

# CHAPTER 20

## Symbolic Discontinuities: Rock Art and Social Changes across Time and Space

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### ABSTRACT

This chapter presents a study of rock art variation through time in a high-altitude valley within the Southern Andes (Quebrada de Humahuaca, Argentina). It uses different kinds of regional evidence to contextualize rock art in its broader archaeological context. The variation observed over time in the selection of places, themes, techniques, and substrates is analyzed, together with further archaeological data, to show how people inscribed the land with rock art at different times and with different purposes. This, I argue, was always done symbolically, illustrating the diversity of ways through which societies could culturally appropriate and construct their landscapes.

### INSCRIBED LANDSCAPES

This chapter deals with the potential that rock art has to mark the land, so that these marked places become so socially significant that they assist in the process of cultural appropriation of space to develop this into a landscape. To mark land with rock art, as a socially significant signal of cultural presence, is a form of inscription, which not only physically marks the place, but also creates a social engagement that enhances people's relation with the land in the sense of creating a place of belonging (after Bradley 1997).

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The production of a particular “sense” of place by marking the land varies, not only in space and time, but also in relation to different types of social practices performed by different parts of society in specific historical contexts. These can comprise activities as diverse as initiation practices, territorial marks within lands under dispute, trail-road marks, inscriptions executed by hegemonic groups to secure their position and enhance their visibility by the rest of the society, amongst many others. Considering that just these different types of graphic signaling occurred frequently in many social contexts, it is possible that there could be *different landscapes* in the *same place* at the *same time*. Different social groups can inscribe the land with particular cultural significances which have valency for them – as opposed to others. The way used to mark the land by means of rock art, in every case, is highly symbolic: and it is these symbols, as inscriptions, that can be read and understood by those who know the code.

With these considerations taken into account, it could be expected that both synchronic and/or diachronic symbolic discontinuities could occur. *Synchronic symbolic discontinuities*, developed in particular historical contexts, express the existence of multiple culturally signified landscapes, executed by a discrete society, during a specific time period, in a specific area. *Diachronic symbolic discontinuities* appear as variations in the way subsequent societies inhabiting the same area mark the land by means of rock art. They will usually correlate different kinds of social, economic, political, and ideological systems with extant art bodies. The potential existence of these intertwined landscapes in a study area that could be both contemporary and/or sequential is a challenge that must be explicitly addressed by rock art researchers and which will be explicitly addressed in this chapter.

## ROCK ART STUDIES

A case study is presented here to illustrate these intertwined landscapes. Quebrada de Humahuaca is an important rift valley system of the Argentinean Andes. Archaeological evidence from this locality suggests a complex socioeconomic and political trajectory with significant variations through time associated with differences in the way in which people related to the environment, changing from a hunter-gather way of life to new productive economies with increasing complexity, intertwined with social, political, and ideological dynamics. This long and complex human past has traditionally been researched by archaeologists, anthropologists, and historians, and has included rock art studies.<sup>1</sup> The methods used have been mainly formal methods (after Chippindale and Nash 2004) except for the most recent times where ethnographic evidence allows for informed methods.

The formal methods employed here to study rock art were developed by Gradín (1978), who emphasized the necessity of a regional approach to link rock art information with other archaeological data in order to differentiate rock art production in particular regions (space), throughout archaeological sequences (time), and its correlation with different groups of people (culture). To address these domains, three types of information are critical:

- 1 *Topography*: placement in space (location, accessibility, visibility, selection of rock surface, and so forth).
- 2 *Representation*: the process of rock art production as material culture (choice of the subject to be represented, way it was produced in graphical terms, techniques used).
- 3 *Chronology*: its position in the archaeological sequence (superimposition, fallen blocks with art in the sediments, and so on) in order to assess its consecutive production through time.

These criteria, used extensively in Patagonia, were also used to develop a relative rock art sequence in Quebrada de Humahuaca.<sup>2</sup> Aschero (1979) made meticulous observations on the important site of Quebrada de Inca Cueva (a tributary of Humahuaca) and, by comparing sites located in the same Quebrada, established a rock art sequence defining three successive stylistic groups. By analyzing other sites at a regional scale, Hernández Llosas (2001a) revised this sequence. These approaches used sequences built on relative chronologies, and, while acknowledging that the rock art sequence established here is one of the most elaborate in Argentinean archaeology, it is important to identify and address still extant gaps.

One of the most important issues to arise in this work is the taphonomy of the rock art. As Chippindale and Nash (2004:9–10) have argued, “differential survival” is a critical variable, especially in estimating “comparative survival rates.” It is important to assess the natural and human agents that could have affected the rock art at the level of site, area, and region, in order to examine the possibility that some productions could have been completely erased, covered, become invisible, partially covered, and detached, and so forth. To evaluate the occurrence of *natural processes*, it is important to assess the possibility of complete destruction of sites by geological causes, such as mass erosion or re-depositional processes, and the condition of existing sites, considering the:

- characteristics of the rock and rock surface;
- degree of exposure;
- extent of shelter protection;
- site orientation;
- kind of locally acting agents; and
- degree and type of these impacts on different rock art categories.

To evaluate post-depositional processes related to *human agency* after the production of specific rock art in a sequence, one can assess the:

- superimposition of motifs over earlier ones;
- re-painting events;
- use of part of older motifs to create new ones;
- total destruction; and
- covering up with sediments and burial due to further occupation at the locale.

Another critical aspect that must be considered as a knowledge gap is the *function of rock art*. In many regions and sites, only one function has been ascribed to rock

art production (e.g., “shamanic practices” versus others such as “territorial marks,” “trail-road marks,” and so forth). Evaluating the possible purpose of a specific rock art production is critical to its interpretation. We must consider the fact that completely different kinds of rock art can correspond to the actions of the same people at the same time, and that the variation could be related to differential functions, such as sacred sites versus domestic sites; men sites versus women sites; territorial marks versus aggregation sites, amongst many other possibilities.

Taphonomic and functional issues of rock art are clearly interconnected with chronology, and to build a reliable relative sequence, it is critical to consider and assess the possible differential preservation of art and the appearance of diverse kinds of rock art productions. If any absolute dating method is going to be applied, it is crucial to first have a relative chronology in place, offering a fundamental guide as to which significant samples are to be direct dated – essentially as a test of the inferred sequence. This strategy reduces the number of samples that might need to be dated (avoiding unnecessary destruction), increases the efficiency of the strategy (covering the entire sequence and/or functions), and saves time, cost, and professional resources. With these considerations in mind, the Quebrada de Humahuaca archaeological sequence is revisited to imagine the multiplicity of landscapes that could have hosted rock art productions.

## PLACE

Quebrada de Humahuaca is a large and long rift valley system in the south-central portion of the Eastern Andes. The Eastern Range, at this latitude, becomes the southern border between the Andean Highlands to the north and west, and the Eastern Lowlands to the east and south. This geographical position is unique, and Quebrada de Humahuaca is the only southern connection between the highlands and lowlands. It commences at 4,000 meters above sea level in the High Plateau and drops to 1,500 meters above sea level in the lowlands (Figure 20.1). The valley has a main north–south axis. The Rio Grande, the major drainage system, runs along the basin for 170 linear kilometers. Its tributaries originate in the north, east, and west, giving this rift valley system a brachiated shape. This hydrological system belongs to one of the upper parts of the Atlantic basin into which its waters flow.

By definition, a rift valley is always a path, connecting different environments as it varies in altitude. Here, this characteristic is enhanced even further as the Quebrada de Humahuaca, a highland itself, connects higher lands located to north and west with much lower lands to the east and south. The link between highlands and lowlands occurs not only through the north–south axis but also through the upper tributaries in the watershed, which act as “gates” to the other environments, labeled the Puna (higher lands) and Yungas (lowlands).

