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Palo Blanco: a village in Late and Inka landscapes in Hualfín Valley (Catamarca, Argentina)

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ABSTRACT

In this article we analyze archaeological data from Palo Blanco, located in the center of the Hualfín Valley (Dept. of Belén, Catamarca, Argentina) to discuss how a relational concept of landscape provides significant tools to reconstruct links between a local village and different landscapes configured during Late and Inka times (c. 1400–1500 AD). Also, we present how this approach allows us to develop an alternative scheme to change interpretations of the past in the region. Based on the analysis of spatial, social and temporal dimensions, we analyze archaeological evidence focusing on placement, building, flow of bodies, spatial perception, relationships between people and material culture, and chronology. Finally, we consider Palo Blanco as a typical local defensive village during late pre-Inka times, which probably changed its role during Inka conquest.

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Keywords

Palo Blanco; Northwestern Argentina; Hualfín Valley; relational landscape; Inka conquest

Introduction

Archaeological research in the Hualfín Valley (Dept. of Belén, Prov. of Catamarca, Argentina) has a long tradition in the study of pre-Hispanic farming and pottery societies. References to some aspects linked particularly to Late and Inka times - i.e. after the Aguada culture's influences (CE 600-1000) until Diego de Almagro's entry into Northwestern Argentina in 1536 on his way from Cusco to Chile - date back to the late nineteenth century (Lafone Quevedo 1892; Bruch 1902) and extend throughout the twentieth century, with the expeditions directed by W. Weiser and F. Wolters (1920-6). However, it was only in the 1950s, with Alberto Rex González's works, that archaeological research actually took on scientific relevance. Based on collections from the Museum of La Plata and his own excavations in the Hualfín Valley, González proposed a sequence for Northwestern Argentina (González 1955). In this culture-historical sequence 'Late' (CE 1000–1470) and 'Inka' (ce 1470–1536) periods were associated with 'Belén culture'. In 1970, at the First National Congress of Argentinean Archaeology, in collaboration with George Cowgill, he presented a compilation of the results of more than twenty years' work, already having many radiocarbon dates (González and Cowgill 1975). These results were used to build the master sequence for Northwestern Argentina. González proposed three phases for 'Belén culture': Belén I (ce 1100–1300); Belén II (ce 1300–1480) and Belén III (ce 1480–1535), characterized by a

progressive evolution of architectural patterns, from communal 'pit houses' to fortified and aggregated sites with Inka influences.

After González's research, 'Belén culture' was categorized as a chiefdom or 'señorío', in a geopolitical model with its hegemonic core in the Hualfín Valley (Sempé 1999). According to Sempé, the Belén settlement pattern was organized as a site hierarchy – aggregated villages, dispersed or open villages and villages with houses between terraces for farming. This pattern would reflect the complexity of social organization. While Sempé's proposition had a different perspective from González's ideas, including not only settlement pattern but also political aspects, Belén's phases remained intact in her model.

In recent years, research on the Late and Inka periods in the Hualfín Valley has increased significantly, both in the number and diversity of topics, resulting in several contributions to reconstructing how daily life and socio-political processes developed in the valley, theoretically founded on a relational concept of landscape as the general framework for a regional history (Balesta and Wynveldt 2010; Balesta, Zagorodny and Wynveldt 2011; Jucci 2013; Wynveldt 2009; Wynveldt and Balesta 2009; Wynveldt and López Mateo 2010; Wynveldt, Balesta and Iucci 2013). This concept is based, first, in the proposal of Zedeño (2000), who defined the landscape as a network – not simply a sum – of points of reference linked progressively by multiple interactions among people, and between people and resources. Thus, landscape is characterized by a formal dimension, consisting of the physical features of the points of reference, a relational dimension. referring to the interactive links that connect points of reference, and a historical dimension, that is, the sequential links that result from the successive uses of places. The strategy is to start from a specific point of reference, progressively linking other points in all directions, examining the network of potentially linked points. A similar idea of relational landscape was proposed by Smith (2003), incorporating in this case politics as a key element in the configuration of the relations among bodies, shapes and elements in the landscape. In addition to this, Smith included the analysis of physical, perceptual and representational spaces, as interconnected domains in social life. Spatial experience (material practices) describes the flow of bodies and things through physical space, and includes not only the movement through finished spaces, but also the techniques (or procedures) and technologies (or knowledge) of building. Spatial perception, on the other hand, describes the sensory interaction among actors and physical spaces (Smith 2003). Finally, Ingold's approach helps us to visualize particularly the temporality of the landscape and the inexorable condition of existence of the organism-person, immersed in its own environment (Ingold 2000). In this context, the landscape configuration is a durable record (and a testimony) of the lives and work of past generations that have inhabited it.

From this perspective, we try to re-signify building actions and the use of space with a relational focus, for the purposes of reconsidering the role played by material objects in people's daily lives beyond traditional archaeological categories, and to discuss chronological aspects without classical periodization schemes, questioning limits, phases and material features that historically defined the Late, Inka and Hispanic-Indigenous periods (Wynveldt 2009; Wynveldt, Balesta and Iucci 2013).

Considering these ideas, we discuss how a relational concept of landscape can provide significant tools to reconstruct links between a local village and landscapes configured during Late and Inka times (1400–1500 AD). To carry this out, we first present our approach to developing an alternative scheme to change interpretations of past in the region. Then, we analyze old and new information from the area of Palo Blanco, located in the center of the Hualfín Valley (Dept. of Belén, Catamarca, Argentina) (Fig. 1). Finally, we discuss the implications of Palo Blanco as a typically local settlement in Late and Inka landscapes.

