extensive cultural development that shows successive influences by the

FIGURE 2.29.2. A series of Chinchorro mummies together with artifacts such as netting and whalebones sometimes found with them. (Photo by Paul Bahn.)

Condorwasi, Ciénaga and Aguada (see the discussion of the next period), although with specific characteristics.

In the centre section, in the Valley of Tafí, several archaeological sites have been determined as being early herding occupations. One variety of the Tafí ceramics is associated with the Candelaria Tradition of the western forests. Very beautiful stone masks are related to this culture, which also produced menhirs that appeared in the middle of early communal sites. This culture developed from c. 400 BCE to 600 CE.

At Campo del Pucará, in the south section, several settlements of the Alamito culture (related to Condorhuasi and Tafí) are located (200 to 450 CE), which Tartusi and Núñez Regueiro (1993, 2001) consider to be ceremonial sites. Anthropomorphous figures from the Alamito culture are among the most beautiful produced by early cultures of northwestern Argentina, especially the "supplicants".

In the north section, at Quebrada de Humahuaca, there is less evidence of these early cultures, but radiocarbon dates have recently been obtained for Estancia Grande and El Alfarcito, c. 50 BCE. These dates coincide with those of the earliest occupation of Inca Cueva Cave 5, with corrugated ceramics, which is thought to be related to Tulán 54 (Núñez 1994; Núñez Atencio 2007). These corrugated ceramics are also found in the San Francisco drainage, in the western forests, c. 600 BCE (Dougherty 1977). To the northeast of Humahuaca Gorge, the complex site of Antumpa, with a very large occupation history, has also provided an early radiocarbon date (c. 590 CE).

At Antofagasta de la Sierra, in the centre section, Casa Chávez Montículos has been dated to c. 450 BCE, and has also been related to north Chilean occupations. Escola (1990) has followed the routes of obsidian from this moment onwards at different sources, as have Yacobaccio *et al.* (2004). In the dry puna of northwest Catamarca (centre region) to the north of Antofagasta de la Sierra, some sites such as Tebenquiche (Krapovickas 1955) featured a very well developed architecture, covering large areas with households, cemeteries and corrals.

Also in Catamarca, Belén Department (centre-south section), the Laguna Blanca district has been related to the circumpuna occupations in the first millennium CE (Delfino, Espiro & Díaz 2007).

The early evidence from the Las Cuevas village at Quebrada del Toro (c. 550 BCE to 200 CE) shows continuity to the more complex settlement patterns of Cerro El Dique (100 to 400 CE). Herding activity would have been more important for subsistence here in comparison with the valleys to the south (Raffino 1977).

FIGURE 2.29.3. Lithic mask of the Early Period. Ethnography Museum Juan B. Ambrosetti Collection, Faculty of Philosophy and Letters, University of Buenos Aires. Probably mortuary. Note high relief decoration of waving serpents, wrinkle texture and triangular mouth. Height: 29.5 cm.; width: 21 cm. Determined as Early through stylistic approximation (González 1977: 217–25). C. 500 BCE to 650 CE. (Photo by Estanislao Martínez.)

Likewise in the centre region, the Campo Colorado Site has been dated to the beginning of this era, while in the Valle del Cajón research is nowadays producing a great deal of information regarding settlement patterns, agricultural lands and cemeteries, and indicating a relationship with the western forests, the puna region and the valleys region. Radiocarbon dates range from c. 1400 BCE to 700 CE (Scattolín *et al.* 2009).

Extremely diverse cultural manifestations arose and interacted during this huge region and long period, with local developments and high mobility. The early lithic mask presented here (Fig. 2.29.3) may serve to illustrate this period, since it belongs to some of the first cultures mentioned for the centre-south section, even though its exact provenance is not known. González (1977: 219–23), who also presents an illustration of it, mentions that only two dozen of them are known, but in most cases they have been recovered by looters. In only one case, a mask similar to the one shown here was found in a grave with a known early context (Muñíz Barreto Collection, nowadays housed in the Museo de La Plata), but it was unfinished, without the eye and mouth perforations, and those that allowed it to be tied. González considers that it may be a funerary mask, as it is too heavy to be used in ceremonies. Hence this mask, deduced from stylistic analysis, comes from the Hualfín or Gualfín Valley, south section.

Middle

Some authors refer to this period as Tiwanaku influences, Middle Formative or Upper Formative (González 1977, 1979; Gordillo 1994; Núñez Regueiro 1971, 1974; Pérez Gollán 1991, 1994; Tartusi & Núñez Regueiro 1993). As a whole, this period includes the occupations in northwestern Argentina between c. 550 and 900 CE.

During the period from c. 150 to 850 CE "while earlier developments continue, stark changes in social organization are pointed at specific sites, by the appearance of public spaces such as ceremonial mounds and open plazas. Elite residential places are also recorded, associated with highly standardized iconography in both pottery and metalwork, thus implicating the appearance of institutionalized inequalities" (Yacobaccio *et al.* 2004: 196).

