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Rock Art in Central and South America: Social Settings and Regional Diversity

Andrés Troncoso, Felipe Armstrong, and Mara Basile

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Abstract and Keywords

Central and South America is a vast region, where a wide range of different societies established, transformed, disappeared, and endured. This kaleidoscope of peoples offers a particularly rich and diverse body of rock art in terms of its historical, technical, visual, and spatial features. The first sections of this chapter briefly introduces the reader to this diversity, as well as to the history of rock art research, presenting and discussing the different theoretical and methodological frameworks used. The authors discuss the role that rock art played—and still plays—for different groups, which they have grouped in terms of their common socioeconomic strategies. The authors argue that rock art research from this region can contribute to the wider understanding of rock art in the world, offering its materialistic and archaeological approaches ranging from the study of social complexity, the domestication of animals, mobility, and memory.

Keywords: South America, Central America, rock art, theoretical approaches, hunter-gatherers, agrarian communities, pre-Hispanic states

Introduction

Central and South America comprise a vast region covering nearly 18,600,000 square kilometres, characterized by a great environmental and geographic diversity. From the most arid desert in the world in northern Chile, through the Patagonian steppe, to the imposing mountain range of the Andes, the vastness of the Amazon jungle and the tropical forests of Central America, human communities have lived in this territory for at least 13,000 years (Steele & Politis 2009), following various historical trends and methods of engaging with the environment. This diversity forces us to divide this region into areas with similar environmental characteristics and shared historical trajectories or processes (Lumbreras 1981) (Figure 1).

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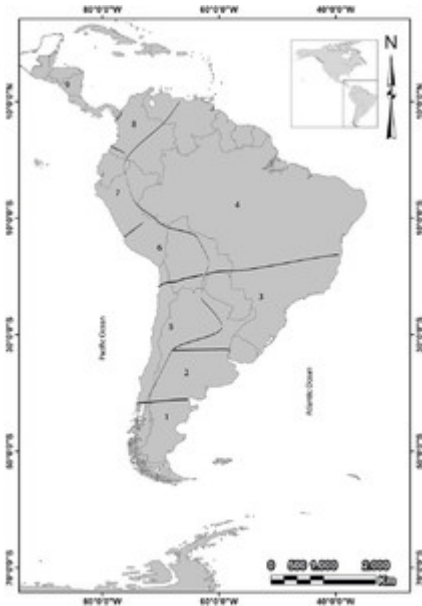


Figure 1 Map of Central and South America divided, based on Lumbreras (1981) into areas with similar geographic and environmental characteristics. References: (1) Patagonia, (2) Pampa, (3) Chaco, (4) Amazonia, (5) Southern Andes, (6) Central-South Andes, (7) Central Andes, (8) Northern Andes, (9) Central America and the Caribbean.

For much of the region's history, many societies marked the landscape by producing rock art that, as a result of its high visibility, location in the landscape, and practices tied to its production, became active in multiple dimensions of social life. The widespread distribution and making of rock art over long periods of time has resulted in a wide range of visual attributes with variable spatial distributions, reflecting and promoting various historical processes.

In this chapter, we address the archaeology of Central and South American rock art via descriptions and discussion of three aspects that help reveal not only a research tradition that remains largely unknown outside of this region, but also the social dynamics in which rock art operated. First, we provide a general description of visual and technical assemblages of rock art for this broad region, evaluating along the way their spatial and temporal patterning. Second, we address the theoretical and methodological frameworks that have been used to interpret this art in a more global context. Third, we make a brief evaluation of how practices of rock art production and consumption relate to different types of communities and sociohistorical contexts across the region. In doing so, we hope to provide a panorama that allows us to discuss both the challenges that we face, along with Central and South America's potential to contribute to a global understanding of rock art.

Research about rock art has developed unequally across the region: the type of imagery, their frequencies, the nature of the rock 'canvas', and the methodological and theoretical frameworks employed vary (sometimes greatly) among countries. For that reason, this chapter primarily relies on examples of areas where research has been most focused—for

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example, the Andes and Patagonia—although we do this without overlooking the work carried out by researchers in other areas of the Central-South American ‘continent’.

This chapter does not intend to be a detailed catalogue of prehistoric imagery or rock art styles (for this, see, e.g., Dubelaar 1986, 1995; Greer 2001; Hayward, Atkinson, & Cinquino 2009; Künne & Strecker 2008; Schobinger & Strecker 2001).

Characterizing Rock Art in Central and South America

Central and South America has a wide and varied repertoire of rock art, making any general characterization difficult. Nevertheless, it is possible to identify three broad technological types: geoglyphs, pigment art (paintings, drawings, stencils, and prints), and petroglyphs. These groups are each treated separately in light of the research questions they have addressed, their state of preservation, and the particular methodological requirements that their materiality demands.

Without doubt, South America’s geoglyphs are amongst the best known in the world, thanks to the Nazca lines (c. 1–600 CE) along the southern coast of Peru (e.g., Clarkson 2014), with some precedents in the earlier Paracas culture (400 BCE–100 CE) (Stanish, Tantaleán, Nigra, & Griffin 2014). Geoglyphs were also produced elsewhere in South America, although their distribution does not extend further south than 30° S latitude. Geoglyphs can be found in Colombia (Valenzuela & Clarkson 2014), Venezuela (Cruxent 1949), Bolivia (Abanto 2009), Peru (Clarkson 2014), Chile (e.g., Briones 2006; Pimentel 2011), parts of northwestern Argentina (e.g., Callegari & Raviña 2000), and Brazil (Pärssinen, Schaan, & Ranzi 2009; Ranzi 2003) (Figure 2).

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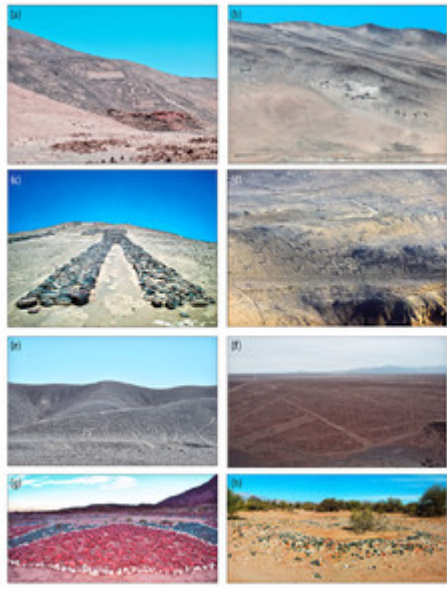


Figure 2 Some examples of geoglyphs of South America. A. Cerro Pintados, Pampa del Tamarugal North of Chile. B. Site LL-60, Lluta Valley, North of Chile (photo: Daniela Valenzuela). C. Site LL-112, Lluta Valley, North of Chile (photo: Daniela Valenzuela). D. Tiliviche geoglyphs, Tarapacá, Chile (photo: Daniela Valenzuela). E. Paracas geoglyph, Llipata, Ica, Peru (photo: Henry Tantalean). F. Nasca geoglyph, Nasca, Peru (photo: Henry Tantalean). G. *Estrella de Vinchina*. Geoglyph reconstructed, La Rioja, Argentina (courtesy of Adriana Callegari, photo: Micaela García). H. *Rueda de Piedra*, La Rioja, Argentina (courtesy of Adriana Callegari, photo: Gisela Spengler).

The production of geoglyphs was based on two techniques, which could be combined: the addition of rocks or soil to the ground surface (Figure 2B,C,D,G,H), and/or their extraction (Figure 2A,E,F). Although no comparative studies have yet been made, all available evidence suggests that the making of geoglyphs changed through time, their meanings varied across space and through time, and they had a variety of functions. For example, although the geoglyphs of northern Chile were first made around 500 BCE, they did not become popular until after 1000 CE (Briones, Núñez, & Standen 2005). In contrast, geoglyphs were produced between 500 and 1000 CE in Argentina (Callegari & Raviña 2000) and between 900 and 1400 CE in Brazil (Pärssinen et al. 2009). This heterogeneity is also found in the geoglyph's visual elements: whereas those from Brazil essentially correspond to geometric constructions (circles and squares), in northern Chile representations of camelids—animals of economic and symbolic relevance among pre-Hispanic communities—and anthropomorphs are abundant, with other, nonfigurative motifs also being found (Figure 2B,D,E). In the case of Nazca, although there are figurative motifs, camelids and anthropomorphic motifs are not common. Straight lines predominate not only in Nazca, but also in the geoglyphs of the Paracas culture (Figure 2F). In northwest

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Argentina, geoglyphs consist of terrace structures, which are covered with coloured rocks and form triangular designs (Figure 2G).