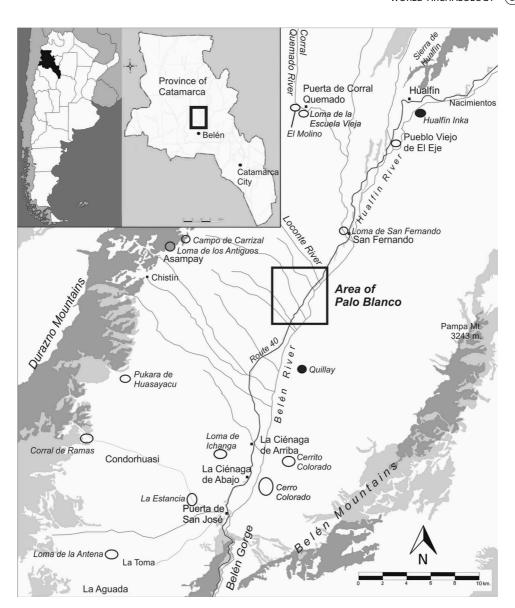


Figure 1 Map of Hualfín Valley showing the location of Palo Blanco area and Late sites, including local (empty circles) and Inka installations (filled circles).

The landscape and its dimensions in the Hualfín Valley

As mentioned above, past research for the Hualfín Valley in the twentieth century focused on the definition of cultural phases, artificially subdividing social development processes and applying an evolutionist approach. In addition, social organization was defined as complex from the distribution of different types of sites in a hierarchical system having a geopolitical core in the Hualfín Valley viewed as an occupied territory where space is a given and functions as a physical container in which defined cultural features are located, associated with an expansionist sociopolitical

organization. The identification of sites - both inside and outside the valley - as corresponding to the same socio-political entity was based on Belén cultural features, without any analysis of the practices that created them or of which they were a part, and without exploring the different types of relationships that might have been established between groups in the valley. Moreover, these interpretations about 'Belén culture' were not based on meticulous analysis of archaeological contexts and material objects, but on very general models.

New research analyzes Late archaeological materiality of the Hualfín Valley from a different perspective, in order to avoid the constraints imposed by broad outlines of traditional research. In this regard, we view archaeological sites not as central places in a landscape container, but as points along paths, defined by their relational context of engagement with their surroundings (McFadyen 2008). This idea is also applicable to architecture, which may be defined as landscapes composed of fragments of distributed practices, where space is created through different series of tasks (2008). This relational approach allows us to address all scales of the archaeological record at a site as features integral to landscape.

In order to organize the analysis of landscape, we structured our methodology according to three operative dimensions: spatial, social and temporal (Wynveldt and Balesta 2009; Balesta, Zagorodny and Wynveldt 2011; Wynveldt, Balesta and Jucci 2013).

The spatial dimension includes placement and practices of building physical space, the flow of bodies through space (Smith 2003), the perception of visual fields related to the control and defensibility of surroundings and visual contact with other sites. The social dimension studies relationships among people, non-human agents and material culture in general (Latour 2008; Lazzari 2005; Hill 2013). This dimension analyzes recovered materials, the reconstruction of archaeological contexts, the distribution of objects, both locally and regionally, the determination of provenience (sources of supply of clay, pigments, lithic material, non-plastic inclusions in pottery, etc.) and the exploration of links between them. Finally, the temporal dimension takes into account chronological time, related to indicators that provide us with synchronic and diachronic information for building, occupying and abandoning archaeological sites, including radiocarbon dating and all kinds of objects and events, such as the association of pottery types and the identification of architectural diagnostic features.

The dimensions of landscape in Palo Blanco

During their sixth and eighth expeditions to Northwestern Argentina, the engineer W. Weiser and his collaborator F. Wolters explored Palo Blanco and excavated many tombs. They recorded details of their excavations with illustrations, so it is possible to reconstruct the context and location of burials (Weiser and Wolters 1920-6). Despite the archaeological importance of the area of Palo Blanco, after Weiser's and Wolter's work research was resumed only at the beginning of this century, with an environmental impact report for tracing the new National Route 40 (Ratto 2006). Between 2009 and 2013, we prospected the area of hills in Palo Blanco, and identified some of geographical and archaeological references that Weiser described during his expeditions (Fig. 2). All this information was analyzed considering the three dimensions of the landscape defined previously, looking for archaeological indicators. Finally, we explored links between them to reconstruct the relational landscape for Late and Inka times.

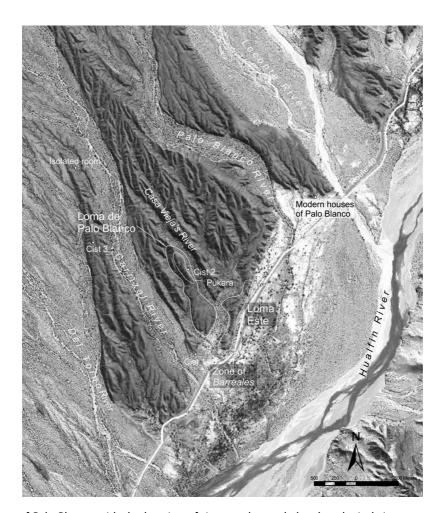


Figure 2 Area of Palo Blanco, with the location of rivers and recorded archaeological sites.