The High Plateau or Puna is a large plain, under the jurisdictions of Peru, Bolivia, Chile, and Argentina. It is characterized by internal basins, ranging from 3,800 to 4,100 meters above sea level and experiencing an arid and extreme climate. The Yungas on the eastern slopes of the Andes now belong to Peru, Bolivia, and Argentina. In this southern part, it narrows and has an abrupt gradient, originating at ca.5,000 meters above sea level and dropping down to 500 meters above sea level.

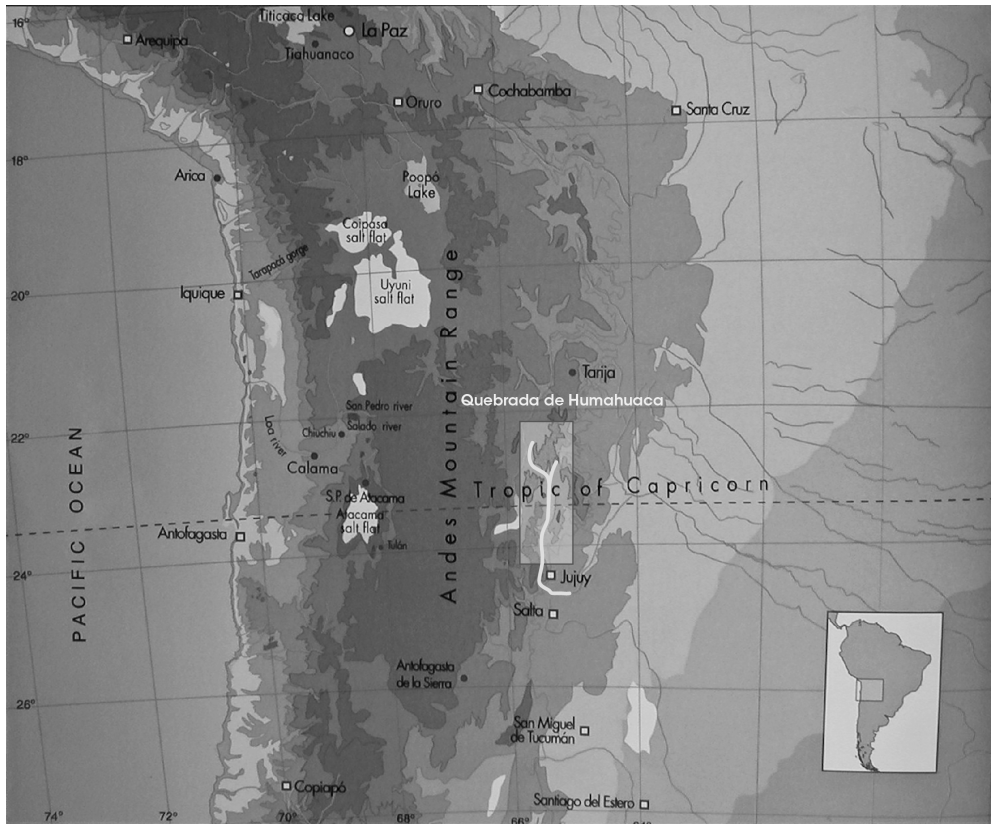


Figure 20.1 Locality map for Quebrada de Humahuaca.

The humidity of the Atlantic winds provides for a high degree of biodiversity. Lush vegetation, such as mountain and tropical forest, varies according to altitude. Intersecting these diverse environments, the Quebrada de Humahuaca is the most important rift valley system in this part of the Andes. It is truly a threshold that has to be passed through to reach all of the other surrounding environments.

While the climate is arid, with 300 mm annual summer rainfall, this differs according to altitudinal gradients, important enough to divide the rift valley system into two main sectors. The Main Basin, where the Rio Grande runs, ranges from 1,500 to 2,900 meters above sea level. It is better watered and experiences more moderate temperatures than the Upper Rift Valley, which includes the central and upper tributaries, ranging from 2,900 to 3,900 meters above sea level. It is in this upper sector where outcrops occur (Figure 20.2) with caves and rock-shelters (Figure 20.3) where rock art was mainly produced. Its water resources are concentrated in springs, and the temperature is more extreme. These differences influence the characteristics of vegetation and fauna. The whole rift valley system sits within a geological fracture which defines the shape of the basin. This, together with the marked altitudinal gradient, causes heavy fluvial erosion, producing mass removal of sediments in single



Figure 20.2 View of Upper Rift Valley with outcrops.



Figure 20.3 Pintoscayoc 1 rock-shelter.

episodes during the rainy season. This geological instability has had significant impact on the archaeological record which will be discussed below.

## PEOPLE IN THE PLACE THROUGH TIME

With this environmental backdrop in place, we now turn to the human communities that lived in the valley and experienced complex socioeconomic and political changes through time. These changes occurred concurrently with environmental variations related to global climate changes, of which the Pleistocene–Holocene shift is the most extreme example, but continuing with later climate oscillation associated with ENSO fluctuations (Table 20.1).

### Pleistocene–Holocene shift, ca.11,000–9,000 BP

At the end of the glacial era, the ice mass retracted to the upper part of the mountains. The result was a less cold, but still cool climate. Several areas that were covered by ice or with peri-glacial environments were now available for colonization by plants and animals. The first traces of humans appear in the archaeological record precisely then, suggesting access to lands that may have been previously inaccessible. The cultural remains recovered, and found in caves located in the Upper Rift Valley, include sparse lithic materials and archaeofauna associated with hearths. The dating of this archaeological material places it at the cusp of the hunter-gatherer expansion into the Americas, and has been characterized as the exploration phase, with respect to the process of early peopling (Borrero 1994; Hernández Llosas 2005).

### Early Holocene, ca.9,000–7,000 BP

This period heralds warmer times with the basin of the rift valley system being higher and less inclined, provoking less fluvial erosion than later on. The Upper Rift Valley and the surrounding mountains are also less dissected than they were subsequently. The archaeological record indicates a more intensive occupation and use of the area, still in a hunter-gatherer mode. The same caves contain thick layers enclosing copious quantities of lithic and faunal remains. They appear to have served mainly as temporary seasonal campsites, where domestic activities were performed, such as the preparation and consumption of game, the production and rejuvenation of hunting tools, and hide working. One shelter site also contains a human burial, dated ca.9,000 BP, consistent with radiocarbon dates from associated domestic hearths. These two types of evidence (domestic and funerary) account for the largest part of the entire sequence, being dated from 9,000 to 8,000 BP. This evidence is consistent with an “installation and colonization” phase (Borrero 1994; Hernández Llosas 2005).

Archaeological evidence of earlier occupations has suffered many post-depositional processes, leaving only “residua” records. Until now, earlier occupation has only been found in the lowest deposits inside caves and shelters, which functioned as “traps” for the sediments, preventing or diminishing the action of the erosive and mass deposition processes we know were operating at the regional scale. The traditional rock art sequence proposed that painted abstract motifs could be ascribed to these earlier

