INTERACTING IMAGES. ANALYSIS OF ROCK-ART PAINTINGS AND ENGRAVINGS IN WESTERN TINOGASTA FROM 2500 TO 1300 BP (PROVINCE OF CATAMARCA, ARGENTINA)

IMÁGENES EN INTERACCIÓN. ANÁLISIS DE LOS GRABADOS Y PINTURAS RUPESTRES DEL OESTE TINOGASTEÑO ENTRE EL 2500 Y EL 1300 AP (PROVINCIA DE CATAMARCA, ARGENTINA)

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Abstract

In this paper we present the analysis of the images of three rock art sites located at different altitudes of the western Tinogasta region (Catamarca province, Argentina). Relative chronology has dated the three within the same period (ca. 2500 to 1300 BP). The first two present engraved designs over a fallen block (1900 m.a.s.l) and a sandstone shelter (2975 m.a.s.l.). The third site contains eleven panels with painted designs on its ceiling and upper lateral walls of a metamorphic rock cave (3358 m.a.s.l.).The elements to define the unity and diversity of a commonly shared visual language were established using statistical multivariate methods. This was done independently from the specific characteristics of the media and visual resolution techniques used. To that end tree analytical levels take place here: we take under consideration the *repertoire* of represented images; the morphological units combined in each image and the type of articulation technique used in it. The discussion focuses on how the use of these images enable the construction of particular places with their own particular audiences, considering the particularities of each site location within the broader regional context of bolsón of Fiambalá.

Resumen

Presentamos el análisis de las imágenes de tres sitios con arte rupestre emplazados en distintas cotas altitudinales del oeste tinogasteño (Provincia de Catamarca, Argentina) y adscriptos a un mismo bloque temporal (ca. 2500 - 1300 AP). Los dos primeros presentan diseños grabados sobre un bloque caído y un alero de arenisca, emplazados a 1900 msnm y 2975 msnm, respectivamente. El tercero está constituido por once paneles con diseños pintados en el techo y laterales superiores de una cueva en roca metamórfica emplazada a 3385 msnm. Se establecen, por medio de métodos estadísticos multivariados, los elementos que definen la unidad y la diversidad de un lenguaje visual compartido, independientemente de las características específicas de los tipos de soporte y técnicas de resolución visual implementadas. Para ello se ponen en juego tres niveles de análisis considerando el repertorio de imágenes representadas, las unidades morfológicas que se combinan en cada una de ellas y los tipos de articulación empleados. Se discute la forma en que a través del plasmado de estas imágenes se construyen y marcan lugares particulares para audiencias específicas abordando las particularidades del lugar de emplazamiento de cada uno de los sitios analizados en el contexto más amplio del paisaje del bolsón de Fiambalá.

INTRODUCTION

Until recently the lacking of rock art representation was a notable characteristic of high valleys, *precordillera* (Andean foothills), *puna* (high Andean plateau) and western tinogasta's *cordillera* (mountain range) in the Argentinean Catamarca province -Figure 1.

In this opportunity we present the analysis of three sites containing rock art, located in diverse altitudes and environments, assigned to the same time period (ca. 2500 - 1300 BP) through relative dating. We propose to characterize the elements that define the unity and diversity of a plastic common language, apart from the specific characteristics of the media and visual resolution techniques used. To that end three diverse levels of analysis are conducted here, taking under consideration: (i) the *repertoire* of represented images; (ii) the morphological units combined in each one of them and (iii) the type of articulation used in that combination.

SAMPLE PRESENTATION

We analyzed the images of three rock art sites with diverse placing conditions, visualization and resolution techniques. The sites are:

1. Suri Potrero: it is a fallen engraved sandstone block, located 1900 meters high and placed in the northern slope of Suri Potrero ravine. The current river-bed runs 12 meters below it. The plastic space has a 14,84 m² surface, from which a 24 % has been used to embody representations composed by a 16,72% of non figurative motifs and a 7,48 % of figurative ones (Ratto y Basile 2009) -Figure 2.

2. Peña Abajo 1: it is a sandstone shelter placed in the southeastern slope of Abajo River. It is located 16 m above its current bed, presenting an altitude of 2975 m.a.s.l. The plastic space has a 223,83 m² surface, from which only 11,51 % has been used to embody engraved representations composed by a 88,2% of non figurative motifs and a 11,8 % of figurative ones - Figure 3.