Placement, building, flow of bodies and spatial perception

The Palo Blanco area is characterized in a general sense by 'mesadas' - flat hilltops - and 'barreales' - large spaces with no vegetation at the foot of the hills. Loma Este and Loma de Palo Blanco, which are the sites where concentrations of architectural structures were found, have a relative height of about 8-10 meters in lower sectors, so they are easily accessible from the level of the surrounding riverbeds. However, Loma de Palo Blanco rises steeply from Mesada Baja 40 or 50 meters to the *Pukara* sector (Fig. 3). Since all 'mesadas' in the area have similar heights, from the top a broad view of the valley can be obtained.

Buildings located in Loma Este and Mesada Baja in Loma de Palo Blanco have varying shapes and sizes, with a predominance of isolated rectangular structures, but with some also arranged in pairs, each consisting of a large rectangular enclosure attached to a smaller one (Fig. 4). Isolated circular or sub-circular structures are also observed. While preservation of buildings is relatively good, it is difficult to determine the full extent of structures and their morphologies because most of them are covered by a thin aeolian sediment and gravel. At least fifteen structures were recorded in Loma Este, twenty in Mesada Baja in Loma de Palo Blanco and forty in the Pukara



Figure 3 Photograph of Pukara of Loma de Palo Blanco, seen from Loma Este. It shows the large wall obliquely crossing the southern slope, and at the foot the Mesada Baja.

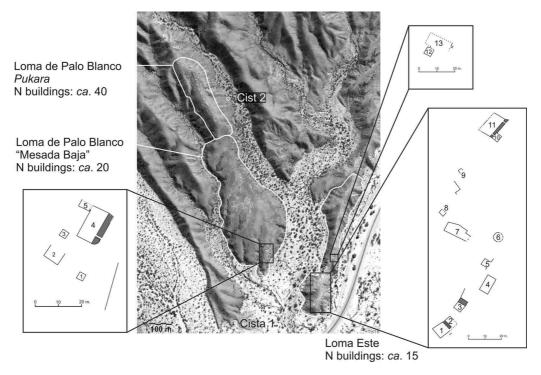


Figure 4 Satellite image of Loma Este and Loma de Palo Blanco (Mesada Baja and Pukara), with two sectors zoomed.

sector. Moreover, at the foot of the northern slope of the *Pukara*, a looted circular structure (Cist 2) – probably funerary – was found, which may correspond to one of the tombs excavated by Wolters

in 1924. Another looted circular structure was also found within Room 4 in Mesada Baja in Loma de Palo Blanco.

In the Pukara, as shown in Mesada Baja, structures are mostly isolated, and in some cases, a small room with a corridor connects with a larger built space. However, the fact that there is less space available results in a higher concentration of structures. On the slope accessing the Pukara from Mesada Baja, there is a 470m-long wall, which starting from there, borders the south and west sides of the hill and is closed on the northern end of the village. Above there are three low walls at different heights. All of these buildings could originally have been higher, collapsing over time, and the height was probably increased by perishable materials (adobe or spiny vegetation) that allowed them to function as effective barriers to entry.

These characteristics lead us to consider the placement of Palo Blanco in relation to the flow of bodies through three sectors: from 'barreales' to Mesada Baja, and from this lower 'mesada' to the Pukara. Connections between the latter two sectors were facilitated by the great wall bordering one side of the Pukara that could play not only a defensive, but a communication role.

Differences between spaces can be related to a differential distribution of practices. 'Barreales' zone would have been associated with many resources (including water) and practices linked to procurement. Dispersed architecture in Mesada Baja suggests the construction of places where multiple practices could be carried out, implying mobility between different kinds of spaces. For example, the use of large structures with covered and partly covered sectors and some open spaces has been associated in similar and probably contemporary sites with food processing (Valencia and Balesta 2013) and the making of lithic tools (Flores 2013). In contrast, the small rooms connected with them were linked to practices such as rest, eating and protection from inclement weather. Meanwhile, the circular small rooms were specifically associated in the region with grinding activities (Wynveldt and lucci 2015), Finally, the Pukara sector is a place of more concentrated habitation suggesting all kinds of daily practices, with more dwelling spaces, but also associated with a defensive space, in which the flow of bodies must have been linked to the walls delimiting the inner space of the village, as well as to short walls located at the ends of the hill that supplied protection against possible attacks. The location of tombs at the foot of the *Pukara* is suggestive: along the South-Central Andes different kinds of funerary structures located around the pukaras have been associated with the nearby presence of the ancestors, which could play an important symbolic role in protection of the village (Nielsen 2002, 2010).

With regard to spatial perception, the analysis of visibility shows there is a panoramic view from the Pukara, so it is possible to control the immediate environment, and it is intervisible with several Late villages (Fig. 5). Intervisibility with other nearby sites located in northern hills is hypothetically possible, although no known sites to the north, such as Loma de San Fernando, Pueblo Viejo de El Eje, Hualfín or Puerta de Corral Quemado, are directly visible (Wynveldt, Balesta and lucci 2013).

Another important element of placement in Palo Blanco is the proximity to the hypothetical main track of the Inka road or *Qapacñam* (Raffino 1988; Moralejo 2011). While no direct evidence of this road has been found in this part of the valley, considering the location of the two known Inka installations in the zone – Hualfín and Quillay, separated by 27km, that is, one day's journey – the route would follow approximately the course of the Hualfín River (Figs 1 and 5). This is important considering that in the valley the few lnka features associated with local elements are found precisely in sites close to the likely route of the road network, for example, El Shincal, La Aguada, Quillay, San Fernando and Hualfín.