**Table 20.1** Chronology and rock art characteristics of sites in Quebrada de Humahuaca

<i>TIME</i>	<i>CHRONOLOGY</i>	<i>SITES</i>	<i>CHARACTERISTICS</i>	<i>ROCK ART Sites Characteristics</i>
PLEISTOCENE /HOLOCENE SHIFT	ca.11,000–9,000 BP	Inca Cueva 4 (García 1997)	First human presence	?
	ca.9,050–7,050 BC	Huachichocana III (Fernández Distel 1986) Pintosayoc 1 (Hernández Llosas 2005)	Hunter-gather economy <b>Exploration</b>	
EARLY HOLOCENE	ca.9,000–7,000 BP	Inca Cueva 4 (García 1997)	Human use	?
	ca.7,050–5,050 BC	Huachichocana III (Fernández Distel 1986) Pintosayoc 1 (Hernández Llosas 2005)	Hunter-gather economy <b>Effective occupation and colonization</b>	
MIDDLE HOLOCENE	ca.7,000–5,000 BP	Lack of evidence	<b>Abandonment</b>	?
	ca.5,050–3,050 BC		and/or occasional use	
LATE HOLOCENE	ca.5,000–0 BP		Transformation from hunter – gathering economies to productive economies	
	ca.3,050–0 BC			
Transition	ca.5,000–3,000 BP	Inca Cueva 4 (García 1997)	<b>Transitional economies</b>	Inca Cueva 1
	ca. 3,050–1,050 BC	Huachichocana III (Fernández Distel 1986)	From hunter-gathering to food production	Inca Cueva 4
		Pintosayoc 1 (Hernández Llosas 2005)		Peña Agüejro – Coraya
		Inca Cueva 7 (Aguerre et al. 1973)		<b>Abstract motifs</b>
		Coraya (Fernandez Distel et al. 1981) El Portillo (Fernández 1997) Tomayoc (Lavalle et al. 1997)		<b>Figure 20.4.1</b>

Consolidation

ca.3,000–2,000 BP  
ca.1,050 BC – 0 AD

Pintosayoc 1 (Hernández Llosas 2005)  
Huachichona CIII (Fernández Distel 1986)  
Inca Cueva Alero 1 (García 1997)  
Inca Cueva 5 (García 1997)  
Tomayoc (Lavalle et al. 1997).  
Cueva Cristobal (Fernandez 1988–1989)  
Alfarcito (Zaburlin et al. 1994)  
Estancia Grande (Olivera and Palma 1997)  
Antumpa (Hernandez Llosas et al. 1983)  
Huachichocana C III (Fernández Distel 1986)  
Inca Cueva 5 (García 1997)  
Tomayoc (Lavalle et al. 1997)

**Consolidation of**  
productive economies  
New technology: ceramics

Inca Cueva 1  
Inca Cueva Alero 1  
Cueva Cristobal  
**Figurative motifs**  
Big frontal anthropomorphs  
**Figure 20.4.2**

Development

ca.2,000–1,000 BP  
ca.0–950 AD

Media Agua 1  
El Morado  
Chayamayoc  
Coctaca  
Inca Cueva 1

**Development of**  
productive economies  
Bigger herding/farming  
communities  
First concentration of  
population in villages

**Figurative and abstract motifs**  
Small profile anthropomorphs and  
camelids forming complex scenes;  
geometric complex compositions  
**Figure 20.4.3**

Intensification

ca.1,000–600 BP  
ca.950–1550 AD

Juella, La Señorita (Nielsen 1997)  
Los Amarillos (Nielsen 1997)  
Pucara de Tilcara (Tarragó and Albeck 1997)  
Volcán (Garay de Fumagalli and Cremonte 1997)

**Intensification of**  
productive economies  
Bigger and fortified villages  
Sophisticated technologies:  
metallurgy, textiles,  
architecture  
Social inequality

Inca Cueva 1  
Sapagua  
Cerro Negro  
**Figurative motifs**  
Schematized llamas  
Frontal anthropomorphs  
“Shield-shaped”  
Human–llama link  
“Caravan” motifs  
**Figure 20.4.4**

(Continued)

Table 20.1 (Continued)

<i>TIME</i>	<i>CHRONOLOGY</i>	<i>SITES</i>	<i>CHARACTERISTICS</i>	<i>ROCK ART Sites Characteristics</i>
Annexation	ca.600–0 BP ca.1550–1950 AD	Los Amarillos (Nielsen 1997) Pucara de Tilcara (Tarragó and Albeck 1997) Volcán (Garay de Fumagalli and Cremonte 1997) La Huerta, Coctaca (Raffino et al. 1986) Cienaga Grande (Olivera and Palma 1997) Yacoraité (Krapovickas 1969) Campo Morado (Palma 1998) Pintosayoc 3 (Hernandez Llosas 2006) La Falda (Rivolta and Nielsen 1996–1998)	<b>Inca conquest</b> ca.600–400 BP ca.1450–1550 AD <b>Spanish invasion</b> ca.400–150 BP ca.1635–1800 AD <b>Republican times</b> 150–0 BP 1800–1950 AD	Inca Cueva I Pintosayoc 1 Coctaca I Sapagua and Cerro Negro Campo Morado <b>Figureative – abstract motifs</b> “Snake-shaped” motifs Cup marks Axe-like motifs <b>Figure 20.5.1–20.5.2</b> Pintosayoc 1 Cerro Pircaado Cuevón de los Jinetes Sapagua and Cerro Negro. <b>Figureative – abstract motifs</b> Inca soldiers Ovoid motifs Horsemen Fight scenes <b>Figures 20.5.4–20.5.7</b>

occupation episodes. However, taphonomic observations suggest that the possibility that the rock art of these early times could have survived is unlikely.<sup>3</sup>

### **Middle Holocene: ca.7,000–5,000 BP**

This period is characterized by a sudden climate change marked by aridity. The drier conditions resulted in a quick loss of vegetation cover which impacted on the whole ecosystem. The lack of shrubbery also contributed to soil erosion. The earlier archaeological sites do not have layers belonging to this time-span. On the contrary, the early layers are directly superimposed by later sediments with evidence of occupation. The absence of archaeological deposits – a lacuna spanning 2,000 years – also is registered in neighboring regions (Nuñez et al. 1994). No rock art has been proposed as belonging to this time period.

This absence of evidence has been previously interpreted as an abandonment of the area. While this assumption may be correct, there are two other possibilities: greater residential mobility and only episodic use of the caves, leaving very few remains behind, and the obliteration of those remains by the action of intensely erosive post-depositional processes. Evidence for occupation reappears around 5,500 BP.

### **Late Holocene: ca.< 5,000 BP – present**

The Late Holocene saw more humid and warm conditions here, characterized by small but notable oscillations. Biota increased in range, repopulating most of the study area. Increased rainfall caused more fluvial erosion, resulting in a deeper basin, mass erosion and re-deposition events. This process is typical of late Quaternary times, with short-term changing landscapes and high geological risks in the region. During these 5,000 years, many changes in the way people related to the environment and to each other are deduced from the rock art, archaeological, and, more recently, historical records. There is evidence for the re-population of the region, showing different characteristics of settlement not witnessed before, not only in the use of sites but also in a shift from hunting and gathering to increasing food production. In the following millennia, significant changes occurred in the economic, social, and political spheres of these societies. These changes increase in intensity and speed toward the most recent period – without unduly embracing unidirectional or evolutionary narratives.

These changes can probably be related to several factors. An important one is thought to be population increase and pressure on economic resources. The lack of options for movement in an environment with patchy resource distribution would have been a critical factor that may be implicated in the beginnings of food production, with concurrent changes in other social, political, and ideological spheres. This process is summarized below, and considers the type, mode, and intensity of changes that occurred in human–environmental relationships as these relate to food production.

*Transition: ca.5,000–3,000 BP* The archaeological record suggests a process of re-population of previously unoccupied lands (during a lacuna of some 2,000 years), together with evidence pointing to a transition from a hunter-gathering mode to the

first management of plants and animals. The causes of these changes are still uncertain. The climate change between Early and Late Holocene is important enough to be considered a critical factor but probably not the only one.

The re-population process is registered in caves and shelters in the Upper Rift Valley. Only a few sites have evidence for occupation – and this is low intensity, domestic occupation. However, interestingly, most of these sites have some evidence of ritual activities, related to offering contexts comprising either human bones and/or exotic objects, obtained in the Yungas. The cultural deposits include not only the first evidence for plant and animal manipulation, but also for the first time hallucinogenic substances and specialized tool kits used to consume them.