The function ascribed to geoglyphs also varies. The most studied cases are those of Nazca and northern Chile. For Nazca, numerous explanations have been posited, including associations between geoglyphs and astronomical phenomena, demarcations of subterranean sources of water, and pilgrimage routes (Aveni & Silverman 1991; Reinhard 1985). The geoglyphs of northern Chile are thought to relate to rituals associated with the roads used by llama caravans. Here, the geoglyphs are dispersed along these routes, connecting the coast with the highlands (Briones 2006; Núñez 1976). The geoglyphs of Brazil (Pärssinen et al. 2009; Schaán et al. 2012) have been interpreted as spaces of social gathering. Despite the fact that other remains of material culture have been found on the surfaces of these sites, both geoglyph-associated activities and geoglyph production have been little-explored issues. Although it is widely recognized that geoglyphs did not require high labour investments for their construction (Valenzuela & Clarkson 2014), they did usually require organized, collective workforce arrangements to delineate the motifs and to move the rocks and/or dirt.

Pigment art and petroglyphs are widespread across the region, and no specific trend in their themes or chronologies has yet been identified. Both pigment art and petroglyphs have been associated with Holocene hunter-gatherers, agricultural societies, state societies, and with the period following the European 'conquest'. However, it seems that paintings were produced more often in the context of early hunter-gatherers, in contrast with engravings that tend to be associated with more sedentary societies (Greer 2001; Guffroy 1999).

The imagery associated with pigment art (Figure 3) and petroglyphs is varied, although some very general trends can be seen. For example, in northeast Brazil figurative elements and a range of scenes predominate. These vary from individual human figures and animals (e.g., birds and deer) to sets of anthropomorphs in acrobatic formation or depicting hunting or sexual relations (Pessis 2003; Prous 2007). In contrast, the Andean area has frequent representations of camelids, both wild (guanaco, *Lama guanicoe*) and domestic (llama, *Lama glama*) (e.g., Berenguer 2004; Guffroy 1999). These animals are represented singly, in packs, or in association with humans in scenes of hunting, animal enclosures, or grazing. Anthropomorphs often stand out by their attire, including headgear, both of which were important identity markers among local communities (Murra 2002).

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Figure 3 Examples of rock art paintings from Central and South America. A, B. Cueva de Las Manos, Río Pinturas, Santa Cruz, Argentina (photographic archive of the Program for Documentation and Preservation of Argentinean Rock Art). C. El Gavilán Hill, Bolívar, Venezuela (photo: José R. Oliver). D. Los Emplumados rock shelter, Quebrada de Humahuaca, Jujuy, Argentina (photo: María Mercedes Podestá). E. El Lucero cave, Juana Díaz, Puerto Rico (photo: José R. Oliver). F. Las Planchadas site, Salta, Argentina (INAPL archive). G. Huila, South Colombia (photo: Pedro Arguello).

There are also representations of guanaco in Patagonia, but here they are represented differently (both in terms of form and composition) from those of the Andes. In Patagonia, guanaco are depicted on rocks along with human hand prints, animal footprints, and simple human figures that are occasionally involved in hunting in composed scenes (Figure 3B). Central America displays greater similarities with the visual arts of Mesoamerica or the Amazon (Greer 2001; Hayward, Roe, Cinquino, Alvarado, & Wild 2009), displaying a varied and rich fauna (crocodiles, monkeys, birds, snakes, shells, tapirs) along with both anthropomorphic figures and nonfigurative designs (Figure 3C,E,G).

Although petroglyphs and paintings can be found throughout the region, in Central America petroglyphs and paintings are unevenly distributed, with paintings being less frequent towards the south and becoming almost nonexistent in Panama (Künne & Strecker 2008). A similar situation is evident in the Andes, with a lower incidence of paintings south of latitude 27° S, although they reappear in large numbers around latitude 46° S in Patagonia. While this geographical pattern may indeed relate to the original distribution of paintings, we need to be cautious because taphonomic (preservation) biases may have played their part. In recent years, the application of digital enhancement to decorated rock surfaces (most commonly DStretch software; Harman 2008/2005) has led to significant increases in both the number of known paintings and in our ability to record their

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details (e.g., Cerrillo & Sepúlveda 2015; Gutiérrez, González, & Fernández 2009; Moya et al. 2014).

Although chronologically long rock art sequences have been identified for many areas, the longest seem to be located in the central-southern Andes, Patagonia, and the Amazon, where they reach as far back in time as the end of the Pleistocene and the beginning of the Holocene (Aschero 2000; Guffroy 1999; Pessis 1999). In contrast, in areas such as Central America and the southern Andes, rock art seems to emerge later, in association with food-producing communities or shortly beforehand (Berenguer 2004; Greer 2001; Künne & Strecker 2008).

Agricultural and complex state-organized societies appear to have created rock art most intensely in this region. This intensity not only shows the social relevance of rock art in pre-Hispanic communities but also makes it possible to carry out comparative studies about how rock art was associated with different types of social formations (hunter-gatherer, agricultural, and state). The incorporation of petroglyphs into architectural features such as plazas and ballcourts in Central America reveals how those petroglyphs were integrated into complex architectural landscapes of the region (Hayward & Cinquino 2012).

Despite regional particularities, some representations span multiple regions and chronologies and appear to be associated with pan-regional discourses. On the one hand, there are positive and negative handprints that respond to a practice that was common worldwide. In South America, handprints are distributed in the southern zone of the continent, with examples identified in Brazil (Pessis 2003), Bolivia (Strecker 2013; Taboada 2008), northeast Argentina (Angiorama & Del Bel 2012), north central Chile (Moya et al. 2014), and the Chilean-Argentina Patagonia, where they are extremely common, with the site Cueva de las Manos being one of the most prominent examples (Gradin, Aschero, & Aguerre 1976; Rolandi 1999) (Figure 3A). In Central America, handprints are known in Honduras (McKittrick 2008). Chronologically, this practice extends from the early to late Holocene and was exclusively associated with hunter-gatherers (Menghin 1957; Schobinger & Gradin 1985). Despite researchers' efforts (Gradin 1981–82), it has not been possible to deduce the age and sex of the producers given the absence of good baseline ethnographic information due to the extermination of Indigenous communities. The chronological diversity among these representations shows that it is a theme that runs across various groups of hunter-gatherers and that, in one way or another, connects the prehistoric representations from the region with those from the Palaeolithic in the Old World.

Engravings that depict human heads are also common in the region (Figure 4). Such engravings are found throughout the Andean region, Central America, and the Amazon and most often are associated with agricultural communities (e.g., Echevarría 2011; Guffroy 1999; Hayward & Cinquino 2012; Mostny & Niemeyer 1985; Prous 2007; Schobinger 1978). The heads may be represented either in a simple manner or with complex headgear. Although specific studies about the meaning and social function of the head representations have not been conducted, heads seem to have been highly relevant—symboli-

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cally, politically, and socially—in the American Indigenous world, as indicated by their representation in other media and the burial of so-called trophy heads (decapitated skulls). For example, in the Andean world, heads are associated with notions of fertility and power and remain relevant in some communities' political dynamics (Arnold & Hastorf 2008).



Figure 4 Examples of petroglyphs from Central and South America. Selection of motifs depicting the human face in different ways. A. Las Canoas site, Río Grande-San Lorenzo, Puerto Rico (photo: José R. Oliver). B. Alto de la Guitarrasite, Chavín de Huantar, Peru (photo: GoriTumi Echeverría). C. Site Checta, Lima, Peru (photo: GoriTumi Echeverría). D. El Colegio site, Cundinamarca, Colombia (photo: Pedro Arguello). E. Pedral Rio Negrosite, Southwest Amazon, Brazil (photo: Raoni Valle). F. El Encanto Valley, Coquimbo, Chile (photo by the authors).

The relationship between rock art motifs and those on other media varies. Although in some regions minimum units and elements cut across media (Basile & Ratto 2011; Cases & Montt 2013; Pereira 2010), this situation is not common, and a large portion of the rock art visual repertoire is not shared with other media. This separation has had important implications when chronologically evaluating the distribution of rock art styles in the region because it has not always been possible to use the traditional method of iconographic comparison. Beyond this chronological issue, very few of the images' social lives have been explored to evaluate how their representation in various production mediums and contexts is related to particular visual phenomenologies and material practices. The particularity of the imagery of rock art suggests that the visual experiences of their consumption are separate from those promoted by other media, giving them a particularity within their specific social and historical context that has not been fully explored.