The Middle Period is a problem in itself (Berenguer & Dauelsberg 1989). In the north section, only two cultural facies, known as La Isla and Alfarcito, have been tentatively assigned to this period (González & Pérez 1983), while the Aguada culture is the only one in González's original scheme (1977). Like many other cultures, its existence was first established on the basis of ceramics recovered from tombs. Nevertheless, the C-1 rock art style studied at Inca Cueva was ascribed to a La Isla phase by Aschero (see Fig. 2.29.4 for a similar depiction at Sapagua).

At the time when González presented his synthesis (1977), there were only ten radiocarbon dates for this culture, of which only half were usable in his attempt to separate it from sites of what had been called the "cultura de los barreales", including Condorhuasi, Ciénaga and La Aguada. He established that there were elements of pure regional creation in the La Aguada culture, while others diffused from very early times into the whole Andean area. He distinguished phases and facies according to the area in which La Aguada was found. Until that time there had been little systematic excavation, and La Aguada was found mainly in the Valley of Hualfín (south section), The three areas in which it had developed are mainly in the centre and south sections of this region. The most important sites had been found in Catamarca, north of La Rioja, but also north of San Juan, south of Salta and northwestern Tucumán. The culture was also present at San Pedro de Atacama, northern Chile, where materials were thought to have been exchanged with the Hualfín Valley. González considered that the early developments of La Aguada were linked with the Early cultures of northwestern Argentina, and that the culture declined c. 800–850 CE, when iconographic motifs were used only as decorative elements, without all their previous symbolic meaning. Moreover, he believed that all the feline aspects of artistic expression related in a certain way, although perhaps

FIGURE 2.29.4. Decoration of a broken ceramic vessel: Aguada black engraved style, from a household archaeological site at La Rinconada (Ambato, Catamarca, Argentina). Figure of a masked man. Radiocarbon datings between 603–690 and 1030–1219 cal CE (Gordillo 2007b). Middle Period. (Line drawing by Inés Gordillo.)

indirectly, the La Aguada culture with that of Tiwanaku and other high cultures in the Andes. He considered that, by the end of this process, the Tiwanaku influences may have given way to those of the western forests in northwestern Argentina (north section).

In his 2004 revision, González again considered La Aguada to be related to Tiwanaku, on the basis of iconographic evidence, and he suggested that they had a common origin, arising from the splintering of the Pukara culture (Perú), after 200 CE. In the same way, he linked it with the cultures of northern Chile, through iconography in textiles that could be related to the Ciénaga and Condorwasi cultures of the Hualfín Valley, in Catamarca. Tarragó (2000) also viewed south Andean interactions in this sense. On the other hand, iconographic analysis led Sempé and Baldini (2004) to consider that the La Aguada style was not derived from the Ciénaga-Saujil cultures, but was something new.

Gordillo (2004, 2007a, 2007b), working within this framework, and currently interested in the eastern area of this culture, has analysed public and domestic spaces at La Rinconada, Ambato, Catamarca Province (Figure 2.29.4). She has recovered settlement patterns for this culture, and dates have been obtained that have extended the period, since they range from c. 600 to 1200 CE. Gordillo has produced a very clear definition of this culture of the Middle Period, or what is now called the Regional Integration Period of northwestern Argentina. Laguens (2004) reviewed all the explanations given for the origins of the La Aguada culture, and cited González's (1998) statement that it was related to the early cultures of Condorhuasi-Alamito and Ciénaga. However, he considers that the three areas in which it was found display very different developments: for example, González stated that at Hualfín it can be seen as part of a transitional process whereas at Ambato the change was dramatic. Where there seems to be no relationship with previous cultures, there are nevertheless various subregional entities that share a common ideology, but whose interrelationship in the social, political, economic and cultural spheres is yet to be determined. In addition, radiocarbon dates from La Aguada contexts suggest that the emergence and consolidation of this culture were not contemporaneous phenomena in all regions, but rather involved a sequential upgrading, area by area.

Callegari (2004) is currently working on the Aguada and Sanagasta cultures at La Rioja in the valleys of Vinchina and Famatina. Her studies include the Regional Integration Period and Local Developments or Late Period, spanning the years from 550 to 1480 CE, and with radiocarbon dates from 900 to 1650 CE. Hence the local La Aguada developments are obviously later in this region than in other parts of northwestern Argentina.

In the north section, some authors consider La Isla and Alfarcito to lie within this period, but others, as mentioned earlier, do not even accept the Middle Period there. In the north Puna, Albeck (2000) mentions that there are no basic differences in ceramics or settlement patterns during the Middle and Late periods.

On the basis of the evidence available at present, therefore, it appears that the north and centre-south-east sections continued to undergo divergent processes.

Where interactions with Tiwanaku are concerned, the development process may have involved the whole region, and hence some early features may have emerged in places such as northern Chile, and contributed to Tiwanaku's later establishment as an empire (for further discussion of this subject, see Chapter 2.25).