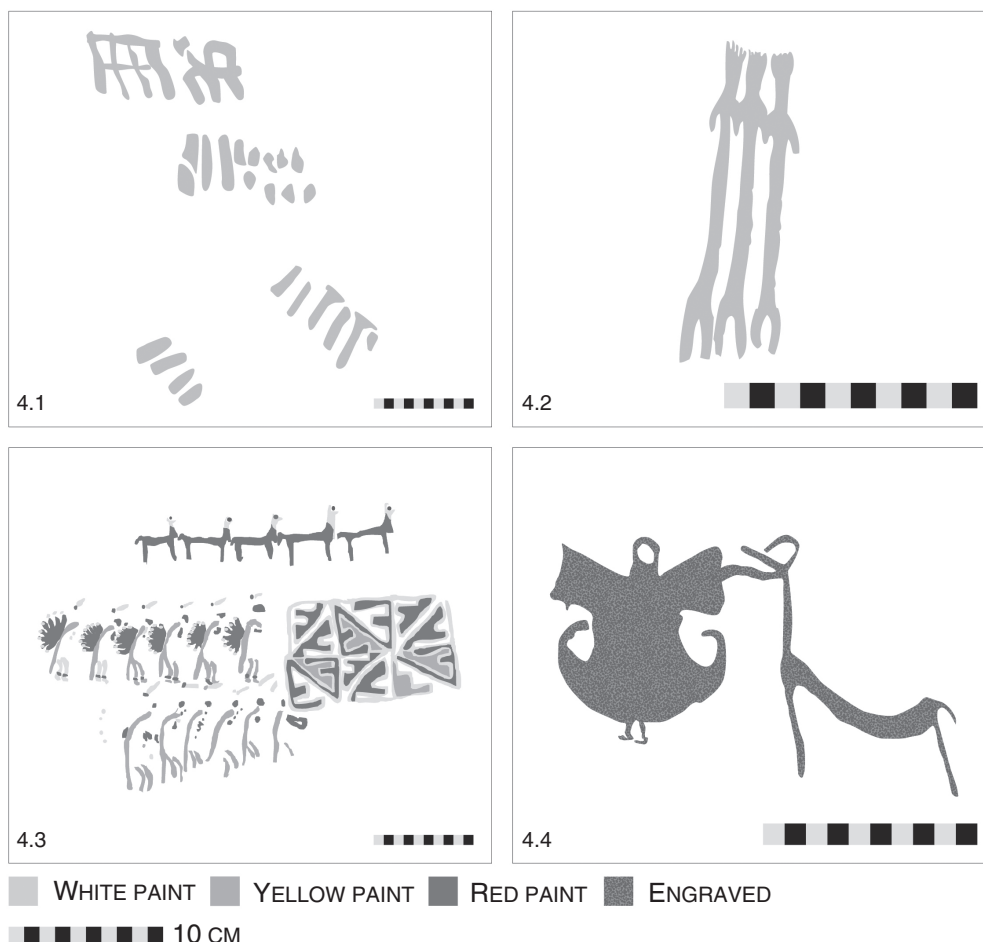
Rock art motifs have been ascribed to this time,<sup>4</sup> based on superimposition and similarities between designs depicted or engraved on objects found from offering contexts in excavations. The rock art is visible from outside the site and is placed on both the walls and ceilings. Many motifs are painted abstract forms, with both straight and curvilinear outlines executed in dark red, violet, black, and white pigments (Figure 20.4.1).

*Consolidation: ca. 3,000–2,000 BP* The archaeological record suggests ongoing and possibly increased ritual use of caves and rock-shelters located in the Upper Rift Valley during the consolidation epoch, where sites contain offerings, including human body parts, and technologically innovative material culture, such as ceramics. Six sites with radiocarbon dates spanning this period have been studied: three with mortuary offerings and four with domestic occupation.

The accepted rock art sequence is characterized by figurative motifs,<sup>5</sup> with studies of both superimposition and radiocarbon dating of deposits carried out. The motifs are visible from outside the site and occur on the walls of the caves. Motifs include anthropomorphic figures represented in frontal position with elongated bodies, short legs, and feather headdresses, forming compound motifs of three or more figures holding hands (Figure 20.4.2). They have largely been painted as linear outlines, while a few occur in black.

*Development: ca. 2,000–1,000 bp* Sites with radiocarbon dates from this period were found inside caves and shelters of the Upper Rift Valley and in a few open-air settlements closer to the Rift Valley Basin. These have survived the massive deposit removals experienced by many of the open-air sites. These sites comprise small, dispersed, early villages associated with agricultural facilities. The sites located in the Upper Rift Valley within caves have a different body of evidence. Some bear witness to scarce domestic occupation; others have only rock art motifs illustrating a tied relation between human and llama figures. For the first time in the sequence, the llama figure appears as a central theme, and in many cases there are scenes with llamas and humans together, in lines or humans holding them with ropes. This evidence suggests the development of a mixed strategy of agro-pastoral subsistence, with herding holding central importance.

The original rock art sequence defined by Aschero (1979) described an assemblage of figurative motifs that extended through to the next time period.<sup>6</sup> Hernández Llosas (2001a) has revised this schema. The site of Media Agua 1 is significant in that it



**Figure 20.4** Rock art sequence pre-annexation times. 4.1: Coraya: abstract motifs; 4.2: Inca Cueva 1: anthropomorphic figures holding hands; 4.3: Media Agua 1: scene with anthropomorphic figures, llama lines, and complex geometric compositions; 4.4: Sapagua: “shield-like” human figure with llama (all images redrawn from author’s photographs).

represents the first direct radiocarbon date from a motif (Hernández Llosas et al. 1998, 1999). Other sites with similar motifs have been attributed to this time period. The chronological attribution was based on the direct dating of the art, the position of the motifs in the overlapping sequence of Inca Cueva 1, and other observations about the location of the art within sites and its graphic characteristics.

This rock art is located not only in caves and shelters but also on small outcrops with little protection. The sites have low visibility and the motifs, because of their small size and position, are also barely visible. They are placed mainly on walls using natural cracks and hollows as part of the overall compositions and scenes. These comprise figurative motifs together with complex geometric motifs. Figurative motifs include anthropomorphs and llamas, forming compound motifs (of llama strings and/

or human rows, with up to 20 individuals). These compositions are shown in profile with very accurate depictions of body parts and clothing (Figure 20.4.3). These compound motifs in some cases portray vivid fight scenes. The painting technique is sophisticated, using an extremely thin brush to produce very fine linear polychrome paintings which are red, white, yellow, and black in different combinations.

*Intensification: ca.1,000–600 BP* The archaeological record suggests a dramatic intensification in economic production during this period, shown by an increase in agricultural and irrigation facilities. Associated with these hydrological features are larger and well-fortified villages, where new and more elaborate technologies are found (metallurgy, textiles, and complex architecture). These sites and features are mostly concentrated within the Rift Valley Basin. Excavation of these sites also suggests an increase in intra-group social differentiation, the concentration of political power, together with evidence of inter-group conflicts and violence (Nielsen 2001).

None of these sites has rock art directly associated with them; however, some sites here and some in the Upper Rift Valley have motifs attributed to this time period. The traditional rock art sequence defined by Aschero (1979) ascribes an assemblage of motifs to this phase based on the appearance of particular motifs in the overlapping sequence of Inca Cueva 1. These observations have now been expanded to the regional scale (Hernández Llosas 2001a).<sup>7</sup>

The sites themselves are clearly visible and some motifs can be seen close up. The motifs, placed on the walls of caves and the plain surfaces of boulders, comprise anthropomorphs in frontal position, simpler in detail than those from the earlier phase, but retaining some of the dress details. Some have a “shield-shaped” body and objects in their hands, which are interpreted as signs of social differentiation or political rank. They may be associated with llamas, which are depicted in profile with a higher degree of schematization than those from the previous period (Figure 20.4.4). Some lines of llama have ropes between them, suggesting that they are “caravan motifs” relating to inter-regional relations. Techniques include both painting and engraving; the paintings are black and/or white, but with much less combination of color than occurred in the earlier phase.