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Finally, despite the region's extensive coastal areas, it seems that rock art production occurred mostly in inland contexts. Guffroy (1999) has suggested that, in Peru, this inland focus could be due to the petroglyphs' association with areas of coca cultivation, a sacred Andean plant. However, this association does not explain why inland rock art is a continental pattern. Representations found on the coast are often not associated with coastal activities or coastal environments; rather, they focus on nonfigurative motifs. The lack of imagery related to coastal practices and landscapes is a paradox given the early beginning of navigation on the Pacific Coast, as well as the pre-Hispanic populations' constant use of coastal spaces and resources (Lavallée et al. 2011, Olguín, Salazar, & Jackson 2014). One notable exception is found on the desert coast of northern Chile, where hunter-gatherer-fisher groups during the late Holocene produced a rich body of rock art paintings that almost exclusively depict coastal themes such as representations of marine fauna, navigation scenes, and even scenes of collective hunting for large cetaceans (Ballester & Gallardo 2015; Berenguer 2009; Niemeyer 2010). This collection is the clearest example of seascape production by communities in the region (Figure 5).



Figure 5 Coastal rock art from Northern Chile depicting maritime hunt. A. Izcuña, North of Chile (photo: Benjamin Ballester). B. El Médano, North of Chile (photo: Francisco Gallardo)

Researching Rock Art in Central and South America

Description and study of rock art has a long history in the region. The first references can be found in chronicles of the Spaniards who 'conquered' the territory during the sixteenth century. For example, Cieza de León (1550) and J. de Acosta (1580) provide accounts of petroglyphs in Peru (see Guffroy 1999). However, there are few references to

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and interpretations of rock art because, as Martínez describes (2009), early Europeans saw rock art as indecipherable texts from ancient times. Although there are some descriptions from travellers and military personnel from the eighteenth century (Fiore & Hernández Llosas 2007), a tradition of rock art research did not commence until the late nineteenth and early twentieth centuries for two key reasons. First, during that time, the emergent nation states from the continent (most of which became independent from the Spanish Crown in the early nineteenth century) consolidated and began developing their academic-scientific institutionalization. Second, a national discourse starts to emerge, which intends to bring temporal depth to the territorial occupation and, to a certain extent, to construct a particular cultural identity. In this context, naturalists and European scientists were invited to various countries to conduct scientific studies. The first studies interpret rock art as cartographic representations, texts, or ritual practices (e.g., Rengifo 1919) but do not delve into greater detail.

The earliest studies lay the foundations for future rock art research, whereby scarcity of documentary sources (ethno-historic or ethnographic) limits deployment of informed frameworks (*sensu* Taçon & Chippindale 1999). Consequently, research in the region has been intimately tied to the academic practice of archaeology, which considers rock art as another material dimension of the archaeological record. Despite this common denominator, rock art research practices among Central and South American countries vary widely due to the distinct historical orientation of their archaeological investigations and scientific institutions (see Argüello 2008). These differences have generated notable differences in what is known about rock art, the research topics addressed, and the analytical and theoretical frameworks used across the region. Although there are studies conducted from other disciplines, such as art history (e.g., Bovisio 2011), they are relatively uncommon.

As Politis (2003) notes, the region's archaeology has been characterized by a predominance of descriptivist frameworks mixed with functional-environmental proposals and certain interpretative-symbolic notions that appeared earlier than in Anglo-American archaeology. Although this sequence could be understood as a transition between the historical-cultural, new archaeology, and post-processual archaeology frameworks, these labels do not match the Latin American reality, which, despite being enriched by such theoretical paradigms, presents a series of characteristics that create a unique disciplinary identity (Politis 2003).

A clear example of this disciplinary distinctiveness is that interpretative frameworks of rock art research popular in other regions of the world—such as sympathetic magic (Keyser & Whitley 2006) and shamanism (Lewis-Williams & Dowson 1988)—have had very little influence in the region (e.g., Fernandez Ortega, González, & Gutierrez 2009, Schobinger 1978). In some studies, the shamanic hypothesis is alluded to without necessarily engaging with Lewis-Williams's original proposals (e.g., Ballereau & Niemeyer 1999). Other frameworks have assumed a connection between rock art in caves and shamanism, seeing caves as places that connect different worlds and using Taino mythology as a frame of reference (Atkinson 2009; Beauvoir Dominique 2009). However, these

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approaches are not popular in the region, mainly because they have not connected such interpretations to broader models for understanding pre-Hispanic social life. Similarly, the South American ethnographic record shows a larger diversity and heterogeneity of religious specialists (Sullivan 1990) which cannot be reduced simply to the shamanism framework proposed by Lewis-Williams & Dowson (1988). This contrast is ironic, given that some of the first references to the relationship between art and entoptic phenomena were proposed by Reichel-Dolmatoff (1975) based on his ethnographic studies in the Amazon. For the Andean world, the relationship between religious specialists and visual languages has primarily been debated in the context of feline iconography, the idea of human-feline transformation, and its connection to worldviews and political processes in the region (Nazar, de la Fuente, & Gheco 2014; Saunders 2012). These studies, and ethnographies of the Amazon (e.g., Viveiros de Castro 2012), have shown how religious specialists were important political actors in pre-Columbian social life. Visual languages imprinted on different materials played a relevant role in sociopolitical processes, something which needs further study.

Fiore and Hernández Llosas (2007) suggest that there are numerous studies in the region that either anticipate or adapt in novel ways elements of theoretical frameworks developed in academically hegemonic countries. For example, Aschero (1983–1985) adapts some Schiffer's ideas (1972) to the analysis of rock art, focussing on the types of materials left by each stage in the production process in terms of the context of signification, the functional context of execution, and the thematic context of representation. His proposal made it possible to expand the focus from rock art analysis to ideological and technological elements (Fiore 2014).

Despite this, most rock art research in the region has had a descriptivist orientation, with the goal of typologically, visually, and temporally organizing stylistic groupings. Although the concept of style has been under intense scrutiny within rock art archaeology (Bahn & Lorblanchet 1993), it continues to be a useful and frequently used organizing construct. It has been generally understood as a way of structuring rock art records through the identification of visual, spatial, and technological patterns. Methodologically, investigations have combined qualitative and quantitative techniques along with studies that compare research results using different typologies (Gallardo, Vilches, Cornejo, & Rees 1996; Lorandi 1965). More theoretically oriented studies have proposed semiotic frameworks to understand both the style and the value of visual representations (Llamazares 1986; Martel & Giraudo 2014; Mege & Gallardo 2015; Troncoso 2005).

Chronological organization rests on the methods traditionally used in archaeology, which have been adapted to rock art studies in terms of iconographic and symmetrical patterns comparisons between different media, formal and composition studies of rock art groupings, spatial associations with archaeological settlements or deposits, and stratigraphic connections between rock art groups and layers of occupation.

The use of dating methods to establish chronologies also varies. On the one hand, there is a wide range of indirect dating methods related to stratigraphy and the recovery of pig-

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ment residue and/or the remains of fallen painted or carved slabs. Related methods concern excavations associated with geoglyphs (Briones et al. 2005; Clarkson 1998; Stanish et al. 2014). On the other hand, applications of direct dating methods to paintings are rare, with most studies undertaken in Chile, Argentina, and Brazil. These methods are separated into two groups: (1) direct radiocarbon dating of pigments (Boschín, Hedges, & Llamazares 1999; Hernández Llosas et al. 1999; Troncoso, Moya, Sepúlveda, & Cárcamo 2017) and (2) indirect dating of oxalates found on the surface of paintings (Steelman et al. 2002). The best-known examples are Pedra Furada and other sites in northeast Brazil, where Pleistocene dates ranging between 30,000 and 40,000 years ago have been proposed and which we will discuss further later (Guidon 1987; Pessis 1999; Watanabe et al. 2003) (Figure 6C).



Figure 6 Examples of the earliest rock art in Central and South America. A. El Ceibo site, Cueva 6B, Santa Cruz, Argentina (photo: Rafael S. Paunero). B. Inca Cueva 4 site, Jujuy, Argentina (photo: María Mercedes Podestá). C. Pedra Furada, Serra da Capivara, Piauí, Brazil (photo by the authors)

Absolute direct dating is an important requirement in the region because it increases the reliability of proposed temporal sequences and integrates local sequences into the global history of rock art. It is possible that, in the future, the amount of absolute dating of paintings will increase. Physicochemical studies, which began early in some areas, are increasingly common and will make it possible both to expand current understanding of the components of the paintings and to isolate samples for radiometric dating (Aschero 1983–85; Gheco, Quesada, Ybarra, Poliszuk, & Burgos 2013; Hernández Llosas, Watchman, & Southon 1999; Sepúlveda, Laval, Comejo, & Acarapi 2012). To date, there has been no absolute direct dating of petroglyphs.