The numerous geoglyphs on the Atacama Desert in northern Chile have been studied in depth by Briones (2006), who relates them to the phenomenon of caravans crossing the desert from the mountains and northwestern Argentina to the sea in regular circuits (Fig. 2.29.5). The designs were made on the mountains by grouping rocks that are darker in colour than the earth beneath, or by moving dark stones aside to expose the lighter earth, or by a combination of the two techniques. They mainly occupy the Tarapacá Desert, San Pedro de Atacama and northwestern Argentina. Some geoglyphs are 120 m in size and can attain nearly 2000 m². Exchange by means of caravans has been recorded from 800 CE onwards. Chronology shows local histories since the Late Formative Period, reaching a climax during the Regional Developments Period, then weakening in the Late Period and finally disappearing in the Contact Period. After that, there were only sporadic creations of historic geoglyphs such as crosses, stations of the cross and church towers. Most of the prehistoric specimens are related to the Middle Late Period and Late Period, associated with sedentary occupations in the Tarapacá Desert.

Late

As was mentioned earlier, this period has been called that of the emergence of the regional cultures, the Upper Formative, the period of Local Developments (sometimes separated into lower and upper) or, in the south section, the Regional Integration Period. We therefore refer to it here simply as the Late Period, extending from c. 900 to 1400 CE, up to the Inka Empire Period.

FIGURE 2.29.5. Geoglyphs of a llama herd, as well as a few humans, at Tiliviche, Atacama Desert, Chile. (Photo by Paul Bahn.)

It embodies great diversity in all areas. Throughout the northwest, population increased, and fortified sites named *Pukarás* appeared on high points from which roads and other sites could be controlled. Sometimes they were placed near lower altitude sites, named *Pueblos Viejos* (Casanova 1933), where agriculture and herding activities could be controlled.

During this period, "social inequalities increased in frequency and scale, together with the intensification of agriculture as shown by specialized production centers, some of which occupied several thousand hectares" (Yacobaccio *et al.* 2004: 196).

In the centre-south section, we find the Calchaquí, Tastil, Yocavil (Santa María) and Belén facies, in the provinces of Salta, Tucumán and Catamarca. In the north section, a different development can be traced at Tilcara, Humahuaca, Casabindo and Yavi in the province of Jujuy. In the south, the social centres were Sanagasta and Aimogasta, in La Rioja, and Angualasto, in San Juan (Tarragó 2000). It has been suggested that social entities started to compete with other similar organisations in relation to agriculture and herding lands, water and animals. Nielsen and Boschi (2007) refer to this period as that of the warriors. Palma (1998) likewise supported this model, and considered that, at least in the north section, the social inequalities that had started earlier now showed indications in the archaeological record of clear hierarchies and social classes. This change, according to Tarragó (2000), also began in the centre-south section at sites such as Hualfín and Shiquimil/Molinos, in the Calchaquí Valley, around 850 and 1100 CE. By 1300 CE, several nuclei had been established in all the puna oases and in the valleys that were favourable to agriculture and herding activities. With those nuclei as leaders, and a tendency towards urban development, the climax of the regional flourishing of the northwestern populations started in each of the great spatial units. This is the case at Yocavil, with various centres, such as those of Belén at Hualfín, which clearly controlled a wide territory, and exercised different levels of domination over their neighbours. Thus these sociopolitical processes were taking place, with alliances and wars in this period, before the Inka domination of the south Andes.

Resources were maximised during this period, and colonies were established in every kind of environment, connecting the puna, valleys and gorges and the western forests or humid valleys to the east, which are found throughout the provinces of Tucumán, Salta and Jujuy. During this period, societies established in the valleys controlled the puna and the *yungas* (forests) by means of this strategy (Fig. 2.29.6 shows the rock art of Los Pintados de Sapagua on the road from Inca Cueva-Alto Sapagua eastwards to Hornaditas-Coctaca-Rodero, in Jujuy Province).

Irrigated agriculture was already very well developed in those days, in different centres such as Coctaca and Rodero in the north, and was used up to higher altitudinal limits than is the case nowadays. Agricultural terraces with evidence of irrigation can be seen at Guasamayo (Alfarcito), throughout the Humahuaca area, and also in the Casabindo and Doncellas areas on the Puna in the west.

In the centre section, Las Pailas was another huge agricultural area, as was the Santa María Valley, with Caspinchango and Quilmes, which had sophisticated irrigation including a dam. Agricultural terraces are also noteworthy at Huasamayo in the El Cajón Valley, and, in the south, Famatina in La Rioja and Angualasto in San Juan.

FIGURE 2.29.6. "Los pintados de Sapagua" near Pintayoc Hill. Open-air site engravings of different periods superimposed with different patinas. Related to the Inca Cueva rock art sequence. Humahuaca, Jujuy Province. In the centre, a man with Uncu dress surrounded by camelids and suris. C. 1000 CE. (Photo by Lidia C. García.)

Raffino (1988) reviewed most of this period's sites and analysed nineteen of them located all over northwestern Argentina, on the basis of their architectural characteristics, the finds recovered and radiocarbon dates.

In the north section, the political centralisation and hierarchical society were inferred by Palma (1998) from the different kinds of archaeological sites, analysis of different offerings in tombs and economic exploitation; he concluded that there was an increasing social stratification and competition for leadership. Other studies mentioned by Tarragó (2000) for the Pucará de Tilcara, found evidence of different diets through the analysis of human remains. In the same way, studies of faunal and agricultural remains in different sectors of sites such as La Huerta, in Humahuaca, show the presence of diverse social classes. For this Late Period, Nielsen (1997) established four phases.