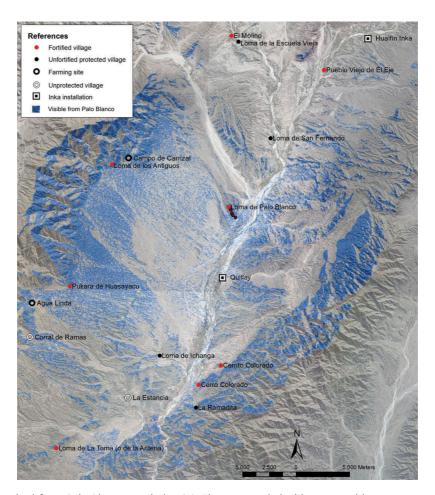


Figure 5 Viewshed from Palo Blanco, made by GIS. The areas in light blue are visible.

The social dimension: distributed practices and material culture in Palo Blanco

Relations between people and material culture can be linked with spatial practices, if we consider places, architecture and material objects as products of distributed practices (McFadyen 2008). In this sense, as mentioned above, the 'barreales', the 'Mesada Baja' and the *Pukara* are defined places, produced by different spatial practices, where people were differentially distributing a variety of architectural elements and material objects, as a result of construction, production, use and consumption practices. Given this, we focus here on material culture found in tombs excavated by Weiser and Wolters in Palo Blanco and remains recovered both in surface collections over the entire area and a test pit excavation in the *Pukara* at Loma de Palo Blanco.

As mentioned above, Weiser and Wolters discovered many burial places in Palo Blanco. In the Late tombs presented in Table 1 ceramic vessels predominate as grave goods; there was only a single tomb which also included a copper object. However, it should be noted that environmental conditions strongly affected preservation of other materials such as textiles, remains of which were found in other burials in the region, usually very poorly preserved. Of the vessels that are part of mortuary offerings, Belén types (Fig. 6a) are present in seven out of

Table 1 Synthesis of the information from Weiser and Wolters' fieldnotes on the tombs of Palo Blanco

Tomb	Type of tomb	Number of individuals	Approx. age	Offerings	Collection number
1	Chamber without pirca	1	Adult	Belén tinaja	6494
2	Uncovered 'cist'	1	Adult	Belén tinaja	6495
				Belén <i>puco</i>	6496
				Famabalasto Negro Grabado puco	6497
3	'Cist' without stone walls	1	Adult	Famabalasto Negro Grabado puco	6498
				Belén t <i>inaja</i>	6499
				Belén <i>puco</i>	6500
4	Uncovered 'cist'	1	Adult	'Yurito' Inka	Not recovered
				Inka vase?	6501
				Yocavil Tricolor puco	6502
				Yocavil Tricolor puco	6503
5	'Cist'	4	Adults	Belén t <i>inaja</i>	6504
				Copper plate	Not recovered
6	'Half cist'	4	Adults	Belén pot	6507
7	'Half cist'	4	Adults	Belén t <i>inaja</i>	6508
				Tinaja	6509
				Belén <i>puco</i>	6510
8	Direct burial	1	Infant	Santa María <i>puco</i>	10148
9	Burial inside vessel	1	Infant	Belén t <i>inaja</i>	10147



Figure 6 Ceramic types associated with late contexts in Hualfín valley, referred to in the text.

nine tombs. Two tombs were associated with Famabalasto Negro Grabado pucos (Fig. 6e), while another tomb contained a Santa María puco and the remaining tomb had two Inka-style vessels and two Yocavil Tricolor pucos (Fig. 6f). Although there is a predominance of individual burials, three structures had four individuals; these multiple graves contain only one, two or three ceramic vessels, all of a Belén type, with the discovery of a copper plate as an exception. In terms of the structural types of tombs, typical 'cists' and 'half cists' make up the majority, but chambers without pircas, an infant's direct burial and a burial in a Belén tinaja were also observed.

Thus, funerary information is very relevant for analyzing how local and regional landscapes were configured. First, the location of the tombs, isolated at the foot of the hills, implied constructive practices beyond the areas of places for labor or habitation, but spatially related to the village. Also, it supposes the movement of the dead and the grave goods, which in the case of cists with multiple bodies could happen over a number of years with the opening and closing of graves. These practices perhaps implied the existence of paths from the village for the transit of those who visited the graves.

Moreover, both the variety of types of burials and funerary objects, involved a whole series of distributed practices that refer to a much larger landscape. As observed in other locations in the valley where there is evidence of Inka influences, various types of vessels were found, including Inka and hybrid types, with local and Inka mixed features, and vessels typically associated with the Inka period, such as the Yocavil Tricolor *pucos* mentioned above. This latter type, whose origin is most likely in the eastern lowlands (Lorandi 1980, 1984; Lorandi and Cremonte 1991), has been largely associated with Inka presence in Northwestern Argentina, mainly linked to *mitimaes* – foreign people moved by the Inkas to do different activities – (Escola et al. 2015; Manasse and Páez 2007; Williams 2000), but also interpreted as being the result of the circulation of exotic styles in Inka times (Giovannetti et al. 2013). By taking into account the total practices involved in the production, circulation and use of such diverse ceramic objects, we see that the links configure an interregional landscape including eastern lowlands, other neighboring valleys and the distant lands of the Inkas. Furthermore, as shown below, relations between people in the Hualfín Valley and the *puna* were also parts of the landscape network.