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The numbers of physicochemical studies of Central and South American rock art have increased for a number of reasons. On the one hand, such studies are part of a global trend in which this type of research is increasingly used in the field of archaeology. On the other hand, they also result from changes in state scientific-technological policies and improvements in local economies that have resulted in greater investment by local governments in scientific development. This situation is also explained by significant regional interest in the technological study of rock art. These studies are not exclusively focussed on identifying physical processes of rock art production, but rather on understanding the process of production in its broader social, economic, and political context (Álvarez & Fiore 1995; Aschero 1988; Bednarik 1988; Fiore 2007; Valenzuela 2007; Vergara & Troncoso 2015). Based on the arguments of the anthropology of technology, the technical features of rock art production have been used to address the composition of style in order to define stylistic groupings and to delineate operative chains in terms of social and cognitive spheres. This approach cuts across the field of archaeology in the region whereby models of the anthropology of technology are frequently used to study ceramic and lithic assemblages.

In addition to the stylistic and typological approaches, technological and composition studies have also been undertaken to understand flows of visual information in the context of territoriality and aspects of evolutionary ecology (Barberena 2013; Scheinsohn 2011) and in the formation of identities and circulation of politically relevant ideas and icons (Aschero 1999; Berenguer 2004; Gallardo, Cabello, Pimentel, Sepúlveda, & Comejo 2012). The former trend is common, for example, in research on mobility and in interpretations of rock art as territorial or resource markers (Atkinson 2009; Fernandez Ortega et al. 2009). The latter trend is more often found in Andean studies connected to a research tradition centred on caravan practices that linked different places and environments (Martel 2011; Núñez 1976). For example, 'dressed' human representations have been interpreted as social and identity differentiators based on ethno-historical information and structural similarities between rock art images and contemporary textiles (Cases & Montt 2013; López Campeny & Martel 2014). Rock art sites have also been seen as public spaces in which community relations and conceptions associated with the formation of power are negotiated and displayed (Martel, Rodríguez, & Del Bel 2012; Troncoso 2004). Underlying much of this literature is the discussion of the relationship between the production and visual character of rock art and the processes of increased social complexity of pre-Hispanic societies (Aschero 2000; Sepúlveda 2011).

The richness of zoomorphic representations in Central and South America has led to the exploration of connections between these images and ethology and prehistoric ecology. One of the areas where this discussion has been extensive is the Andes. The long-standing tradition of representing camelids in rock art and the existence of animal domestication processes has led numerous researchers to define and debate indicators for identifying and classifying wild and domesticated camelids (Aschero 1999; Berenguer 1998; Gallardo & Yacobaccio 2005; Klarich & Aldenderfer 2001). The expressiveness of these representations has also been used to recover ethological information and to reconstruct

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hunting systems (González 2003). All of these approaches have prioritized camelid motifs, given their general importance in Indigenous communities.

Studies centred on the ritual aspect of rock art are common in the region and can be divided into two groups. The first are studies that use local mythology to interpret the meaning of images despite a lack of ethnographic records. This group is very diverse, ranging from the application of mythological knowledge to a set of images (e.g., Artigas 2002; Atkinson 2009; Fernández Ortega et al. 2009), to other methods that are more problem-oriented and that operationalize myths into indicators that go beyond the visual (Berenguer & Martínez 1986). Other groups have used ethnographic research on Indigenous rituals to interpret rock art by combining the use of direct historical frameworks and contextual archaeological information. These studies range from those that use ethnographic and ethno-historical models to interpret the archaeological record without considering the temporality of the practices (and therefore detracting historicity from rock art), to others that leverage these models as interpretative tools but integrate them into the temporal contexts of social practices (Castro & Gallardo 1995–96; Gallardo, Castro, & Mirando 1990).

To better understand the rituality of rock art and social practices, other studies have turned to landscape archaeology, archaeoastronomy, and the archaeology of memory. Through these, the nature of spaces between blocks of rock art and regional site distribution patterns has been integrated at different levels to investigate relationships between sacred geography and memory (Armstrong 2012; Basile 2010; Gheco et al. 2013; Martel et al. 2012), mobility and rituality (Troncoso 2007), and rock art and celestial phenomena (Clarkson & Briones 2014; Vilches 2005). In the last case, research has sought patterns in the orientation of rock art to support interpretations instead of simply identifying isolated alignments with stars. Nevertheless, these spatial approaches have distinguished between territorial space and celestial space, creating an artificial division when attempting to achieve a holistic understanding of rock art landscapes.

One noticeable aspect is the scarcity of studies connecting rock art to the construction of specific ontologies. Although this is a recent field in archaeological theory (Alberti & Bray 2009), most of the existing theoretical frameworks on this matter come from ethnographies of the Andes and the Amazon (e.g., Descola 2012; Viveiros de Castro 1998). It is relevant to consider ontologies underlying the production and consumption of rock art because they may provide new horizons of intelligibility beyond the confines of Western dualist ontologies. Valle (2012) has studied the co-variation between rock art motifs and geological formations in the lower Río Negro, northern Amazon, proposing a lithological perspective in which different types of rocks have a range of social identities and, consequently, different viewpoints. Troncoso (2014), using Descola's (2012) model, discusses how rock art came together with the production and reproduction of different ontological frameworks, acquiring different animations and linked to different conceptions of person, landscape, and subject.

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Notwithstanding the conceptual issues discussed, a brief survey of the bibliography shows diverging situations in the context of rock art research. The Southern Cone—specifically, Argentina, Chile, and Brazil—have a long research tradition, with a large body of literature that have extended beyond earlier descriptivist approaches and chronological objectives (Fiore & Hernández Llosas 2007). This situation is consistent with these countries' consolidated scientific and archaeological institutions. In countries such as Ecuador, Uruguay, Peru, Bolivia, and Colombia, the panorama is more diverse, ranging from approaches that are descriptive-chronological to others that are more concerned with social issues. In contrast, areas such as Central America and Paraguay show less research activity, although it has increased notably in recent years. Although in these areas there is a predominance of descriptive-chronological approaches, classificatory and contextual analyses and interpretations are on the rise (see papers in Künne & Strecker 2008; Greer 1995). In the Caribbean, however, many studies are more concerned with meaning beyond chronology, given ethnographically known Taino populations (Serna 2010), with the well-known limitations of not considering the historicity of rock art practices.

Within this panorama, it seems important to highlight the cases of Peru and Bolivia, both of which have a long and intense tradition of archaeological research and internationally renowned rock art sites such as Toro Muerto, which has more than 6,000 carved blocks spread along an area of 5 kilometres (Linares 1974; Van Hoeck 2003). Bolivia has the Bolivian Rock Art Research Society (Sociedad de Investigación de Arte Rupestre Boliviana, SIARB), an institution whose prestige is recognized throughout the continent and that, until very recently, edited the region's only rock art journal. However, rock art has not been consistently integrated into these countries' archaeological narratives, with the exception of the aforementioned Nazca lines. It is likely that this situation is a result of the area's monumental archaeological record associated with states such as Chavín, Moche, Wari, Tiwanaku, and Inka, which has led many to consider rock art as a third-order form of materiality within pre-Hispanic studies. It is also relevant that, until some years ago, most of the studies relied on North American funds and researchers, which would explain why many of these studies were oriented towards monumental archaeological remains (i.e., monumental archaeology attracts more funding). Given the strong positivist approach of North American archaeology, the study and interpretation of rock art always remained relegated to the third order (*sensu* Hawkes's [1954] Ladder of Inference model).

Despite this heterogeneity, research on rock art in South and Central America is now experiencing its golden age in terms of research and social interest. For example, in the past few decades, numerous conferences specifically addressing this topic and associations of rock art research and preservation have been created in different countries in the region (e.g., SIARB and AEARC in Bolivia, GIPRI in Colombia, APAR in Peru, CIAR-SAA in Argentina, ABAR in Brazil, CIARU in Uruguay, among others). They are all part of the International Federation of Rock Art Organizations (IFRAO) (Podestá & Strecker 2014). Two new journals have been founded that are exclusively centred on this record: the *APAR Newsletter* (*Boletín APAR*, Peru) and *Rupestreweb* (Venezuela), joining the *Journal of the Chilean Museum of Pre-Columbian Art* (*Boletín del Museo Chileno de Arte Precolombino*), which frequently publishes articles about rock art. *Rupestreweb* alone has

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more than 300 articles on rock art of Central and South America. Similarly, there has been a significant engagement with the civil society on the recovery and valorization of this material record that has ranged from the protection of sites to the recovery of its iconography, all of which led to new challenges for archaeological research.