Palma (1998) also mentioned ethnohistorical data that mention the Quebrada de Humahuaca as being divided into two political entities by 1500 CE: the Omaguacas in the north and the Tilcaras in the south, each with their own leaders, Teluy and Viltipoco.

This process, under way since 900 CE, began when the Humahuaca communities started an expansion of their environmental exploitation towards the lower lands to the east (Dougherty 1977; Ventura 1993). This area is reached through the Abras, which permit communication through the mountains to the east. Expansion had also occurred towards the Puna region in the west.

Therefore, by the middle 1000s CE, the Omaguacas occupied the gorge and subsidiary valleys connecting these two environments that they controlled (*q'eshwa* and *suni*), and through exchange or an effective presence they obtained resources from the other two ecosystems (*puna* and *yunga*). These are local names for microenvironments at differing altitudes above sea level and with different resources.

There were two kinds of sites, those in the lower altitudes of the gorges, where they sometimes coexisted with early occupations – this is the case with sites such as Antumpa, Estancia Grande and El Alfarcito. Others, like Tilcara, La Huerta, Los Amarillos and Peñas Blancas, instead were highly complex in architecture, and associated with artifacts of great social prestige. In many cases, it has been noted that the Pukarás were not really fortified, but instead had retaining walls (Palma 1998).

For the final moments of this period, Tarragó (2000) has demonstrated relations with southern Bolivia (Lípez), Atacama, Copiapó, Chicoana and Quirequire in Chile, and also with the heart of northwestern Argentina through the construction of fortresses in the southern Andes.

Inka

The *Kollasuyu*, or southern division of the Inka Empire, was the broadest of its four *suyus*, covering 800,000 km², nearly half the total territory of this empire, and extended

from Lake Titicaca to the Andean regions of Bolivia, Argentina and Chile.

Its expansion was made by means of invasions that were carefully planned, with previous surveys of the area and its resources. The army took up positions in the valleys, maintaining or replacing the local chiefs according to their circumstantial political needs. Their administration was highly efficient, and their presence completely altered the function of the main sites, which now combined administrative techniques with spatial management.

Their main interest in this expansion towards the south was the mining of metal resources (gold, silver, copper, tin, zinc, lead) as well as semiprecious stones (malachite, azurite, turquoise) and perhaps salt. Indeed, it has been found that no fewer than 78% of all Inka sites in northwestern Argentina are associated with mining (Raffino 1981).

Architecture is the strongest archaeological indicator of the Inka presence, thanks to its characteristic aspects. One of the most impressive features is the Inka road system or *Qhapaqñan* (Hyslop 1984; De Marrais 2001; Nielsen & Boschi 2007). These roads seem to have been built over previous ones, and connected all the environments and important sites from Ecuador to the Uspallata Valley in Argentina and the Maipo Valley in Chile. They covered 16,000 km, 7000 km (44%) located in the Kollasuyu.

The importance of the roads had to do with power, as they formed the basis of the Inka system of domination. They were linked to the movement of people required for the *mit'a*, or rotative service, requested by the state for many enterprises such as the manufacturing of ceramics or land labour, the movement of rebellious populations and the rapid movement of armies in cases of disobedience. They were not related to commerce.

The roads connected sites associated with agriculture and herding lands, such as the valleys of Cochabamba, some Puna oases like the Loa Valley, San Pedro de Atacama, Doncellas, specific areas in the Santa María or Yocavil Valley (Quilmes) and the great productive centres in the Humahuaca Gorge. For example, Coctaca was clearly a very important agricultural centre, with high-walled terraces and irrigation structures such as canals and ditches that are clearly different from those of the Late Period, as well as *collcas* or deposits for grain. Near this centre is the similar site of Rodero. Nielsen (1995) suggested that Coctaca-Rodero was a state camp for agricultural production. Palma proposed that, in view of the high quantity of textile-working instruments recovered, La Huerta's main function could have been textile production. Tilcara likewise contained a possible centre for the manufacture of lithic figurines, while Los Amarillos could have been related to herding, as it is near the Puna and the high gorges linking it.

The Inka road system had two long axes: one near the coast, passing through the Chilean countryside and the mountain range; and the other along the Bolivian and Argentine Puna, the gorges at its limit and the valleys of Salta, Tucumán, Catamarca, La Rioja, San Juan and Uspallata, and crossing through the Andes to the Mapocho area in Chile, where it joins the coastal road. There are variations in different sectors, and overall these roads are not as spectacular as in Cusco.

In the north section, the road turns from the Puna through Cochinoca to the east, passes through Inca Cueva, Sapagua and Rodero and then turns towards Coctaca (Fig. 2.29.7). We can follow it southwards through Calete, Yacoraite, La Huerta, Tilcara, Purmamarca, Ciénaga Grande; and it then turns to the east where it joins the main road that links Cochinoca with El Moreno, near San Salvador de Jujuy.