*Annexation: ca.600–0 BP* Approximately 600 years ago, the area was annexed to different political and economic empires. In the study area, these annexations can be summarized as follows:

*Inca conquest (ca.1450–1550 AD):* The Inca empire expanded throughout the Andean region from ca.1300 AD. According to ethnohistorical and archaeological records, Incas settled and annexed this area ca.1450 AD, subsuming the local economy, land, people, and politics under a new imperial regime. Several major and existing archaeological villages located in the Low Humahuaca Basin were abandoned, relocated, or modified and new ones were built.<sup>8</sup> Inca technology is found within many sites, and traces of the Inca road systems are present everywhere.

No rock art was associated with the Inca presence until recently, when new data were recorded from Humahuaca (Hernández Llosas 2006). Sites were located not only in the Upper Rift Valley but also on boulders located closer to the Rift Valley Basin. The chronological assignment was conducted by cross-checking different kinds of data, including analysis of designs (style), the spatial distribution of sites, associa-

tion with other site types, the sequencing of superimpositions deploying formal methods, and, finally, Spanish chronicles using an informed method (Hernández Llosas 2006). The sites and the motifs are in an open context and can be seen from some distance. The iconographic repertoire has stylistic and thematic variability,<sup>9</sup> ranging from serpentine motifs and “cup marks” (Figure 20.5.1) to human figures interpreted as Inca soldiers (Figure 20.5.4), axe-shaped objects (Figure 20.5.2), and abstract motifs including circles and ovoid shapes (Figure 20.5.5). The motifs are either painted, mainly in black or white pigment, or engraved using a combination of scoring and linear pecking.

*Spanish invasion* (<1635–1800 AD): Not long after the Inca empire annexed this area, another expanding kingdom – the Spanish – invaded. Indigenous resistance occurred for some hundred years and prevented the invaders taking effective possession of the land, but by the beginning of the seventeenth century the Spanish had defeated the Indians by force of arms and the colonial administration commenced. The documented archaeology for this period is minimal, largely due to few archaeological research projects addressing this dynamic period of resistance. Rather, the issue has been extensively analyzed by ethnohistorians and anthropologists from sources other than material culture. Nevertheless, some archaeological sites have yielded valuable information<sup>10</sup> relating to mortuary practices.

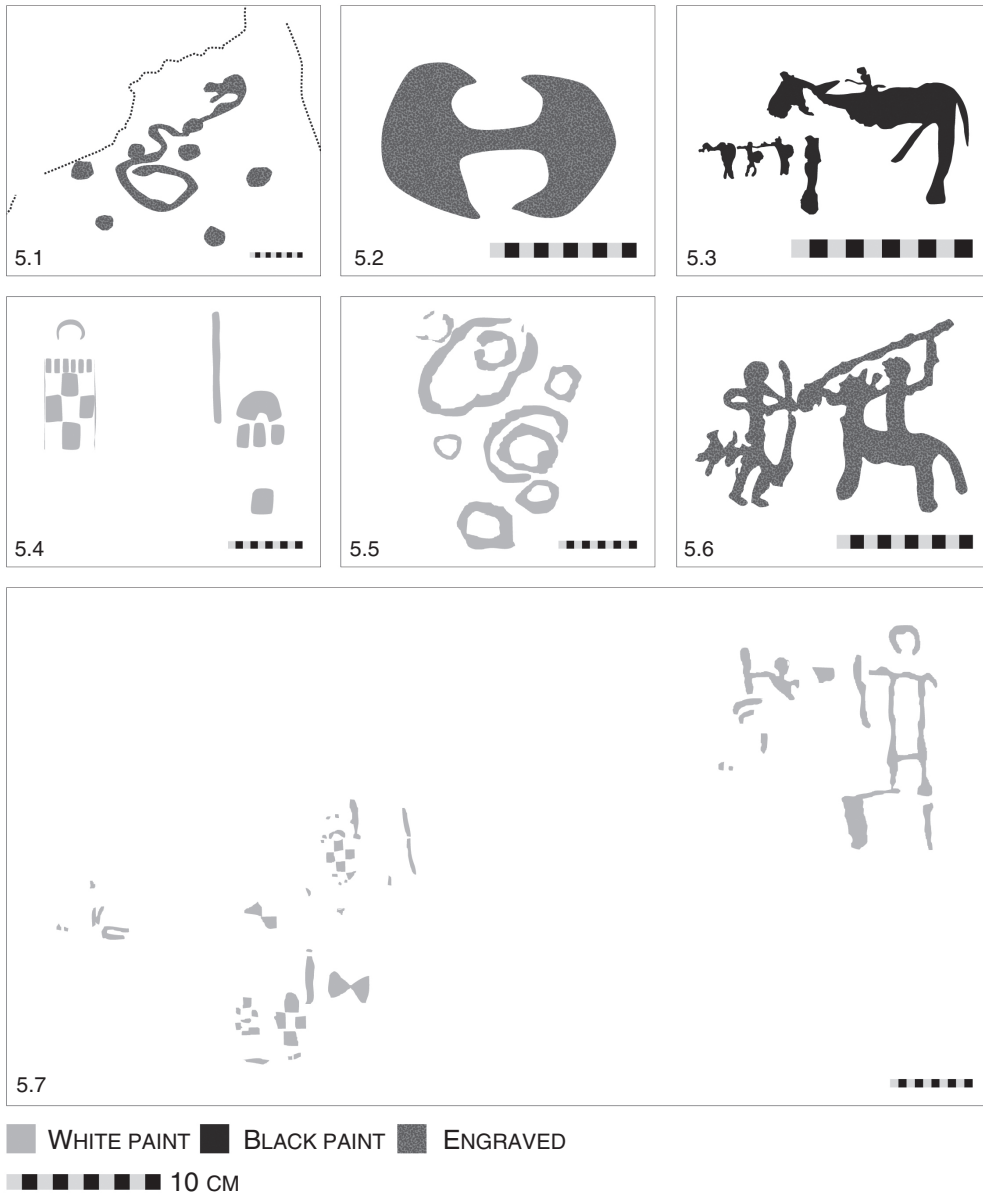
Rock art associated with these historical events<sup>11</sup> depicts horsemen engaged in battle scenes from the war of resistance (Figures 20.5.6 and 20.5.7). In some cases, they are also associated with geometric motifs, such as simple, outlined, ovoid shapes (Figure 20.5.5), which are characteristic for this time period, and horsemen with Indian prisoners marching (Figure 20.5.3). They have been painted mainly in black or white pigment with some engravings as well. The motifs are in an open context, being situated on the walls of caves and boulder faces.

*Republican times* (ca.1800–1950 AD): The Spanish colonial regime came to an end at the beginning of the nineteenth century, with the expansion and fall of the Napoleonic empire, and then the expansion of the English empire over Spanish colonies. By this time, the American colonies had engaged in the War of Independence, resulting in the Nation States (e.g., Argentina, Chile, Bolivia, Peru, and southern Andean countries in South America). The Humahuaca rift valley system now became part of the Argentinean Republic. No rock art production has been assigned to this last period,<sup>12</sup> as yet.

## SYMBOLIC DISCONTINUITIES

The long history of human presence in Quebrada de Humahuaca, with its environmental particularities, provides a unique opportunity to examine processes related to cultural appropriation of space. In this case study, we can analyze the capacity rock art has to mark places of social significance, which, I argue, transforms them into meaningful landscapes through time.