Historical and Social Dynamics of Rock Art in Central and South America: A Brief Review

In this section, we discuss the role of rock art in various Central and South American societies. The aim is to account for its historicity and the heterogeneity of its uses and social life throughout the region's history. This categorization is not based on a chronological approach, much less an evolutionary one; instead, it attempts to synthesize the region's extremely rich cultural variability into social groups that share similar socioeconomic and political strategies.

Rock Art in Hunter-Gatherer Communities Exploring a New Land

Current evidence indicates human occupation of the region from approximately 13,000 to 11,000 years ago. For the most part, evidence of this early occupation is found in caves and rock shelters, although there are also open-air sites documented in various geographic areas, thus suggesting a wide range of land-use strategies (Aschero 2000; Jackson, Méndez, Seguel, Maldonado, & Vargas 2007).

Although North America has rock art associated with populations from the Pleistocene (Benson, Hattori, Southon, & Aleck 2013; Middleton, Smith, Cannon, & Ricks 2014; Whitley & Dorn 2012), similar evidence is more scarce and debatable in Central and South America. The oldest records seem to be from the end of the Pleistocene or beginning of the Holocene (Neves, Araujo, Bernardo, Kipnis, & Feathers 2012). Bednarik (2014) has proposed that, although there is no evidence of Pleistocene rock art in South America, we should expect that the vestiges of the earlier manifestations were similar to the known traditions for that time period in Asia, Australia, and North America, which consist of deep and nonfigurative engravings (e.g., cupules). This standard has seen some sites associated with the Pleistocene–Holocene transition (e.g., Inca Huasi in Bolivia or Riacho Santana in northeast Brazil), although their affiliations are debatable. In fact, the earliest, most consistent records demonstrate a different situation that included paintings more than engravings, as is the case in Brazil, Patagonia, and the Central-Southern Andes.

Early rock art shows a visual diversity consistent with the heterogeneity of the first settlements of the continent and differing from the visual imagery of North America and Siberia. In this way, rock art seems to give an account of the cultural diversity of the region's first inhabitants, the different strategies they employed, and the cultural differentiation processes that occurred after initial settlement. Discussions about chronology

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have been the main focus of research, leaving unresolved questions about the role of rock art in the social life of communities.

A Pleistocene chronology has been proposed for several rock shelters in Serra da Capivara (Piau , Brazil), where evidence of human occupation is associated with rock paintings depicting hunting, dancing, gathering, and sex scenes (Guidon 1987; Pessis 1999) (Figure 6C). For example, the site of Toca do Boqueirao da Pedra Furada has revealed pigment remnants and slabs with paintings in stratigraphic contexts dated close to 20,000 BP. In general, these dating results have been questioned by archaeologists focused on the study of early American settlement (Borrero 2015; Steele & Politis 2009). These concerns have been vindicated in part by recent dating of oxalates from these paintings to the late Holocene (Steelman et al. 2002) and dating of other rock shelters in the area to 10,000–9,000 BP. These results are consistent with the dates given for the settlement of the region during the late Pleistocene–early Holocene transition. Also in Brazil, a slab of stone with a linear petroglyph interpreted to be an anthropomorphic filiform (with tri-digits and a phallus) was excavated from Lapa do Santo rock shelter (Neves et al. 2012). The slab was found at the base of the archaeological deposit, with radiocarbon dating suggesting the petroglyph dates to before 10,500 BP.

In the central-southern Andes, the earliest evidence for human settlement is found in rock shelters with rock art (paintings). In the Argentine *puna*, the walls of Hornillos 2 rock shelter shows groups of camelids in black and red paint, along with schematic anthropomorphic representations. These paintings are associated primarily with the early Holocene, based on the presence of a wood carving of a camelid and grinding stones with painting and pigment remains in levels dated around 9590 BP (Yacobaccio et al. 2012). Similarly, Cave 1 and Cave 4 sites in Inca Cueva, Jujuy, contain simple, nonfigurative paintings associated with occupation deposits dated to between 10,600 and 9,200 BP (Aschero 1999) (Figure 6B).

Paintings from the sites of Toquepala, Caru, and Sumbay in southern Peru are also thought to be old, given that associated occupation deposits date back to the beginnings of the Holocene. However, at least in the case of Toquepala, this association has been questioned, given that the oldest stratigraphic level with pigments dates to the middle Holocene, suggesting a later date for the paintings (Guffroy 1999).

Patagonia also has early evidence of rock art in rock shelters (Aschero 2000). Sites with this early rock art include Cueva de las Manos, Los Toldos Cave 3, and Cueva Fell, dated to between 9,320 and 8,759 BP (Bate 1970; Gradin et al. 1976). This early chronology is based on stratigraphic associations between dated deposits and buried pigments and/or painted slabs. The paintings depict guanaco (camelids) and a range of associated hunting strategies, hundreds of handprints, and representations of the flightless Darwin's rhea (*Rhea pennata*) and felines (Figure 3A,B). An exception is Cave 6b at Estancia El Ceibo, which contains a figure of a great, polychromatic feline superimposed on guanacos which has been dated to the end of the Pleistocene and beginning of the Holocene, given that the image corresponds to an extinct feline (*Panthera onca mesembrina*) (Paunero 2012)

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(Figure 6A). The only evidence of early petroglyphs exposed on the surface is at Epullán Grande Cave, where surface layers of human occupation have been dated to 9970 ± 100 BP (Crivelli & Fernández 1996). Oddly, petroglyphs are not found again in Patagonia until approximately 3000 BP (Fiore 2006).

In brief, although the evidence is neither abundant nor common in the region, there exists a consensus for the early rock art in South America dating to 10,000–11,000 BP (Whitley 2013).

Post-Pleistocene Rock Art of Hunter-Gatherer Communities

The consolidation of new environmental conditions during the early Holocene (ca. 10,000 BP) was associated with modification of hunter-gatherer group economic and mobility patterns. This modification saw greater use of areas, along with regionalization of cultural traditions and increasing social complexity that in some areas were associated with the domestication of animals and plants (Figure 7). The rock art record of these groups varies, showing limited production during the early and middle Holocene and restricted to zones mentioned in the previous section (Berenguer 2004; Guffroy 1999; Podestá & Aschero 2012; Prous 1999; Yacobaccio et al. 2012). Most rock art is associated with the patterns and circuits of mobility of hunter-gatherer groups who made markings in their preferred settlement areas, integrating images into their everyday life camps.

Populations from the early Holocene defined certain themes and visual corpuses that notably endure in some regions. In the case of the Andes, these themes and corpuses are expressed in the popularization of paintings of camelids that are an enduring feature Andean iconography (Guffroy 1999). Similar long-term iconographic trends occur in Patagonia with guanacos and in Brazil with human representations (Figure 7A,B,C).

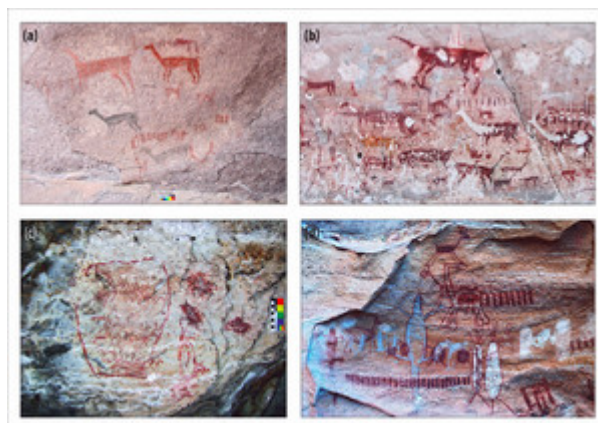


Figure 7 Rock art by Holocene hunter-gatherer societies. A. Pampa del Muerto, Arica Highland, Chile (photo: Marcela Sepúlveda). B. Vilacaurani, Arica Highland, Chile (photo: Marcela Sepúlveda). C. Torongana site, Huancavelica, Peru (photo: Gori Tumi Echeverría). D. Pedra Furada site, Serra da Capivara, Piauí, Brazil (photo by the authors).