Along the road there were several specific sites where the architecture repeated a formal pattern, derived from the centre of the empire. There was an alternation of *Tampus* (inns providing rest and food along the road) and *Chaskiwasis* (smaller inns where messengers could rest), along with irrigation features, administrative sites, fortresses and high-point sanctuaries. All of this reveals a clear demand for order and homogeneity in the control of space. Some of the sites have a characteristic "composed perimeter enclosure" (RPC), a pattern that was superimposed at places like Alto Sapagua, near the Inka road that crosses it towards the region north of Humahuaca (Fig. 2.29.8).

In contrast with their governmental and administrative centres in Peru, in northwestern Argentina the Inkas used the Late Period sites and rearranged them in accordance with their classical regular planning; and it seems that different strategies or negotiations were enforced throughout this broad area (Cremonte & Williams 2007).

The total sample of Inka sites recorded in the southern Andes is 425, of which 141 are in Argentine territory and 284 are in Chile or Bolivia (Raffino 1988). At Humahuaca, there are twelve sites with Inka architecture, and they had different functions.

Sanctuaries have been found along the Andes at high altitudes, above 4000 m asl, where victims and statuettes were offered in religious ceremonies (see Chapter 2.26). Inka human sacrifices to the deities on mountain tops had been mentioned by Spanish chroniclers (*Capacocha*), but archaeological evidence was scarce. A history of the Chilean and Argentinean discoveries since the beginning of this century can be found in Schobinger and Ceruti (2001); the most recent and astonishing finds have been made at Lullaillaco in Salta, Argentina (central region on the map). Research has been carried out in the mountains of Perú, Chile and Argentina by J. Reinhard, and in Argentina also by Ceruti (2004). The Salta finds are the highest natural mummies in the world (found at 6739 m asl) and, due to the cold, were extremely well preserved. These findings have allowed detailed analyses. Schobinger also studied in this way the Aconcagua mummy, with Chilean and Argentine specialists. In that case, it was suggested that the small child came from the mesothermic andine region, according to his diet; but the *cumbi* textile which accompanied him, with bird decoration, and his sandals suggested a Peruvian coastal origin (cumbis were sophisticated textiles used for exchange within the Inka Empire).

The Capacocha ceremony was a complex one that took place on sacred mountains or *huacas*, where local communities made offerings to their gods. During the Inka Empire, even though information is still scarce, it seems that it formed part of the complex redistribution and complementarity system that the

FIGURE 2.29.7. Inka road connecting Alto Sapagua with Azul Pampa, to the north, where a 2-m-high apacheta is found at the abra. Humahuaca, Jujuy Province. (Photo by Lidia C. García.)

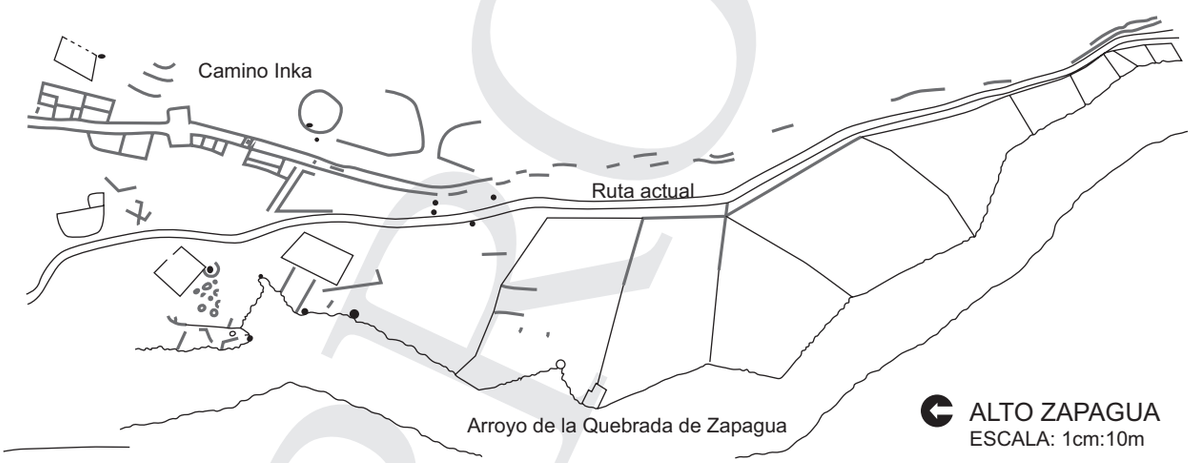


FIGURE 2.29.8. Antigal de Alto Sapagua. Ubacyt F-018. Present and subpresent structures. Drawn *pirca* (wall): archaeological structures. (García & Do Río 2011: 21.)

Inkas used in order to unify and control the region, strengthen their links with local curacas or chiefs, and advance their power. In fact, children and young virgins or *acclas*, with no blemishes, were offered together with gold, silver and *spondylus* shell statues at the top of the highest peaks. It is supposed that the victims were offered by their own families, and that it was an honour to be sacrificed and to sacrifice a son or a daughter to the gods – mainly Inti, the sun god. So processions towards Cuzco, centre of the empire, carried the offerings from many faraway places such as the coast or mesothermal sites, and they were then formally returned to be sacrificed at the local huacas. In the Llullaillaco case, an apparent caravan of llamas (two of spondylus shell and one of silver) and two male statues (of spondylus and of a gold/silver alloy) were found in a row among the offerings. A similar one was found on Mount Aconcagua, in Mendoza, Argentina (south region on the map).