Among the many environmental particularities of Quebrada de Humahuaca is the amazing visual impact of the Andean geology, with clearly exposed and folded strata. At specific locales, these outcrops appear as twisted rocks with strong visual characteristics. Many of these dramatic locales were used recurrently through time to



**Figure 20.5** Rock art sequence during annexation times: 5.1: Campo Morado: cup marks plus snake-like motif; 5.2: Sapagua: axe-like motif; 5.3: Pintoscayoc 1: scene with Spanish riders and indigenous prisoners; 5.4: Inca Cueva 1: frontal human figures with clothing and weapons understood as Inca soldiers; 5.5: Pintoscayoc 1: group of ovoids; 5.6: Sapagua: vivid fighting scene between Spanish horseman and Indian on foot; 5.7: Pintoscayoc 1: scene with Inca soldiers and fighting Indian against Spanish horseman (all images redrawn from author's photographs).

perform different kinds of activities (see Figure 20.3). The potential role that rock art may have played in transforming this environment into contemporary or consecutive intertwined landscapes is of special interest.

The rock art sequences, summarized above, serve to illustrate that particular sites were used repeatedly through time, suggesting that those spots were special places with an enduring significance. However, the changes observed in the theme and style of motifs, which have been consecutively executed, suggest that the significance of these locales has undergone major transformation with the passage of time. These locales include caves and rock-shelters, located in outcrops with strong colors. They are highly visible in the landscape and are perceptible landmarks (see Figure 20.2). Additionally, these sites have endured mass erosion events and therefore have the ability to provide a “memory” of different past cultural landscapes, which register larger social processes occurring in Quebrada de Humahuaca through time.

From the earliest period of occupation, the archaeological evidence in general, and the rock art specifically, appear constrained to these places (likely due to taphonomic factors), while for later times it expands to a broader range of localities. This broadening record over landscape, together with an increase of naturalistic rock art in later phases, allows deeper understandings about the social and symbolic systems (and discontinuities) of resident groups.

The period between 11,000 and 5,000 BP, when hunter-gatherers prevailed, still has many unanswered questions concerning rock art production. Rock art production in caves and shelters may be missing due to exfoliation, and also other types of rock art associated with open-air camps may have been completely erased by the heavy erosional episodes discussed above. During the period 5,000–3,000 BP, abstract motifs in the rock art match designs found on objects that were deposited as part of “offering” contexts in excavations, thereby providing some clues as to their possible function in votive activities. This period witnessed a marked change from solely hunting and gathering to subsistence herding and farming. These small-scale societies were likely changing their perspective from land as a subject, moving around it, to greater sedentism over smaller territories, creating more fixed ties to place, with land now being viewed spatially as an object of labor (*sensu* Tilley 1994). In this scenario, the land is marked with offerings, which may have represented a means to secure their cultural appropriation of it and to symbolically reassure their access to it.

By approximately 3,000–2,000 BP, the appearance of the first figurative motifs in the rock art sequence marks a shift from a more abstract repertoire to a clear focus on humans as the subject of representation. The paintings located on the walls of caves, shelters, and boulders are difficult to tie in functionally with the components found in excavations, which correspond to short-term domestic activities. The painting events may be associated with ritual activities, performed within these sites at specific times and with particular purposes in mind. While their role is somewhat elusive, their location in the same places that arguably had social significance in previous times suggests symbolic continuity and discontinuity.

From 2,000 to 1,000 BP, a new form of rock art appears that was different not only in the graphic and technical characteristics of the figurative motifs depicted, but also in the way it was produced and the places that were selected. The chronological ascription of these motifs deserves a special mention as a direct date was obtained

from a figure at Media Agua consistent with this age range (Hernández Llosas et al. 1998, 1999). The naturalistic characteristics of these motifs also deserve mention because they provide information on forms of dressing, weaponry, and other objects<sup>13</sup> associated with the human figures depicted. These details suggest the representation of different groups engaged in interaction (which may have been violent), with difference in identity especially stressed via the depiction of dressing modes and further attributes.<sup>14</sup> It is also worth noting that the human–llama associations, and the numeric importance of this animal in the art, suggest that it had great economic and ideological importance during this period.

Taking all of the available evidence into account, a dramatic change in the pattern of land use is witnessed, and most profoundly with the establishment of the first farming, and herding over extended territories. We are arguably witnessing the beginning of major economic, social, and ideological changes at a regional scale. The appearance of rock art picturing conflicts between different groups may very plausibly be related to struggles to set up, maintain, and extend rights of access to herding territories. The location of the rock art sites and the characteristics of the motifs suggest that they have played multi-purpose symbolic functions and encoded different messages for different audiences at both the intra- and inter-group scale (see Ross et al. 2008). They have marked territories, commemorated past events (battles, encounters), and were also likely used as part of ceremonies relating to these social actions.

The next phase of ca.1000–600 BP contains archaeological evidence suggesting a completely different pattern of land use, with a significant expansion of agricultural fields. This expansion, together with evidence of an increase in the number and size of villages associated with these fields, points to an intensification of production favoring agriculture over herding. This represents a turning point in the regional archaeological sequence as many profound changes were occurring. Population is thought to have increased, and economic intensification is witnessed in agglutinated pre-urban sites in the lower part of the valley associated with agricultural intensification. At the regional scale, scholars now argue for the presence of a single polity, occupying the entire valley, with evidence for ongoing processes of social differentiation, together with the emergence of more complex political and social organization. The development of a much larger-scale society may have served to amplify fixed and codified relations with the land, resulting in the expression of much stronger territoriality.

Rock art attributed to this time period is based on Upper Rift Valley rock art sites where relative chronology can be assessed by superimposition sequences. These observations of relative chronology were confirmed by cross-checking other rock art sites at the macro-regional level (including the Argentinean northwest and northern Chile). The rock art motifs include, on one hand, human figures with displays of social and/or political differentiation, shown by their different body representations and headdressing detail. This is especially the case in the so-called “shield shapes” where the human body is depicted as if it is carrying a shield (see Figure 20.4.4). These shapes are understood to be figures with higher rank. The art is seen to reflect the process of greater intra-group differentiation and concentration of power – perhaps as a way of symbolically validating the emergence of new elites. On the other hand, the presence of lines of llamas with loads, led by human figures (the “caravan”

motifs), is considered to belong also to this time and is seen to be connected with an increase in inter-regional exchange. Both types of representation can symbolically represent differentiated rank within the group and increasing trade and exchange relations with even more distant groups.

From 600 to 400 BP, these regions are annexed by the Andean empire. The local polity (or polities) was subsumed within the *Tawantinsuyo*, and this process has a correlate in rock art production. On one hand, cup marks and serpentine figures, located within agricultural fields (Figure 20.5.1), could well be linked with the Inca register and notation system, while other types of motifs, such as axes (Figure 20.5.2), and representations of Inca soldiers located in close proximity to the Inca roads or Capacñam (Figure 20.5.4). Both activities are highly symbolic but likely produced with very different purposes in mind.

With the Spanish invasion, a completely alien society imposed itself on this landscape. This traumatic contact process is witnessed in the rock art with the appearance of (European) riders and in the themes represented, such as the marching of prisoners (Figure 20.5.3) and fighting scenes between indigenous people, using bow and arrow, facing armored Spanish riders (Figure 20.5.6 and 5.7). These scenes, representing the resistance wars against the invaders, clearly had a symbolic narrative function in depicting events that were actually taking place.

When this rock art data are considered at the regional scale, they provide a tool to inquire about the ways in which social memory and practice can physically appropriate space to transform it into landscape. Following Bradley's (1997) argument that rock art imbues the land with social significance, it is interesting to note here that there will be many social significances attributed to the land as social groups marked the land with different referential frameworks, both at the same time and through time. In the current case study, the evidence suggests a sequence whereby, in the same places, specific sections of the societies gave their own social significance to them by marking the land with rock art. I argue that the different social significances were related to practices of offering, ritual, territorial marking, commemorative activities, differentiated ranking, notation systems, and territorial boundaries (pathways). This sequencing ended with narrative activities associated with the traumas and realities of invasion by the Spanish.