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Towards the mid-Holocene, an apparent decrease in rock art production (Yacobaccio et al. 2012) parallels a hiatus in occupation linked to the climate optimum and decreased territorial pressures. In contrast, during the late Holocene, an intensification and popularization of rock art production accompanies increasing social complexity. This popularization is associated with population growth, increased pressure over territory, and changing engagements with the environment (Aschero 2000; Berenguer 2004; Schobinger & Strecker 2001; Troncoso et al. 2017). During this period, the region was more densely and frequently inhabited compared to the mid-Holocene. The resulting pressures of population growth and territoriality led to the development of systems for social interaction over shorter distances that were reinforced through the use of visual information systems such as rock art.

Regionalization processes also became more intense during the late Holocene. Simultaneously, petroglyphs became popular in different regions, accompanied by a process of schematization of the visual repertoire. In the Andes, the tradition of engraving camelids coexisted with a diversity of other motifs that allude to territorial features (Berenguer 2004; Guffroy 1999). Rock art seems to have played a differentiating role in a context in which some communities began to experiment with the domestication of animals and plants, transforming their way of life and economic strategies (Aschero 1999; Gallardo & De Souza 2008). Hunter-gatherer communities represent scenes from hunting wild animals, unlike the pastoral groups which represent domesticated camelids (Gallardo & De Souza 2008). In this sense, these processes of transformation see the development of rock art that expresses cultural diversity and the diverse historical processes of different communities.

In areas in which the hunter-gatherer way of life persisted until after European 'conquest', such as in Patagonia or certain areas of the Argentine Pampas, rock art continued to express processes of differentiation stemming from reduced mobility and the development of new and more specific social, cultural, and historical processes (Podestá, Paunero, & Rolandi 2005).

Rock Art and Agrarian Communities

In different areas of South America, paintings and petroglyphs are associated with a range of agricultural and/or livestock-producing communities (Hayward et al. 2009; Schobinger & Strecker 2001) (Figure 8). Structurally, these communities are heterogeneous and are classified by archaeologists as middle-range or intermediate societies (Johnson & Earle 2003). This classification ranges from communities that organized around the extended family as an independent economic unit to village communities with different degrees of social hierarchies and differential access to specific resources.

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Figure 8 Rock art by Middle-Range Societies. A. Civic-ceremonial centre or Caguana, Utuado, Puerto Rico (photo: José R. Oliver). B. Miculla site, Chavín, Ancash, Peru (photo: Gori Tumi Echeverría). C. Los Mellizos site, Coquimbo, Chile (photo by the authors). D. El Hornero site, Catamarca, Argentina (photo: Inés Gordillo). E. El Guitarrero site, Catamarca, Argentina (photo: Inés Gordillo). F. Palancho site, La Rioja, Argentina (photo: María Mercedes Podestá). G. Los Mellizos site, Coquimbo, Chile (photo by the authors). H. Suripotrero site, Catamarca, Argentina (photo: Norma Ratto). I. Ambrosetti rock shelter, Salta, Argentina (INAPL Archive).

Despite the differences among these types of societies—linked to strategies tailored for diverse environments and specific socioregional contexts—it is possible to identify certain patterns in the production and social role of rock art. The significant increase in the production of rock art compared to that of previous periods reveals the importance of rock art to various types of socioeconomic organization (Aschero 1999; Berenguer 2004). This increase can be associated with the presence of social units that were spatially wider and required new and more mechanisms to facilitate the interaction and flow of information between groups (Troncoso 2014). A clear example of this situation is the Aguada culture in northwest Argentina, an ideological horizon that condensed a series of symbolic notions with a snake-zoomorphic design that circulated throughout the Andes in different media, including rock art (Gordillo, Baldini, & Kusch 2000) (Figure 8D,E,G). Other emblematic motifs formed intercultural relationships between different areas in other contexts (e.g., Gallardo & Cabello 2015).

Rock art, in turn, was associated with the construction of specific identities among these agrarian communities. Accordingly, rock art has provided an account of social differences in these communities (in terms of roles and/or statuses), specifically through anthropomorphic designs (Figure 8F-I). Elements such as garments, headgear, and the use of tools

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or specific objects have been interpreted as expressions of the internal diversity associated with social differentiation (Berenguer 2004; López Campeny & Martel 2014; Nielsen 2007). In this sense, rock art's role was facilitated by its production in spaces of social gathering and the construction of shared memories and meanings, functioning as an element that articulated cultural identities. This mediation role has also been seen when considering the relationship between societies that produced rock art in a same place but at different times. In this sense, petroglyphs or paintings from previous eras help establish a discourse about the past connected to the construction of a unique identity (Armstrong 2012; Basile 2010; Basile & Ratto 2014; Martel et al. 2012).

A central element of agricultural societies is land management and control, which is why these societies structure both social and family relations based on land rights (Ingold 1987; Meillasoux 1977). In many cases, this relationship is associated with the importance of water as a resource that makes both crops and soil fertility possible. Numerous researchers have suggested that these communities created rock art in relation to territorial practices and the ritualization of landscapes (e.g., Atkinson 2009; Berenguer 2004). For example, in Central America clear associations exist with saltwater springs, whereas in the Andean region, relationships exist with agricultural zones or crop fields and villages (Guffroy 1999). However, the extent to which processes of landscape ritualization differ between agricultural and nonagricultural societies needs to be assessed further.

Rock art in agricultural societies also responds to particular histories. It has been proposed that certain types of rock art were related to mobility routes that facilitated economic and cultural exchanges between different areas (e.g., Basile 2010; Muñoz & Briones 1996). This relationship was particularly important for agricultural–livestock-raising peoples in the Atacama desert, who travelled long routes that crossed the desert to connect with various environments in order to carry out exchange with other communities (Berenguer 2004, 2009; Núñez 1976). In these contexts, rock art, especially geoglyphs, functioned as route markers, creating visual landscapes that would be recognizable to caravan travellers from different communities using shared symbols (Briones et al. 2005; Clarkson & Briones 2001) (Figure 2A,B,C,D,E).

In terms of the placement of rock art sites, most are found in spaces other than those used on a daily basis, such as sites for living or agricultural work (Künne & Strecker 2008; Troncoso 2014). However, in some villages in northern Chile, engraved stone blocks are associated with dwelling structures, incorporating rock art in their everyday lives (Vilches & Cabello 2004). The reasons for the decision about whether or not to segregate rock art spaces are not altogether clear, but it doubtless was an expression of local ontologies related to the constructing and transforming of particular landscapes and organizing the world in which their social practices made sense.

Rock Art and Pre-Columbian States

The development of pre-Hispanic states occurred exclusively in two areas: northern Central America (particularly Guatemala) and the central Andes (Peru and Bolivia). In the first area, a series of Mayan city-states with complex social and spatial organization de-

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veloped, whereas the second area is marked by a series of more or less expansive states in the central-southern Andes. Although these states have been widely studied in terms of architecture, production systems, and clay artefacts, few rock art sites have been investigated. Even when rock art associated with state systems has been recognized (e.g., Chavin, Moche, or Maya (Guffroy 1999; Stone 1997), it has been little used to aid in the understanding of political developments. This neglect is despite the fact that some motifs are highly symbolic within the visual politics of these states, as is the case with Chavin lateral personage with jaws (Figure 4B) and Mayan representations of the so-called God N in the NajTunich cave.

Rock art in the context of the Inka state or *Tawantinsuyu* has been studied more intensely, contributing to our understanding of the expansionist process (Figure 9). This empire expanded from its capital, Cusco (Peru), all through southern Ecuador and central Chile between 600 and 450 BP. Beyond the presence of architecture models sculpted in rocks, such as those from Saywite or Qenqo (Dean 2010; Van de Guchte 1990), researchers have identified rock art (paintings) in the Cusco area associated with the *Tawantinsuyu* that are connected to places in Inkan mythology and to the representation of personages relevant to the state (Falcon 2013; Hostnig 2006) (Figure 9A-E). These representations share anthropomorphic, textile, and zoomorphic motifs that have also been found in areas peripheral to the state (Berenguer 2013).

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Figure 9 Examples of rock art produced within a state social organization; specifically, the Inka Empire. A. Qh'echuqaqa site, Urubamba, Cuzco, Peru (photo: Rainer Hostnig). B. Llamapintay, Urubamba, Cuzco, Peru (photo: Rainer Hostnig). C. Mant'oLares, Peru (photo: Rainer Hostnig). D. Chawaytiti, Pisac, Peru (photo: Rainer Hostnig). E. Mant'oLares, Peru (photo: Rainer Hostnig). F. Ofragia site, Arica, Chile (photo: Daniela Valenzuela). G. Viznagal, Aconcagua Valley, Chile (photo by the authors). H. PiedraCopita, Huasco valley, Chile (photo by the authors). I. Vinto 1-2 site, Arica, Chile (tracing by Daniela Valenzuela).