We know these sacrifices are Inka due to the offerings left with them in most cases. The Inkas believed in life after death, and so they left all sorts of sandals, tunics, cumbis, food, coca

leaves, vessels and so on with the offered people. Human sacrifices in the Andes were not on a massive scale like in some Central American societies. It seems that they were performed when a mediation with the gods had to be made, in the face of natural disasters such as an earthquake, the death of an Inka ruler, or other stressful situations, in which nature had to be calmed.

The Pukarás (fortresses) are present throughout the empire. In the Kollasuyu they constitute 27% of all Inka sites (Raffino 1981). Their main function was the defence of the empire's limits, the prevention of invasions from the east, and the discouragement of rebellions in the occupied regions.

Where military sites are concerned, at Humahuaca we only find two real fortresses: the Pukará of Morado, and Hornaditas (though even in the latter case some researchers consider its defences to be natural). Another site seen as a Pukará is Tilcara, but its defences are likewise open to question, although it was difficult to reach, which is considered a basic Inka feature (Palma 1998).

During the Inka Period, from a political point of view, elites were reinforced, because they were allowed – through the empire's system of selective redistribution – to obtain prestige symbols once they accepted the new order.

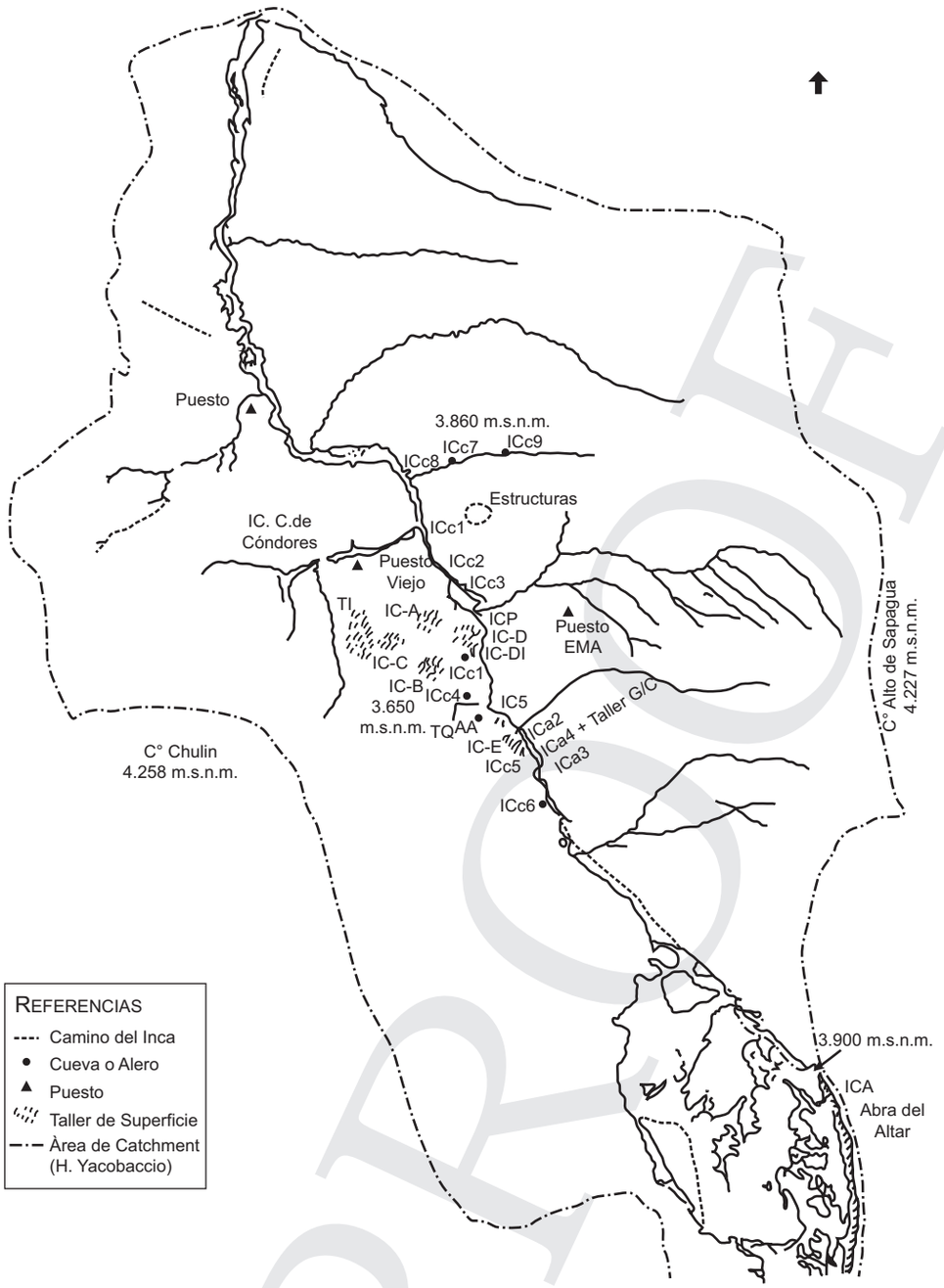
As a whole, this short period was characterised by the confrontation between the empire and local societies. Research has shown that the Inka presence in this region was earlier than had been traditionally evaluated (D'Altroy, Williams & Lorandi 1998). Evidence of diversity, the frequency of their presence and local negotiations with former communities all show a systematic involvement of the Inkas in the area by means of their strategies of labour extraction and symbolic domination (Raffino 1993; Nielsen 1997).