Surveys conducted in the area of the 'barreales' next to Route 40, and in the hills where no groups of rooms were found, made it possible to identify important signs of human activity. Among them, some buildings that can be associated with Late period activity stand out. One is a circular looted structure, possibly funerary (Cist 1), with accumulations of ceramic and lithic material around it, placed in the area of 'barreales'. Some of the potsherds can be assigned to Aguada and Belén types (Fig. 7c). Lithic findings are particularly interesting because they consist of obsidian artifacts (Fig. 7c) that can be assigned to sources from Laguna Cavi and Cueros de Purulla (Antofagasta de la Sierra, Catamarca) about 200km north, in the *puna* (Escola et al. 2009; Yacobaccio et al. 2004). The origin of these artifacts was established by a widely accepted technique for determining sources, comparing them with samples whose origin is known by X-ray fluorescence, using macroscopic and mesoscopic (with a binocular magnifying lens) examination to ascertain color, transparency and the presence of inclusions (Flores and Balesta 2014; Flores and Morosi 2010).

Surface collections at Loma Este and Loma de Palo Blanco showed the presence of the typical Belén and ordinary Late pottery, with some Santa María sherds near and over the rooms (Fig. 7d, compare with 6c). In room 34 the remains of an ordinary vessel were found on the surface, possibly destroyed by looting (Fig. 7b). We conducted a test-pit excavation in the southern corner of the room, the only sector that was still intact. At around 60cm depth, carbonized bones, charcoal and a gray engraved ceramic sherd appeared; additionally, darker sediment and calcareous concretions were observed, typically associated with the occupation floor.

Regarding the analysis of the material objects recovered in room 34, the obsidian artifact conforms to the Ona source (Fig. 7a), located also in Antofagasta de la Sierra (Yacobaccio et al. 2004). It was formed from a blank corresponding to an undifferentiated flake, with dihedral heel. The archaeofaunal assemblage is composed of forty-three bone remains, some corresponding to a portion of a tibial shaft, from a species of over 50kg, probably a mammal. This bone is only



Figure 7 Examples of potsherds, lithic artifacts and archaeofaunal remains found in surface surveys and excavations in the Palo Blanco area.

partially thermo-altered (Fig. 7a), and, according to the carbonization pattern observed, it was broken before being burned.

Among the abundant charcoal remains found in the test pit, carbonized *Larrea divaricata* and *Larrera cuneifolia* branches were identified at the 50–60cm level. The analysis of these remains suggests that the combustion generated by carbonization would not have occurred in a fireplace, as the constant exposure to heat would not have allowed the preservation of the structure of small branches. The same applies to the case of partially burned bone remains: if they had been thrown into a fireplace, a burned pattern would have been more evident and homogeneous. An alternative explanation may be sought in similar patterns found in other Late sites in the Hualfín Valley, where charred remains of beams, the entwined branches and the mud roofs collapsed on the occupation floors (Balesta and Wynveldt 2010; Valencia and Balesta 2013). In this scenario, the floor would be associated with the final activities before burning and abandonment.

Temporal dimension: Late and Inka times in Palo Blanco

González's chronological work in the Hualfín Valley (González 1955; González and Cowgill 1975) separated farming and pottery-making societies in Northwestern Argentina into five periods: Early, Middle, Late, Inka and Hispanic-Indigenous. Today there is agreement that the Late or Regional Developments Period extends from CE 1000 until the arrival of the Inkas (Núñez Regueiro 1974). Regarding the latter event, although traditional accounts have argued that the conquest of this region and Chile was undertaken by Topa Inka Yupanqui in CE 1470–80, much new archaeological information in general, and chronological refinement in particular, indicates that this event

happened decades earlier (Greco 2012; Ogburn 2012; Schiappacasse 1999; Williams and D'Altroy 1998). Therefore, we can establish the Inka conquest boundary in the interval between 1400 and 1450 ce. The Inka period ends at the entrance of Diego de Almagro in 1536, when the Hispanic-Indigenous period begins, characterized by Spaniards' attempts to subdue natives, who resisted until the mid-seventeenth century (1640–70), when the region was definitively incorporated by Spanish crown.

According to the radiocarbon dates obtained from 'Belén' sites in the Hualfín Valley (Fig. 8), occupation dates mostly to the fourteenth, fifteenth and sixteenth centuries CE, perhaps reaching

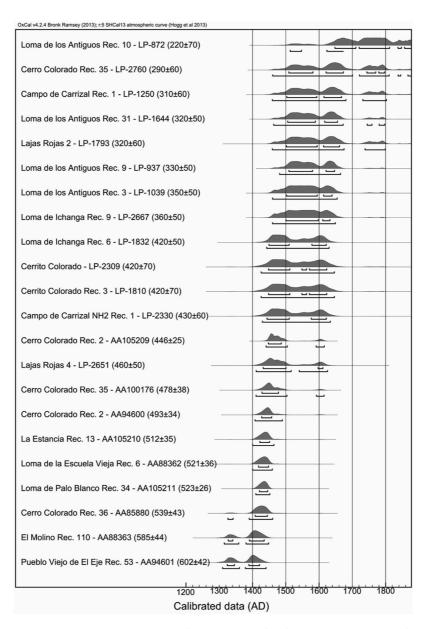


Figure 8 Radiocarbon dates obtained since 1995 from samples of different Late sites in Hualfín Valley.

the seventeenth century in some cases (Wynveldt 2009; Wynveldt and lucci 2013). Regarding dated contexts, excavations have very little accumulation of material; usually collapsed roofs cover a single occupation floor (Valencia and Balesta 2013). It is very likely that frequent cleaning of these floors may have removed the remains of previous events; thus dated events were close to the final abandonment of structures. This would explain the absence of dates that represent times closer to the supposed beginning of Late Period (CE 1000). For this reason we assume that every village probably had a longer history.