3. La Salamanca: it is a metamorphic rock based cave in witch the ceiling and upper walls present painted red Munsell color designs (2000), HUE 10R 4/4. The cave is placed in the eastern slope of Pie de la Cuesta River ravine, 20 meters above the current river-bed, presenting an altitude of 3385 m.a.s.l. The images are distributed in 11 panels limited by irregularities and fissures on the media, defining a 313,85 m² plastic space. The 62,89 % of this space was used for representation of only non figurative designs -Figure 4.

RECORD AND ANALYTICAL LEVELS

The record was done in three different stages. Firstly, we considered the general location conditions. Then, we evaluated the specific characteristics of each media regarding material, dimensions, orientation, visibility conditions from and to the site (Criado 1999). Lastly, the registry of the designs was done through: (i) a general sketch for each panel using plastic joint sheets, (ii) a hand made sketch, and (iii) full, sequence and precise digital photos. The interrelation of these registry techniques allow us to achieve the reconstruction in the laboratory of distinctive characteristics of each motif, taken into account the spacial relation between them and their locations within the media of representation.

With the objective of establishing the elements that define unity and diversity of a common plastic language registered in these three sites belonging to the same time period (ca. 2500 - 1300 BP) we organized the analysis in three levels.

The first level aims to determination of thematic *repertoire* present in each site. For that objective, we built a classification of group of classes, classes and sub-classes of motifs based

on the proposal of Aschero (2006, 2009) for the analysis of rock art from the neighboring region of Antofagasta de La Sierra (Catamarca, Argentina). There is for this region a chronological sequence of 10.000 years built based on the calibration of absolute dating and stylistic types registered there. The similarity between the images gathered in our sample and those shown by the sequence of Antofagasta de La Sierra allows us to place them within the same time period (ca. 2500 - 1300 BP).

Both second and third levels focus to the motifs, defining on one hand the morphological units that constitute them, and on the other, the articulation types used for their configuration. Each of these motifs constitutes a conceptual and visual unit that may be defined by the perception of linear continuance or by the tension resulting from the proximity and spatial segregation (Aschero 1975, Gordillo 2004).

Primary level of analysis: thematic repertoire

We identified a number of 134 designs: 40 on the block of Suri Potrero, 34 in Peña Abajo 1 and 60 in La Salamanca cave. The technical resolution is not even. While in the first two motifs are engraved, in the last one they are painted (see above). These designs were initially organized regarding the possibility of recognizing elements in them that remind us of any natural referent used as a potential model, without assuming the intention of copying such form (Kusch 1991). In contrast, the distinction between figurative and non-figurative designs lays in the fact that, due to the semantic and temporal distance of our analysis, we were unable to notice units to ascribe certain designs to a known familiar model (Aschero 1975).

We observe a remarkable difference in relation to the presence of the two types of visual representation in each site. Over the total of the identified motifs, 82,84% represent non-figurative motifs (111:134), while only 17,16 % are figurative ones (23:134). The first group is diversely represented in all three sites, independently of the visual resolution technique used in each case. In contrast, figurative designs were only registered in Peña Abajo 1 (4:23:134) and in Suri Potrero (19:23:134) -Figure 5.

Aiming to determine the thematic repertoire present in each site, we classified the motifs in 12 classes and 27 subclasses. However, in order to illustrate more clearly the relations, we worked in a higher clustering level, creating more inclusive categories that allow us to reduce the 12 classes defined to six groups of motif classes -Figure 6- described as:

1. Primary non figurative designs: points, small holes and lines, circles, free undulating lines presented isolated or dissociated.
2. Compound non figurative designs: straight lines, angular lines, curved lines, freely undulating lines which: (i) appear in a symmetric and successive way setting a particular background image, or (ii) define a limited space where other elements are placed with filling function.
3. Crosses
4. Footprints
5. Animal Figures of diverse resolution.
6. Human Figures of diverse resolution.

Secondary level of analysis: repertoire of morphological units

Each of the analyzed designs is composed by a minimal number of elements called *morphological units*. Each of these units refers to a defined movement and particular gestural intention that allows us to imagine the movement of the hand that made it. Although the continuity and variation of the drawings depend on the time and repetition of the actions, the instruments utilized and hardness of the media used for the representations, our particular interest focuses on the gestures behind the representations. Then, based on Kandinsky ([1926] 2007), Scott (1951) and Aschero (2009) we have defined seven different types of morphological units. These units allow us to describe all the images of the sample analyzed -Figure 7.