Hispano-Indigenous

After the short period of Inka occupation, the Spanish conquerors entered northwestern Argentina and drastic changes took place – particularly in terms of routes and interests. Connections from north to south were privileged, in order to carry the silver from Potosí to Buenos Aires. This altered the former complementary interactions in an east-west round circuit that allowed communities in every section to obtain and exchange different kinds of goods in a harmonic way. Local ethnographic societies resisted fiercely, and war – primarily at Humahuaca and in the Calchaquí Valley – lasted for c. 150 years. Some of the populations, such as from Quilmes in the centre section – were taken to Buenos Aires, on foot, as they were among those which the Spaniards found very hard to control. The local cosmologies were attacked, and the practices regarding *Pachamama*, the mother earth, and the huacas or sacred places, were savagely prohibited. Local populations were prevented from honouring their dead, and in some cases, invoking the "extirpation of idolatries", the Spaniards forced commoners to set fire to their ancestors' mummies in the public plazas. Several other strategies were used in order to organise production for the Spanish kings and local *Encomenderos*. Nevertheless, the local indigenous people continued with their practices and beliefs, resisting silently, and honoured both the Virgin Mary and Pachamama. They produced a religious syncretism that continues today. People in northwestern Argentina and northern Chile are deeply religious, and their beliefs and practices are not divorced from each other. Every aspect of daily and annual life is embedded in a deep and sincere comprehension that there is a prevailing order, and that men and women have to carry out many ritual activities in order to respect it.

Concluding Remarks

We have tried to provide a synthesis of the development of diverse ranked societies in northern Argentina and Chile, showing that in this vast territory local processes towards complexity had started long before the periods we are treating here. One such case is the complex hunter-gatherers studied at Inca Cueva Cave 4, Jujuy, from at least cal 4330 BCE (García 1998–9). Evidence gathered at the site in relation to natural mummies recovered there by an old looter of the province reveals a context that allows us to relate this complex society to the Chinchorro culture of northern Chile. Moreover, the process – at least in this microregion – can be followed in detail through ongoing scientific research. In later periods, this same gorge yielded information on long-distance collection of resources such as cebil (*Anadenanthera macrocarpa*), found inside a bone pipe, and obtained from the eastern forests. Such is the case of Inca Cueva Cave 7, dated to 2130 BCE, as was mentioned in the "Early" section. And the same gorge produced one of the first occupations with ceramics, dated to cal 1004 BCE, at Inca Cueva Alero 1 (Map 2.29.2). Connections with northern Chile for this occupation and that of Inca Cueva Cave 5, with dates from cal 58 BCE, have also been mentioned earlier, primarily in relation to Tulán 54. Nevertheless, we have to recognise that much remains to be done. Many of the sites have between one and seven dates, which is obviously not enough. Some of them, including many of the Pukarás and Pueblos Viejos at Quebrada de Humahuaca, have none. Moreover, in this microregion (Azul Pampa, Jujuy, which includes Inca Cueva and Sapagua), for instance, even though some supposed early open-air sites have been located and tested, on the whole they have not produced evidence that can be compared with the early ceramic occupations in the rock shelters of Inca Cueva Alero 1 and Cave 5 mentioned earlier, apart from the settlement patterns recovered that coincide with those of early occupations in the centre and south sections. The attached drawings show circular patterns of sites investigated along the Sapagua Gorge (Figs. 2.29.9 and 2.29.10), and the latest map produced for the *antigal* of Alto Sapagua, showing integrated circular structures, the north Andean road crossing the site, and the Inka road going in almost the same direction, including the RPC of Inka Tampu in the northeastern area of the map, near the road (Fig. 2.29.8). This example is a particularly clear demonstration of the complexity of local developments in northwestern Argentina.



MAP 2.29.2. Inca Cueva Gorge and all its sites. (L. C. García 1998–9.)

When the origins of cultural diversity are reconsidered in the light of recent radiocarbon dates, many authors find that the classically established periods are enlarged in both senses, and superimpose their dates onto different sections. This applies, for example, to the situation regarding the Middle Period in the south-centre-east region and the Early and Late periods in the north. Even the Inka occupations in this region have proved to start earlier than was previously thought.

Hence the development of Late cultures in northwestern Argentina displays regional processes of local developments,

with intense, regular interactions between them and with northern Chile and southern Bolivia and Peru during the whole process, exchanging both goods and ideas.

Regarding the origins of the Early cultures in this process, it seems that the basis of their development was different economically in the various sections, because of the variety of micro-environmental interactions and local resources. In some of them the agricultural basis was the main factor, while in others, it seems to have been a consequence of an increase in herding practices – and of course there was constant interaction between both groups (herders and agriculturalists), which differed in each section in accordance with geographic factors. Consequently, economic differences do not correspond to the sections. Hunting and gathering practices also seem to have continued to be part of the economic basis, and they have even been recorded in modern times for herders with restricted agriculture, at places such as Azul Pampa, Jujuy, where the gathering of plants and hunting of animals still contributed part of the diet until only some twenty years ago. At the same time, symbolic expressions show marked singularities, primarily in the iconographic decoration of ceramics and in rock art.