Focusing on Palo Blanco again, a radiocarbon date was obtained from a sample of Larrea divaricata ('jarrilla') branches on the floor of Room 34, resulting in 523±26 βP (AA105211), with a calibrated range for 2 σ (95.4 per cent) between 1410 and 1452 AD, using curve SHcal13 (Hogg et al. 2013). This range can be associated with a group of seven dates from different sites that corresponded to occupations more probably dated to the first half of the fifteenth century ce. Thus, we can consider this event close in time to the Inka conquest, and, taking into account the characteristics of the context, the dated materials are possibly remains of last occupation before abandonment.

Palo Blanco in Late and Inka landscapes

Incorporation of theoretical perspectives on landscape based on a relational concept helped us to reconstruct social networks that joined spaces and objects over time in Palo Blanco during the Late and Inka period landscapes. This also allowed the development of an alternative scheme for interpreting the past of the region, beyond the constraints imposed by generalized chronological frameworks and socio-political models based on culture-historical archaeological sequences.

One of the most important features of the location of Palo Blanco is its intervisibility with key places in the southern and western parts of the valley. Both the extensive view of the surrounding landscape and the protection provided by the Pukara suggest that it was a strategic location. In the context of the hostility that seems to have characterized Late pre-Inka times throughout Northwestern Argentina, the population of Palo Blanco must have been concerned about defense to ensure that they were sufficiently warned of and protected against possible attacks. The same applied to the populations of other localities in the Hualfín Valley, which also took advantage of, and incorporated to varying degrees, defensive topographical and architectural features. Furthermore, the 'cists' we have identified are located at the bottom of occupied hills, repeating the pattern observed in many other Late sites of the association of tombs with protected villages. This demonstrates the importance of ancestors, not only as legitimizing agents of the rights over territory or village occupation, but as defenders of the living (Nielsen 2002).

As for the spatial configuration of Loma de Palo Blanco, structures were observed as arranged into two distinct sectors - Mesada Baja and the Pukara - showing different degrees of protection. In the valley, there are other Late sites with separated sectors, such as Loma de la Escuela Vieja and El Molino (Puerta de Corral Quemado), Cerro Colorado (La Ciénaga de Abajo) and Loma de los Antiguos (Asampay). In those cases, it was suggested that this zoning could be connected to group differences in terms of access to defensive spaces and other resources (Balesta, Zagorodny and Wynveldt 2011; Wynveldt 2009; Wynveldt and lucci 2015). A more appropriate interpretation in the case of Palo Blanco, where no architectural features suggesting internal inequalities are recorded, may be related to functional differences in the architectural ensembles at the *Pukara* and Mesada Baja in Loma de Palo Blanco. Comparative excavations between different sectors and

chronological data will be required to understand more deeply the processes of occupation and abandonment of the hills and the places at their feet.

The building configuration both in Loma Este and Loma de Palo Blanco has a scattered pattern, with isolated or pairs of rooms, generally made by a large rectangular structure attached to a smaller square room. This configuration is a typical pattern at Late sites in the valley, and reflects how members of the different households in the villages distributed their practices along the spaces inside the sites. The small rooms were the places where people could rest, eat and protect themselves from the cold nights and winters, while the big structures were spaces for a range of activities connected with food processing (milling grain or seeds, cooking, preparation of chicha, cutting up camelids, Andean deer, armadillos, etc.), and pottery, lithic and maybe textile manufacture.

Based on the study of material objects we can address a set of daily practices that could have been carried out in Palo Blanco, as well as similarities and differences between Palo Blanco and other places in the Hualfín Valley. So far, analysis of regional distribution and consumption of certain resources has led us to propose the absence of inequalities in the access to different material objects typically found in archaeological record – pottery, obsidian and wooden, agricultural and probably faunal resources (Balesta, Zagorodny and Wynveldt 2011; Wynveldt and Flores 2014). The same situation seems to occur locally in Palo Blanco. Furthermore, material culture shared with southern *puna* – obsidian and Belén pottery – and Yocavil valley – Santa María pottery – includes Palo Blanco in a network of interregional relationships. These links allow us to suggest that, in addition to people and objects, knowledge circulated and actively contributed to shaping the Late landscape and daily way of life.

Finally, based on the evidence presented here, including spatial analysis, a room that was probably burned, a radiocarbon date and the presence of tombs with clear lnka influences, we propose that settlement of Palo Blanco was a typical local defensive village during Late pre-lnka times, with some hostile relations with other local sites, where domestic groups – not an institutionalized power – were the center of social life. This village could have been abandoned at the beginning of lnka conquest, maybe as a consequence of political practices applied to control different local groups in the region. In this new lnka landscape, some architectural structures (e.g. the sector of Loma Este, which would have been very close to the hypothetical road along the Hualfín River) could have continued to function in relation to the lnka road, and some places in that area were used to bury local or foreign people who circulated along the *Qapacñam*.