These units are presented individually in only few cases. On the contrary, the definition of the motifs results from the combination of either one or more of the units. In order to report this we generated a binary number representing the presence-absence variability of each of the seven morphological units defined in each motif of the sample. These combinations, expressed in binary numbers, present a hierarquical accommodation defined according to time, degree of control and precision required for its execution.

Third analysis level: articulation repertoire

Insofar, we have mentioned that each of the motifs defined and classified in groups of classes (see above) may be the result of: (i) a unique and isolated representation of a morphological unit, (ii) a combination of a unique morphological unit, or (iii) the combination of more than one unit. Based on Gardin (1978) and Aschero (2009), we have defined three sorts of articulations that allow us to show the way these units are articulated in order to compose each of the motifs registered -Figure 8. As it happens with the morphological unit level and that of its combination, the level of articulation types is also hierarchically organized, and it follows the same criteria (see above).

These types of articulation do not exclude one another; furthermore, they may appear in combinations composing particular motifs. Besides, there are some specific motifs accomplished using only one morphological unit requiring no articulation type at all.

In this paper, we consider that the combination of morphological units and the way they articulate constitute the *technical toolkit* used for the configuration of each of the images composing the thematic repertoire of the sample.

We consider this tool kit to imply a particular gestural intention and selection of certain visual elements that involve socially constituted conducts that reflect an understanding and commonly shared code of the way things are supposed to be done. These particular ways of doing things are not the result of random choices, on the contrary, they are the outcome of the cultural frame in witch they are taught, reinforced, maintained, modified, replaced and/ or hidden.

DATA ANALYSIS

Firstly, we run a diversity analysis using Shannon Weaver index in order to know the richness and homogeneity of each of the three analytical levels at the three sites: group of motif classes, type of morphological units and type of articulations. This allowed us to observe that when comparing representations of the three sites, diversity variation is shown only on the group of classes level while, on the other two analytical levels, the three sites show similar levels of richness and homogeneity, grouping in the same quadrant -Figure 9. Regarding this aspect, we must mention that there are groups of motif classes represented: (i) only in one site, such as human figures registered only in Suri Potrero, (ii) in two sites, such as animal footprints shared by Suri Potrero and Peña Abajo 1 or Crosses in Salamanca and also in Peña Abajo1; or (iii) in all three sites, such as primary and compound non figurative designs.

It is worth noticing that nominal variables considered in the three analytical levels where transformed to ordinal scales, organizing them hierarchically based on simplicity and complexity criteria. This allowed us to run a statistical multivariate study combining *Hierarchical Cluster* and *Discriminant Analysis* (*Ward Method* and *Euclidean Distance squared*). These tools enable the creation of predictive groups that integrate the variables that compound the analytical levels considered. Thus, five predictive groups were defined -Figure 10. All five groups are composed by images of the three sites analyzed, except group 3 showing only elements from Suri Potrero and Peña Abajo1.

This allow us to sustain the existence of differences at image representation level in these three sites, given that some of them are shared but other remain exclusive. However, the same *technical toolkit* was used in image resolution in all three cases. This *technical toolkit* is defined by the type of morphological units and articulation types used to create them. This allow us to say that for this particular moment in the western Tinogasta (ca. 2500 to 1300 BP), although some images were represented in one place and not in the others, the common use of the same *technical toolkit* for their image resolution shows us a unity in the visual language. We consider the diversity at type of images level to be connected to the valorization and construction of different type of places, which leads us to explore the relationship between images and the landscape they are located in.

CONNECTING IMAGES AND LANDSCAPE

So far, we have isolated each image or motif, their morphological units and articulation types in order to analyze each site repertoire in a separate way. However, to decompose the bond and unity between them and the media means to break a very close connection existing also with the landscape they are located in (Bradley 2000, Jones 2006).