Of course, the knowledge we have nowadays of all these processes depends on the intensity of research undertaken in each section, and the theoretical-methodological approaches and interests. In general, we can say that many different lines of enquiry are currently being developed in archaeological research in northwestern Argentina. For example, results relating to obsidian sources and their routes have linked territorially the sites of all periods with the obsidian sources detected, and this is revealing an interesting development of territorial management, a knowledge of resources and a system of exchange throughout the Late Period. There are many other rich avenues of research being developed today. Some of them inevitably have sampling problems, such as those related to biological investigation, since little of the material discovered by the end of the 19th century had any kind of context or association, and some artificially deformed skulls were taken to other countries. Naturally, the problem of looters

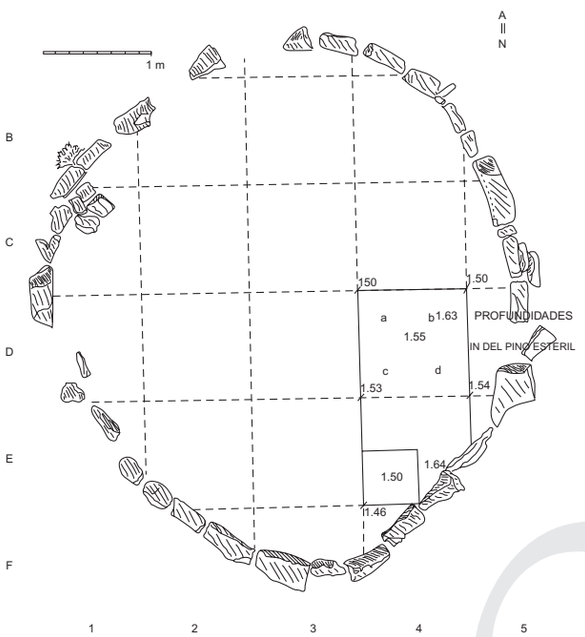


FIGURE 2.29.9. Pintayoc 1. Circular site excavated above and in vicinity of "Los Pintados de Sapagua". (L. C. García 1998–9.)

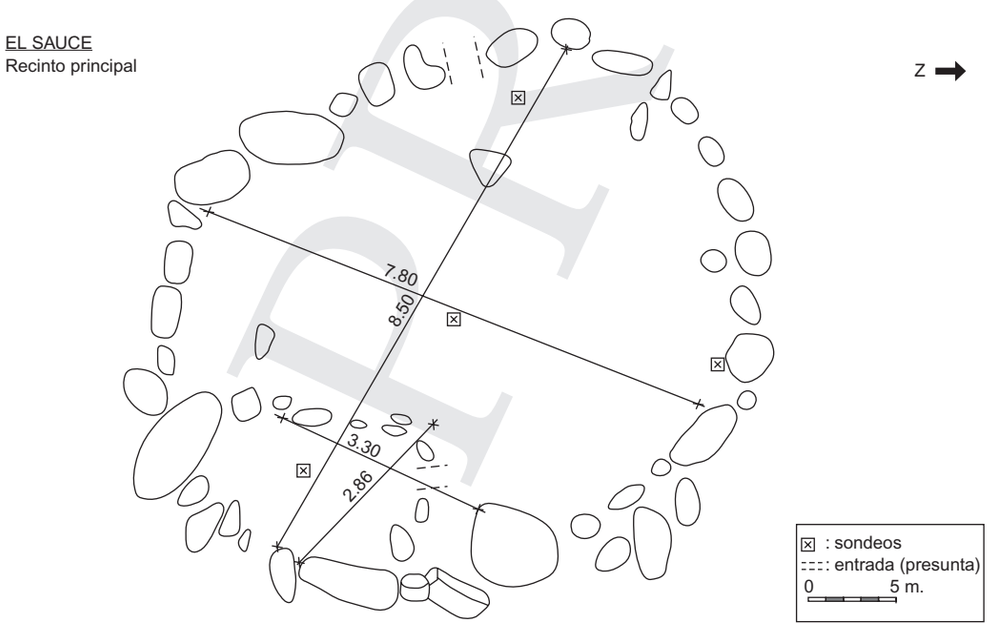


FIGURE 2.29.10. El Sauce circular structure on the right margin of the Sapagua Gorge, opposite the Antigal de Alto Sapagua. (L. C. García 1998–9.)

and the antiquities trade has also played a role, as was mentioned regarding the finds from the Early Period. The main avenues of research being explored today cover landscapes, interactions, decision making, conflict, exchange, public and domestic places and circulation; and of course there are increasingly sophisticated analyses of all kinds of vestiges. The references listed here provide some examples of this work, although research today focuses primarily on items that constitute more general surveys; but it forms a basis from which to expand one's reading about this complex process in a wide and diverse region of the world.

Acknowledgements

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