Zuidema (1995) has proposed a spatial and radial organizational system for the Inkan heartland associated with the imaginary lines known as *ceque*, which are also the foundation of the state's sociopolitical organization. These *ceques* are associated with a group of 328 *huaqas* (sacred sites generally marked by natural elements, such as specific rocks, sources of water, etc.), and some feature rock art engravings which may be Inkan and linked directly to the *huaqas* (Bauer 1998). These studies reveal that, although rock art production was part of the Inka state, little is known about how it was incorporated into the state's political and social processes.

It seems that rock art's visual character and presence was restricted to a very few places outside the Inkan heartland, suggesting that it was not part of the material cache of practices that was disseminated when incorporating different provinces. This proposition is supported by the lack of association of rock art with ceremonial centres, logistics facilities, and the Inka road system (Berenguer & Cabello 2005; Hyslop 1984)

Nevertheless, in recent years, new research has been conducted which broadens understandings of Inka rock art. For example, cupules associated with lines have been related to agricultural fields, both in the Inka heartland and in the provinces of the *Tawantinsuyu* (Hernández Llosas 2006; Meddens 2006, Valenzuela, Santoro, & Romero 2004), which

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may indicate state control of agricultural production (Meddens 2006) (Figure 9H,I). Similar associations have been identified between cupules and field representations in architectural models, as the cups are linked together by deep grooves, replicating agricultural fields and making possible the movement of water between cupules and lines (Valenzuela et al. 2004). Other scholars have suggested a relationship between the cupules and lines with recording systems similar to the *qhipus* (Christie 2010). In any case, both architectural models and the cupules would have been related not only to specific ritual practices (Christie 2015; Dean 2010), but also understood as actants within the Inka social world. In this sense, the animation capacities ascribed to stone in the Andes has been associated with the process of taking possession of new territories and the creation of new and Inkaized local places (Dean 2015).

On the other hand, in various parts of the *Tawantinsuyu*, it has been well established that local rock art production traditions of agricultural communities expanded during the Inkan era (Gallardo & Vilches 2001; Martelet et al. 2012; Sepúlveda 2004, 2008; Troncoso 2002, 2004). Rock art appears to maintain its pre-inka patterns of meaning and use, as part of a process whereby local communities kept their traditions and practices after the incorporation into the *Tawantinsuyu*. This would have been in accordance with a state policy allowing local rituals and practices to take place. Nevertheless, rock art is absent from state infrastructure, showing that the state did not allow this media to be incorporated into its place of discourses, thus maintaining a separation between the state and the local.

Within the group of local rock art repertoires that were developed during the Inka era, we observe the incorporation of *Tawantinsuyu* motifs such as knives and headgear, anthropomorphic representations with bodies in the style of Inka textiles, and two-legged rigid llamas, as well as Inkan symmetrical patterns (Figure 9). Although produced by local groups, these symbols were circulated by *Tawantinsuyu* throughout its provinces and were incorporated by local communities into their ancestral places and discourses through adoption or adaptation. In some cases, these motifs cover wide regions (e.g., the schematic two-legged llamas that look like the gold, silver, or *Spondylus* figurines found in high mountain sanctuaries).

These cases show how rock art continued to act within Inka state contexts in South America. In that process, two other developments arose that have not been fully explored. First, local communities reproduced their practices and discourses through rock art at ancestral sites, constructing a memory that could be interpreted either as resistance to the Inkan occupation or as a tool that local leaders could use to position themselves politically within the new political context. Second, local communities adopted a set of *Tawantinsuyu* symbols within their traditional spaces, incorporating them into their discourses and imaginaries, thus showing the Inkaization of such places and practices. It is in this process that a whole political and ritual fabric was woven, placing rock art within a set of practices and materialities that structured the relationship between an expansionist state and the local communities that were incorporated into an empire.

Rock Art After Columbus

The practice of rock art production did not cease following incorporation of South America into European colonial powers during the sixteenth century and the subsequent de-structuring of local communities. However, the practice decreased notably in comparison with previous periods, most likely as a consequence of population decrease and the suppression of ritual practices. Although the best-known records are included within what is considered colonial rock art (sixteenth–eighteenth centuries; Martínez 2009; Querejazu 1992), in some areas, creole communities continued this practice through the republican period (eighteenth–nineteenth centuries; Podestá, Re, & Romero 2011).

Colonial rock art is characterized by representations of scenes depicting horseback riding, crosses and calvaries, and individuals with hats and Western attire interpreted as clerics (Figure 10). This visual repertoire may include other motifs that are difficult to identify due to possible continuity of previous motifs (see Martínez 2009). One of the foundations of the ‘conquest’ was the evangelization of Indigenous communities, which led colonizers to directly attack their ritual practices and religious symbols. This approach was expressed not only in the proliferation of the Christian cross as a primary symbol but also in the destruction or Christianization of local sacred sites. Nevertheless, rock art sites were not destroyed, either because the colonizers understood such markings to be ancient languages without much relevance or because European rituality was founded on tangible artefacts located within built spaces, not on intangible outdoor contexts. This difference would have precluded European understanding of the importance of rock art places (Martínez 2009). Furthermore, many rock art sites were invisible to colonizers within the regional landscape given the remoteness of these sites from the settlements occupied by many of the communities (Recalde 2012).

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Figure 10 Rock art of the moment of European conquest, and of colonial and postcolonial times. A. El Sauce site, Coquimbo, Chile (photo by the authors). B. Van Osten cave, Bolívar, Venezuela (photo: José R. Oliver). C. Pintados de Sapagua site, Quebrada de Humahuaca, Jujuy, Argentina (photo: María Mercedes Podestá). D, E. Q'uruni 3 site, Bolivia (photo: Marcos Arenas). F. Quebrada Los Molles, Coquimbo, Chile (photo by the authors). G. Piedra Pintada site, San Juan, Argentina (photography of the INAPL archive).

Local communities continued the practice of marking rocks, maintaining their technical traditions, and incorporating new images and narratives within ancestral spaces. Through this process, not only were ties to previous periods reaffirmed but also resources for resistance were created that attempted to incorporate the new reality within previously known frameworks (Arenas & Martínez 2009; Recalde 2012). Horseback riding scenes seem to be the earliest record of this rock art, showing the impact that this practice had on local communities (Figure 10C,F). In the Andes, horses were represented following the design patterns of camelids, thus incorporating the new animals and practices of horseback riding within known frameworks (Arenas y Martínez 2009). In some cases, the representation of isolated horses alludes indirectly to their presence (Recalde 2012), whereas in others, the characters riding the horses wear and carry European attire and weapons, showing the direct association of this practice with the colonizers. One of the best-known panels is found in Humahuaca, Argentina, where a battle between Indigenous and Spanish communities is depicted with weapons and horseback riding shown as the main differentiation between the two groups (Figure 10C).

Christian crosses are also common in the region, showing the incorporation of this symbol by Indigenous communities (Figure 10B). In some cases, these crosses clearly indicate the establishment of the colonial system and the prohibition of the practice of mark-

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ing. That is, crosses are either superimposed over earlier designs or are large, giving them visual predominance. In other cases, crosses give an account of the same incorporation of these symbols within the local discourses and rituals without necessarily implying Christianization. Numerous researchers in the Andes have identified this phenomenon, arguing that the continuation of worship and meanings of the indigenous world can be observed beneath all historical and contemporary Christian practices (Martínez 2009).

These examples contrast with the few engravings and paintings identified and produced by Europeans that essentially correspond to names of people and dates, probably with the objective of recording visits to specific sites. An interesting case arises in Central America, where this type of engraving is seen in a site with previous cave paintings, thus demonstrating the scant importance that Europeans gave to rock art as a ritual and political expression of local communities (Beauvoir-Dominique 2009). One little-researched aspect is the role played by African populations in the production of rock art. Beauvoir-Dominique (2009) argues that caves with rock art in Haiti reference an early (sixteenth-century) 'alliance' between Indigenous and African populations which could have evolved into shared practices.

Post-Columbian rock art seems to also have a history of transformations associated with the processes of colonial domination in the region. Scenes depicting horseback riding are the earliest, followed by crosses expressing the process of evangelization. Later, representations of individuals who appear to be clerics appeared (Figure 10A), indicating the robust establishment of colonial power and its local authorities (Arenas y Martínez 2009).