I conclude that most of the deep-time sequences illustrate symbolic discontinuities due to differences in groups engaging in new modes of production, while it is only in more recent phases that the symbolic discontinuities are associated with different groups of people (invaders) performing various activities to mark the land for different functional purposes (relating to power, prestige, the rise of polities, and then resistance).

It is noteworthy that a multiplicity of cultural landscapes can coexist within the same land. Archaeology usually only has access to partial evidence to fulfill the task of identifying the "social codes and hegemonic practices that have resulted in the production of particular senses of place, exploring the physical and metaphysical marking of place as a means of accessing social history" (Bradley 1997). Decoding evidence from rock art to contextualize the process by which people appropriate land in different ways – as I have attempted here – can be a fruitful starting point with which to address the existence of landscapes that are intertwined through space, time, and the complex processes of social signaling.

## NOTES

- 1 Rock art was considered an important part of archaeological evidence and has been included in the scientific research since the end of the nineteenth century (Boman 1908). From these first studies, much research has been carried out by different teams of scholars, from diverse institutional and theoretical backgrounds. By synthesizing all the available data, it is possible to derive a general picture of the archaeological sequence and provide some insights about the correlation of rock art with other material culture.
- 2 These approaches specifically addressed rock art characteristics and their chronological succession in the archaeological sequence. Different analytical units related topography (location) to representation (graphic attributes, such as techniques, shapes, colors, etc.) and chronology (conditions of the motifs, superimpositions, etc.). Two scales – “stylistic groups” (site scale) and “stylistic modalities” (regional scale) – were used to establish single rock art components of sites which could then be compared with artifact assemblages (Aschero 1979; Hernández Llosas 2001a).
- 3 The sequence established in Quebrada de Inca Cueva considered the appearance of abstract motifs early in the superimposition sequence and also on excavated finds within Inca Cueva 4. Early dates were obtained from the earlier layers where pigments, vestiges of pigment preparation, and brushes were found. Taphonomic conditions and rock surface fragility over such a large time-span are critical issues as early rock art production could have been completely lost. Conversely, the presence of pigment and brushes in older layers of the sites indicates the use of paints, but these by themselves cannot attest to the production of abstract art. Finally, similarities in these motifs can be found with designs depicted on objects found in excavations dating to later phases (Aschero 1975).
- 4 This rock art is named Stylistic Group A by Aschero (1979) and was divided in two units: A1 (for the earlier phase) and A2 (for the more recent phase; Aschero and Podesta 1986). Taking into account the observations made above, the span of 5,000–3,000 BP fits the evidence best (cf. Hernández Llosas 2001b). These observations are reinforced by the appearance of Coraya (Fernández Distel et al. 1981), a site outside Quebrada de Inca Cueva, in which this type of rock art and the earlier excavation assemblages match.
- 5 Named Stylistic Group B by Aschero (1979), and found in Inca Cueva 1 and Inca Cueva Alero 1 with consistent radiocarbon dated deposits (Aschero et al. 1991). Outside Inca Cueva, Cueva Cristobal (Hernández Llosas 2001a) has similar motifs.
- 6 Named Stylistic Group C by Aschero (1979), this is found in Inca Cueva 1 and divided in to C1, C2, and C3 in the sequence. With the Media Agua direct date and observations at a regional scale, sites such as Chayamayoc and Hornaditas (Fernández Distel 1983a, b), Coctaca and Inca Cueva 1 (Hernández Llosas 2001a), and El Morado (Fernández 2000), a stylistic modality was proposed previously (Hernández Llosas 2001a). This includes some motifs defined as C1 in the Aschero sequence, while others are believed to correspond not only to later times but also to a completely different socio-symbolic process.
- 7 In the Upper Rift Valley the caves are Inca Cueva 1, while closer to the Rift Valley Basin they comprise boulder sites such as Sapagua and Cerro Negro.
- 8 Sites such as Los Amarillos (Nielsen 1997), Pucara de Tilcara (Tarragó and Albeck 1997), Volcán (Garay da Fumagalli and Cremonte 1997), La Huerta, Coctaca (Raffino et al. 1986), and Cienaga Grande (Olivera and Palma 1997) all show evidence of this process.
- 9 The rock art sites located in the Upper Rift Valley are Inca Cueva 1 and Pintoscayoc 1, showing mainly Inca soldiers and circumferences or axes (Coctaca 1 and Inca Cueva 1). On boulders located closer to the Rift Valley Basin, in Sapagua, and Cerro Negro, human figures have been recorded with these attributes. Campo Morado is the closest site to a village, and these motifs were believed to be associated more with Inca agricultural and ideological practices, some of which also appear in Sapagua. A subset of these motifs is included in Aschero’s (1979) rock art sequence as belonging to Stylistic Group C2.

- 10 Pintoscayoc 3 (Hernández Llosas 1998, 2006) and La Falda de Tilcara (Rivolta and Nielsen 1996–1998) are both associated with mortuary deposits.
- 11 This rock art is located in caves or shelters like Pintoscayoc 1 (Hernández Llosas 1998, 2005), Cerro Pircado and Cuevón de los Jinetes (Hernández Llosas 2001a), and open-air boulders sites such as Sapagua and Cerro Negro. Motifs include mainly horsemen in scenes with other figures depicted in profile, and sometimes with fighting scenes showing Spanish riders and Indian warriors on foot with bow and arrow. Some schematic human figures are shown in frontal position with hair styles and spears thought to be the representation of Inca soldiers. Some of these motifs are included in Aschero's (1979) rock art sequence as belonging to Stylistic Group C1 and C2.
- 12 Some motifs included in Aschero's (1979) rock art sequence, comprising simple naturalistic human figures executed in red pigment, found in Inca Cueva 1 and defined as Stylistic Group C3, could correspond to this time period.
- 13 Representations of pipes and observations about their relative chronology by superimpositioning at Inca Cueva 1 and other sites are supported by excavated pipe specimens of similar shapes and sizes and their radiocarbon determinations.
- 14 El Morado and Chayamayoc are particularly important because there are numerous battle scenes between two different groups of people, with up to 10 or more individuals in each group. The groups are differentiated by clothing and hair styles, and are portrayed as attacking each other with bow and arrow.

## REFERENCES

- Aguerre, A., Fernández Distel, A., and Aschero, C., 1973 Hallazgo de un sitio acerámico en la Quebrada de Inca Cueva (Provincia de Jujuy). *In Relaciones*, New Series 7, Buenos Aires.
- Aschero, C., 1975 Motivos y objetos decorados del sitio precerámico Inca Cueva 7 (Provincia de Jujuy). *Antiquitas* 20–21, Buenos Aires.
- Aschero, C., 1979 Aportes al estudio del arte rupestre de Inca Cueva 1 (Depto. Humahuaca, Jujuy). *Antiquitas* 2:419–459. *Actas de las Jornadas de Arqueología del Noroeste Argentino*, Buenos Aires.
- Aschero, C., and Podesta, M.M., 1986 El arte rupestre en asentamientos Precerámicos de la Puna argentina. *Runa*, vol. 16. ICA, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Aschero, C., Podesta, M.M., and García, L.C., 1991 Pinturas rupestres y asentamientos cerámicos tempranos en la Puna argentina. *Arqueología* 1:9–49. *Revista de la Sección Prehistoria ICA, Facultad de Filosofía y Letras, Universidad de Buenos Aires.*
- Boman, E., 1908 *Antiquités de la région andine de la République Argentine et du désert d'Atacama*, 2 vols. Paris: Imprimerie Nationale.
- Borrero, L.A., 1994 Arqueología de la Patagonia. *Palimpsesto*, Revista de Arqueología No. 4.
- Bradley, R., 1997 *Rock Art and the Prehistory of Europe: Signing the Land*. London: Routledge.
- Chippindale, C., and Nash, G., eds., 2004 *The Figured Landscapes of Rock Art: Looking at Pictures in Place*. Cambridge: Cambridge University Press.
- Fernández, J., 1988–1989 Ocupaciones agroalfareras (2860 ± 160 años AP) en la cueva de Cristóbal, Puna de Jujuy, Argentina. *In Relaciones*, nueva serie 17(2). Buenos Aires, SAA.
- Fernández, J., 1997 Arqueología de la cueva de El Portillo, Departamento de Humahuaca, Provincia de Jujuy. *In Avances en Arqueología* 3:41–70. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Fernández, J., 2000 Escenas de guerra en el arte rupestre de la cueva del Cerro Morado, cerca de Tres Cruces, Jujuy. *Pacarina* 1(1):86–117. Universidad Nacional de Jujuy.