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References

- Balesta, B., and F. Wynveldt. 2010. "La Loma de Ichanga: visibilidad, defensibilidad y abandono en el valle de Hualfín." Revista Española de Antropología Americana 40: 53–71.
- Balesta, B., N. Zagorodny, and F. Wynveldt. 2011. "La configuración del paisaje Belén (Valle de Hualfín, Catamarca)." Relaciones de la Sociedad Argentina de Antropología 36: 149–175.
- Bruch, C. 1902. "Descripción de algunos sepulcros calchaquíes (resultado de las excavaciones efectuadas en Hualfín)." Revista del Museo de La Plata 11: 11-20.
- Escola, P., M. Glascock, M. Korstanje, and N. Sentinelli. 2009. "Laguna Cavi y El Médano: obsidianas en circulación caravanera." In Arqueometría Latinoamericana: Segundo Congreso argentino y Primero Latinoamericano, edited by O. Palacios, C. Vásquez, T. Palacios, and E. Cabanillas, 103-108. Buenos Aires: Comisión Nacional de Energía Atómica (CNEA).
- Escola, P. S., A. M. Elías, L. I. Gasparotti, and N. Sentinelli. 2015. "Quebrada del río Miriguaca (Antofagasta de la Sierra, Puna meridional argentina): nuevos resultados de recientes prospecciones." Intersecciones en Antropología 16 (2): 383-396.
- Flores, M. C. 2013. "Aprovisionamiento y manejo de materias primas líticas durante el Período de Desarrollos Regionales/Inka en el Valle de Hualfín (Depto. de Belén, Catamarca)." Ph.D. diss., National University of La Plata.
- Flores, M. C., and B. Balesta. 2014. "Avances en la identificación de obsidianas utilizadas en el valle de Hualfín (Depto. de Belén, Catamarca, Argentina) durante el periodo de Desarrollos Regionales/Inka." Estudios Atacameños 49: 5-18. doi:10.4067/S0718-10432014000300002.
- Flores, M. C., and M. Morosi. 2010. "; De dónde vienen?: obsidianas de la localidad de la localidad de Azampay (Dto. de Belén, Catamarca)." In La Arqueometría en Argentina y Latinoamérica, edited by S. Bertolino, R. Cattáneo, and A. D. Izeta, 177-182. Córdoba: Editorial de la Facultad de Filosofía y Humanidades, Universidad Nacional de Córdoba.
- Giovannetti, M., J. Spina, M. C. Páez, G. Cochero, A. Rossi, and P. Espósito. 2013. "En busca de las festividades del Tawantinsuyu. Análisis de los tiestos de un sector de descarte de El Shincal de Quimivil." Intersecciones en Antropología 14: 67–82.
- González, A. R. 1955. "Contextos culturales y cronología relativa en el área central del N. O. argentino (nota preliminar)." Anales de Arqueología y Etnología, 11: 7–32.
- González, A. R., and G. L. Cowgill 1975. "Cronología arqueológica del valle de Hualfín, Pcia. de Catamarca, Argentina. Obtenida mediante el uso de computadoras." In Actas y trabajos del Primer Congreso de Arqueología Argentina, 383-395. Buenos Aires.