Although the historicity of these colonial representations is associated with a decrease in rock art production throughout time, continuities occurred. For example, in some areas creole communities engraved rocks, depicting names, dates, nonfigurative motifs, and some animals (horses and cows) during the nineteenth and twentieth centuries (Figure 10G). They are known as livestock markings and are associated with the nomadic practices of herders who crossed the Andean mountain range. These markings would have served both as spatial signals and as a resource for the flow of information about transported animals (Podestá et al. 2011).

Prehistoric Rock Art in Contemporary Societies

For some years now, rock art from various areas of Central and South America has been incorporated into new systems of meaning by societies that participate in a global economic, cultural, and political context. The development of a heritage discourse with value granted to vestiges of the past, along with the interests of the states and of local populations, has resulted in new roles for archaeological remains in general and rock art in particular. This change is connected to processes of ethnogenesis, identity construction, economic development, tourism, and the like, which tend to be closely linked but which nevertheless can have different meanings for the various actors involved (Figure 11).

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Figure 11 Examples of contemporary management of prehistoric rock art sites. A. Pathway at Boqueirao da Pedra Furada site, Serra da Capivara, Brazil (photo by the authors). B, C. Pathway and decks in front of the Cueva de las Manos site and its Interpretation Centre. Cueva de las Manos, Río Pinturas, Santa Cruz, Argentina (photographic archive of the Program for Documentation and Preservation of Argentinean Rock Art, DOPRARA).

One example of this phenomenon is the addition of three South American rock art sites to the list of UNESCO World Heritage Sites: Serra da Capivara National Park in Brazil (1991); lines and geoglyphs of Nazca and Pampas de Jumana in Peru (1994); and Cueva de las Manos in Argentina (1999). Similarly, various countries from the region have presented for inclusion onto UNESCO's Tentative List rock art areas or sites with the goal of attaining World Heritage status. The incorporation of these sites onto the World Heritage list is undoubtedly mediated not only by conservation and dissemination interests but also by political and economic interests (Meskell 2012). In one sense, the distinction obtained can be seen as a 'quality seal' in the global cultural tourism industry. In general, states have sought to promote tourism (and with it the inflow of foreign currency) at these—and other—rock art sites (Bellelli, Scheinsohn, Podestá, Carballido, & Fernández 2005; Podestá & Onetto 2004). In places such as Central America, this has resulted in a push to increase systematic recording, documentation, and integration of rock art within the national cultural heritage (Künne & Strecker 2008).

Another key element in the appropriation of rock art by contemporary communities is its use as an element of identity. Perhaps given its visual character, openness to multiple interpretations, and immobile nature, rock art has been incorporated into discourses affiliated with the belonging of communities to a particular territory. This incorporation has occurred not only in contexts in which the local group has historical and ancestral connections to pre-Columbian populations but also in non-Indigenous contexts, which mostly

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tend to be rural or agricultural groups. We should consider the cultural richness and diversity of Central and South America in these contexts, along with the complex processes of *mestizaje* and immigration that once gave and continue to give form not only to local and national identities but also to processes of Indigenous self-recognition. In some cases, communities have articulated the same spatiality of rock art as a landscaping resource with the goal of opposing corporate projects that would have great environmental impacts, such as mining. It is interesting that, despite these appropriations, rural people tend to make a distinction between their present and an Indigenous past, which is seen as different and distinct. These communities, and even other urban ones, have developed programs that seek to recover pre-Hispanic rock art iconography for circulation and value in current materialities.

In this scenario of growing valorization of archaeological heritage and its appropriation, rock art researchers in the region have incorporated local communities into their research projects, considering both their interests and expectations. In this way, in certain places, archaeologists and local people have formed alliances that have facilitated the development of tourism that is of special interest to these groups, offering scientific knowledge to help diversify the productive activities of the communities, which are often impoverished. The relationship with Indigenous people varies in depth and complexity depending on the historical attitudes of both researchers and the various states.

In this way, archaeological research into rock art has recently been incorporating anthropological perspectives on the current situation of the communities that either live close to or are culturally associated with rock art sites. This anthropological research has sought, on the one hand, to understand the existing link between local people and the archaeological heritage and, on the other, to establish lines of communication between the differing discourses of archaeologists and local peoples (Alfonso 2010; Bellelli et al. 2005).

Conclusion

The Position of Central and South America and Their Contribution to a Global Rock Art Archaeology and Anthropology

In this chapter, we have attempted to provide an introduction to rock art and rock art research in Central and South America. To this end, we have described rock art's visual features, research themes, and historical development. Obviously, efforts of this scale face the problem of the differentiated development of research and knowledge in such a large region, along with the need to representatively select topics and frameworks. Despite these issues, we believe that an archaeological and materialistic vision of the rock art record has cut across all of the examined issues and frameworks. Furthermore, where ethnographic and ethno-historical knowledge has been used as a resource to think about this record, it has always been integrated with other types of archaeological evidence in an effort to investigate topics such as social complexity, the domestication of animals, mobility, and memory. We think that this diverse approach gives a certain identity to the

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study of rock art in the region, demonstrating a relative independence from the hegemonic centres of research. Without a doubt, this richness of archaeological frameworks is one of our region's great contributions to the global archaeology of rock art.

In this same vein, rock art's spatial and historical heterogeneity in the region, along with its association with societies that are very different from each other in terms of social complexity, illustrates the richness and importance of rock art production among pre-Hispanic (and some post-Hispanic) communities. Although little explored, this situation places our region in an interesting position to provide comparative insights into the nature and potential uniqueness of rock art in different types of societies (e.g., hunter-gatherer vs. agricultural) and the role of this materiality in the formation of social complexity. In this context, pre-Hispanic states in the Andean area give the region a privileged position to discuss how the production of rock art is inserted into these contexts, a topic that is almost invisible in other global contexts. Furthermore, the existence of various types of states, including the Spanish, Portuguese, and French empires, makes it possible to compare rock art processes in different colonial contexts and in the context of different expansionist and imperialist processes.

Without a doubt, delving into this ensemble of topics requires the formulation of studies centred on problems with clear theoretical and methodological frameworks that go beyond mere inventory and description of visual collections. To do so, however, it is also necessary to have well-adapted chrono-cultural sequences based on multiple lines of evidence that cover rock art's different levels of variability.

Rock art research must continue to understand rock art and its historical trends from different angles and levels of observation without falling into a visual reductionism that limits the understanding of the spatial and technological realms. Furthermore, we believe that a key to this process is to continue to view rock art as a product of a social practice that develops in a specific time and space, connecting a series of other practices, places, objects, and imaginaries and displaying the fabric of history. Continuing to explore these paths makes it possible to expand our discourse beyond the visual and to recover the richness of the experiences and ontologies of past communities in the context of rock art.

A focus of this type also would contribute to collaborative management and revalorization strategies with local communities, redirecting interpretations from a 'work of art' perspective, in the style of Western art, towards a contextually and historically respectful perspective. In this way, it will be possible to consider these visual representations as unique to specific historical periods that were connected to ways of living that, although they have been transformed or have even disappeared, gave an identity and a logic to these representations. It is these ontological and historical contexts in which rock art participates that ultimately defines its social value and function. The management and diffusion of rock art must, according to our understanding, rescue the historical particularities behind its production, showing not only the cultural richness of our region but also other ways of being.

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This last point highlights a clear challenge to rock art research in our region. On the one hand, it is necessary to construct new strategies to connect communities, their landscapes and traditions, and rock art sites in an effort to generate a collaborative archaeology that would insert this materiality into current practices, knowledge, and imaginaries. This would not only respond to the demands of local communities but also support the preservation of this record. The fact that these demands are made both by Indigenous and non-Indigenous communities provides an interesting panorama in relation to the construction of heritage and to the relevance of the everyday landscapes in which these communities live and to broader territorial claims. On the other hand, it is necessary to construct, from archaeology itself, narratives that would account for the alterity, historicity, and ontologies that are hidden in rock art. In this way, it is possible to make nonhegemonic ontological models visible, which is fundamental in a region in which the imposition of foreign cultural patterns has been a historical constant.

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Andrés Troncoso

Andrés Troncoso Departamento de Antropología, Universidad de Chile, Chile.

Felipe Armstrong

Institute of Archaeology, University College London

Mara Basile

CONICET, Facultad de Filosofía y Letras, Universidad de Buenos Aires, Argentina