- Fernández Distel, A., 1983a Continuación de las investigaciones arqueológicas en la Quebrada de La Cueva: Chayamayoc, Provincia de Jujuy, República Argentina. *Scripta Ethnológica, Supplementa* 2:43–52.
- Fernández Distel, A., 1983b Pictografías de Coctaca (Quebrada de Humahuaca, Jujuy, Argentina). *Indiana* 8:279–294. Berlin.
- Fernández Distel, A., 1986 Las cuevas de Huachichocana: su posición dentro del precerámico con agricultura incipiente del Noroeste argentino. *In Beitrage Zur Allgemeinen und vergleichenden Archäologie* 8:353–430. Mainz Am Reim: Verlag Phillip von Zabern.
- Fernández Distel, A., Hernández Llosas, M.I., Casiraghi, M., and Ventura, B., 1981 Arqueología de una quebrada transversal al valle de Humahuaca: Coraya. Arte rupestre y fechado radiocarbónico de la cueva “Peña Aujero.” Córdoba: Publicaciones del Instituto de Antropología, Universidad Nacional de Córdoba, Facultad de Filosofía y Humanidades, nueva época 36:23–45.
- Garay de Fumagalli, M., and Cremonte, M.B., 1997 Correlación cronológica del yacimiento de Volcán con sitios de los valles orientales (sector meridional, Quebrada de Humahuaca). *Avances en Arqueología* 3:191–212. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- García, L.C., 1997 Inca cueva: ocupación a partir del formativo inferior inicial. *In Avances en Arqueología* 3:71–76. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Gradín, C., 1978 Algunos aspectos del análisis de las manifestaciones rupestres. *Revista del Museo Provincial*, año 1, vol. 1, Neuquén.
- Hernández Llosas, M.I., 1998 Pintoscayoc: arqueología de quebradas altas en Humahuaca. PhD thesis, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Hernández Llosas, M.I., 2001a Arte rupestre del noroeste Argentino: orígenes y contexto de producción. *Historia Argentina Prehispánica* 1:389–446. Córdoba, Argentina: Editorial Brujas.
- Hernández Llosas, M.I., 2001b Tres momentos, tres contextos, un lugar: variaciones temporales y contextuales en el arte rupestre de la Quebrada de Humahuaca, Jujuy, Argentina. *Boletín del Museo Chileno de Arte Precolombino: Arte Rupestre, Asentamiento y Paisaje* 8:59–82. Ibáñez, F.G., ed. Santiago, Chile.
- Hernández Llosas, M.I., 2005 Pintoscayoc and the Archaeology of the Arid Humahuaca Rift Valley, North-Western Argentina. *In 23° South: Archaeology and Environmental History of the Southern Deserts*. M. Smith and P. Hesse, eds. Pp. 186–197. Canberra: National Museum of Australia Press.
- Hernández Llosas, M.I., 2006 Inkas y españoles a la conquista simbólica del territorio Humahuaca: sitios, motivos rupestres y apropiación cultural del paisaje. *Boletín del Museo Chileno de Arte Precolombino* 11(2):9–34. Santiago, Chile.
- Hernández Llosas, M.I., Renard de Coquet, S., and Podesta, M., 1983 Antumpa: (Dpto. Humahuaca, Prov. de Jujuy). Prospección, excavación exploratoria y fechado radiocarbónico. *Noticias. In Cuadernos* 10. Instituto Nacional de Antropología, Buenos Aires.
- Hernández Llosas, M.I., Watchman, A., and Southon, J., 1998 Fechado absoluto y análisis de pigmentos para las pinturas rupestres de Pintoscayoc (Departamento Humahuaca, Jujuy). *Estudios Sociales del NOA* 2(1):31–60. *Revista del Instituto Interdisciplinario Tilcara*
- Hernández Llosas, M.I., Watchman, A., and Southon, J., 1999 Pigment Analysis and Absolute Dating of Rock Paintings: Jujuy, Argentina. *In Dating and the Earliest Known Rock Art*. M. Streker and P. Bahn, eds. Pp. 67–74. Oxford: Oxbow Books.
- Krapovickas, P., 1969 Instalación aborígen en el Pucará de Yacoraité, Provincia de Jujuy, República Argentina. *Etnia* 10:8–12. Olavarría.
- Lavalle, D., Julien, M., Karlin, C., Garcia, L., Pozzi-Escot, D., and Fontugne, M., 1997 Entre desierto y Quebrada: Tomayoc, un Alero en La Puna. *Avances en Arqueología* 3:9–40. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.

- Nielsen, A., 1997 Tendencias temporales en la cultura material de la Quebrada de Humahuaca (Jujuy, Argentina) ca. 700–1650 DC. *Avances en Arqueología* 3:147–190. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Nielsen, A., 2001 Evolución social en la Quebrada de Humahuaca: historia Argentina prehispánica. Pp. 171–264. Córdoba: Ed. Brujas.
- Núñez, L., Grosjean, M., Messerli, B., and Screier, H., 1994 Cambios ambientales holoceánicos en la Puna de Atacama y sus implicancias paleoclimáticas. *Estudios Atacameños* 12:31–40. Universidad del Norte, San Pedro de Atacama, Chile.
- Olivera, D., and Palma, J., 1997 Cronología y registro arqueológico en el formativo temprano en la región de Humahuaca. *Avances en Arqueología* 3:77–100. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Palma, J., 1998 Patrones de intercambio en la Quebrada de Humahuaca, noroeste argentino. *Estudios Atacameños* 14:121–130.
- Raffino, R., Alvis, R.J., Olivera, D., and Palma, J.R., 1986 El universo Humahuaca y los Andes del Kollasuyu. *Inka: Arqueología, Historia y urbanismo del Altiplano Andino*: 21–36. Buenos Aires: Ed. Corregidor.
- Rivolta, M.C., and Nielsen, A., 1996–1998 La Falda: un cementerio hispano indígena en Tilcara (Provincia de Jujuy). *Palimpsesto Revista de Arqueología* 5:173–182. Buenos Aires.
- Ross, J., Valenzuela, D., Hernández Llosas, M.I., Briones, L., and Santoro, C., 2008 More than the Motifs: The Archaeological Analysis of Rock Art in Arid Regions of the Southern Hemisphere. *Chúngara* 40:273–294. Número especial. *Revista de Antropología Chilena*, Universidad de Tarapacá, Arica, Chile.
- Tarragó, M.N., and Albeck, M.E., 1997 Fechados radiocarbónicos para el sector medio de la Quebrada de Humahuaca. *Avances en Arqueología* 3:101–130. Instituto Interdisciplinario Tilcara, Facultad de Filosofía y Letras, Universidad de Buenos Aires.
- Tilley, C., 1994 *A Phenomenology of Landscape: Places, Paths and Monuments*. London: Berg.
- Zaburlin, M.A., Mamani, H.E., Dip, S., and Albeck, M.E., 1994 *JujTil* 41: Alfarquito, variaciones sobre un clásico. En *Actas del XI Congreso Nacional de Arqueología Argentina*. San Rafael.