- Greco, C. 2012. "Integración de datos arqueológicos y geofísicos para la construcción de una cronología absoluta de Yocavil y alrededores." Ph.D. diss., University of Buenos Aires.
- Hill, E. 2013. "Archaeology and Animal Persons: Toward a Prehistory of Human-Animal Relations." *Environment and Society: Advances in Research* 4: 117–136. doi:10.3167/ares.2013.040108.
- Hogg, A., Q. Hua, P. Blackwell, M. Niu, C. Buck, T. Guilderson, T. Heaton, et al. 2013. "Shcal13 Southern Hemisphere Calibration, 0–50,000 Years Cal BP." *Radiocarbon* 55 (4): 1889–1903. doi:10.2458/azu_js_rc.55.16783.
- Ingold, T. 2000. *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*. London: Routledge. lucci, M. E. 2013. "Producción, circulación y uso de cerámica tardía en el Valle de Hualfín (Catamarca, Argentina)." Ph.D. diss., National University of La Plata, La Plata.
- Lafone Quevedo, S. A. 1892. "Catálogo descriptivo e ilustrado de las Huacas de Chañar Yaco." Revista del Museo de La Plata 3: 33–63.
- Latour, B. 2008. Reensamblar lo social. Buenos Aires: Manantial.
- Lazzari, M. 2005. "The Texture of Things: Objects, People, and Landscape in Northwest Argentina (First Millennium A.D.)." In *Archaeologies of Materiality*, edited by L. Meskell, 126–161. Oxford: Blackwell.
- Lorandi, A. M. 1980. "La frontera oriental del Tawantinsuyu: el Umasuyu y el Tucumán, una hipótesis de trabajo." Relaciones de la Sociedad Argentina de Antropología 14 (1): 147–164.
- Lorandi, A. M. 1984. "Soñocamayoc. Los olleros del Inka en los centros manufactureros del Tucumán." Revista del Museo de La Plata 7 (62): 303–327.
- Lorandi, A. M., and B. Cremonte. 1991. "Evidencias en torno a los mitmaqkuna incaicos en el Noroeste argentino." *Antropológica* 9: 213–243.
- Manasse, B., and M. C. Páez. 2007. "El Valle de Tafí en tiempos del Imperio Incaico: inferencias a partir de la tecnología alfarera." *Mundo de Antes* 5: 139–156.
- McFadyen, L. 2008. "Building and Architecture as Landscape Practice." In *Handbook of Landscape Archaeology*, edited by D. Bruno and J. Thomas, 207–314. Walnut Creek: Left Coast Press.
- Moralejo, R. A. 2011. "Los Inkas al sur del Valle de Hualfín: organización del espacio desde una perspectiva paisajística." Ph.D. diss., National University of La Plata.
- Nielsen, A. E. 2002. "Asentamientos, conflicto y cambio social en el altiplano de Lípez (Potosí)." Revista Española de Antropología Americana 32: 179–205.
- Nielsen, A. E. 2010. "Las chullpas son ancestros: paisaje y memoria en el altiplano surandino (Potosí, Bolivia)." In *El Hábitat Prehispánico*, edited by M. E. Albeck, M. C. Scattolin, and M. A. Korstanje, 329–349. San Salvador de Jujuy: Universidad Nacional de Jujuy.
- Núñez Regueiro, V. A. 1974. "Conceptos instrumentales y marco teórico en relación al análisis del desarrollo cultural del Noroeste Argentino." Revista del Instituto de Antropología 5: 169–190.
- Ogburn, D. E. 2012. "Reconceiving the Chronology of Inca Imperial Expansion." *Radiocarbon* 54 (2): 219–237. doi:10.2458/azu_js_rc.v54i2.16014.
- Raffino, R. A. 1988. Poblaciones Indígenas en Argentina. Buenos Aires: TEA.
- Ratto, N. 2006. "Informe final. Actualización de la línea de base arqueológica de la Ruta Nacional 40: Sector Agua Clara-El Eje (Dto. Belén, Catamarca, Argentina)." Unpublished report for UTE Constructora JCR-Helport.
- Schiappacasse, V. 1999. "Cronología del estado Inca." Estudios Atacameños 18: 133-140.
- Sempé, M. C. 1999. "La Cultura Belén." In *Actas del XIII Congreso Nacional de Arqueología Argentina*, Vol. 3, 250–258. La Plata: Editorial de la Universidad Nacional de La Plata.
- Smith, A. 2003. The Political Landscape. Los Angeles: University of California Press.
- Valencia, M. C., and B. Balesta. 2013. "¿Abandono planificado? Restos forestales carbonizados en sitios arqueológicos de La Ciénaga (Catamarca, Argentina)." Bulletin de l'institut français d'études andines 42 (2): 145–172. doi:10.4000/bifea.4031.
- Weiser, W., and F. Wolters. 1920–1926. Field Diaries of the "Benjamín Muñiz Barreto" Collection. Dept. of Archaeology, Museum of La Plata. Unpublished documents.
- Williams, V., and T. D'altroy. 1998. "Al sur del Tawantinsuyu: Un dominio selectivamente intensivo." Tawantinsuyu 5: 170–178.
- Williams, V. I. 2000. "El imperio Inka en la provincia de Catamarca." Intersecciones en Antropología 1: 55-78.
- Wynveldt, F. 2009. La Loma de los Antiguos de Azampay: un sitio defensivo del Valle de Hualfín, Catamarca, Argentina. Buenos Aires: Sociedad Argentina de Antropología.

- Wynveldt, F., and B. Balesta. 2009. "Paisaje socio-político y beligerancia en el Valle de Hualfín (Catamarca, Argentina)." Antípoda, Revista De Antropología Y Arqueología 8: 143-167.
- Wynveldt, F., B. Balesta, and M. E. lucci. 2013. "El paisaje tardío del Valle de Hualfín: una reconstrucción arqueológica desde los poblados protegidos." Comechingonia 17 (2): 187-195.
- Wynveldt, F., and M. Flores. 2014. "La obsidiana en el paisaje tardío del Valle de Hualfín (departamento de Belén, provincia de Catamarca)." Arqueología 20: 193-216.
- Wynveldt, F., and M. E. lucci. 2013. "La cronología Belén en el norte del Valle de Hualfín: viejos problemas, nuevas perspectivas." Arqueología 19 (1): 187-195.
- Wynveldt, F., and M. E. lucci. 2015. "Reconstruyendo el paisaje tardío del Valle de Hualfín: aportes desde Loma de la Escuela Vieja (Puerta de Corral Quemado, Depto. de Belén, Catamarca)." Andes 26 (2).
- Wynveldt, F., and M. López Mateo. 2010. "Pueblos protegidos, murallas y divisaderos: un paisaje arqueológico defensivo en La Ciénaga." In Aldeas protegidas, conflicto y abandono. Investigaciones arqueológicas en La Ciénaga (Catamarca, Argentina), edited by B. Balesta and N. Zagorodny, 277-312. La Plata: Al Margen.
- Yacobaccio, H., P. Escola, F. Pereyra, M. Lazzari, and M. Glascock. 2004. "Quest for Ancient Routes: Obsidian Sourcing Research in Northwestern Argentina." Journal of Archaeological Science 31 (2): 193-204. doi:10.1016/j.jas.2003.08.001.
- Zedeño, M. 2000. "On What People Make of Places. A Behavioral Cartography." In Social Theory in Archaeology, edited by M. Schiffer, 97-111. Salt Lake City: Utah University Press.