It is necessary to give them back their unity and to analyze the way particular places are marked and built for particular audience through image representation. In order to accomplish that we must look at the characteristics of the location of each site from a broader perspective involving the landscape of Bolsón of Fiambalá. It is important to emphasize that here we consider landscape as a relational field, produced as well as lived in as a part of the very same process of dwelling (Ingold 1993/ 2000, Tilley 1994). The ground structure, floral and water availability difficult certain movements and directions, while facilitating others. According to Criado (1993/1999), these predispositions draw a trail, a path, a road and lastly, a way. Therefore, every landscape represents a potential matrix of movement. In the particular case of Bolsón of Fiambalá one of the main characteristics is the existence of several different routes connecting different ecological zones used in prehispanic and historical times that nowadays are still travelled or remembered (Ratto 2006a). This natural corridors connect valley basins such as Bolsón of Fiambalá (1400-1500 m.a.s.l) with other altitudinal levels such as transitional puna from Cazadero Grande (3500 m.a.s.l) in the higher basin of Chaschuil valley. Several environments of pre-cordillera and cordillera (2500-4100 m.a.s.l) are passed through to accomplish the connection between ecological zones (valley and puna). These corridors pass trough ravines, *portezuelos* and passes, offering meaningful shortcuts compared to official vehicular routes. High altitude environments, such as Cazadero Grande, own the particularity of offering material evidence of communal hunting that took place in the region from the Archaic period until Inca times (Ratto 2003).

The analysis indicates that some of the images are shared in all three sites, while other remain exclusive of one or only two of them. However, in all three sites the same *technical tool kit* was used for their resolution, defined by the type of morphological unit and articulation used in the image configuration. Therefore, it is interesting to explore if there is a relationship between this diversity at the image level, the distinctive characteristics of each media and the location of the sites within the broader landscape.

Let us begin with Suri Potrero and Peña Abajo 1. They are both placed in two corridors connecting transitional puna (3500 m.a.s.l) with mesothermic valley (1400-1500 m.a.s.l) – see above. These corridors constitute easy access routes, with water availability enabling the procurement of animal herds probably known and travelled by those who regularly traveled to puna territory, defined in time as a hunting space for extractive as well as for productive societies (Ratto 2003/ 2006b). The fact that engravings where visible for whoever travelled those ways, tell us about its broad audience accessibility. However, the value and

signification of those spaces changed through time. The puna remained as a camelid hunting area in times of republican and state societies, yet no artistic representations were found for that precise time period (Ratto y Orgaz 2008).

On the contrary, the images in La Salamanca are painted on the ceiling and upper lateral walls of a cave located in a narrow ravine cutting a path connecting valley and puna ecological zones, located 800 m from the main corridor. As we already mentioned, the cave is placed 20 m above the current level of the river-bed that provides access to it. The paintings are not visible from the distance, and so it is necessary to approach them. For that, one must ascent up to its entrance and to look up. The lower sides of the cave walls were available and yet they were not used. Neither were the inner sectors of the cave, only the rocky sectors offering the best natural light were used. From a distance it is possible to see the cave but not the paintings. Therefore, the cave is not distinguished from other caves observed during the path that were not marked through image representation. Probably it required some previous knowledge of its location in the past. Moreover, space limitations inside the cave may indicate that these images were restricted to a smaller audience.

Anyhow, all three sites are located in somehow special places, selected to be marked. As we already said, in nearby areas, there are other caves and shelters or blocks available. However, they haven't been *marked*. These places of accidented terrains showing the transition between diverse ecological zones and certain rocky formations are noticed by travelers of higher Andean landscapes, such as thresholds communicating different worlds. They are usually tied to people's transit, marked by rock art and associated to ritual practices in the past and present (Cruz 2006). However, we must mention that although rock art representations in general has de particularity of being potentially *additives* (Aschero 1996), with the capacity to be recycled or incorporated to newer groups, in this case art expresses processes of social discontinuance, given that none of the three sites presents images indicating visual intervention in more recent moments from the time period in consideration (ca. 2500-1300 BP). Nevertheless, those images remained in those places in sight of people passing by and may have been incorporated into a landscape perhaps interpreted in a different way.

Until now, investigations developed in the region indicate that, for the time period analyzed, societies inhabiting the bolsón of Fiambalá were settled in villages located in the valley basin, but kept a high mobility range within the regional landscape. Thus, we consider that relatively reduced groups of people moved around the territory, locating in temporary posts in *precordillera* with resources that enable sheparding and-or hunting in high land puna, where the absence of images in rock media of any kind draw our attention (Ratto 2003).

For this moment it is possible to think of a territorial structure based mainly in specific settlement places connected by paths (Bradley 2000, Ingold 1993/ 2000). It is also possible to imagine that those paths were controlled by particular groups. Perhaps in this context, it might be possible to understand the presence in all three sites of a particular image: the *cartucho* (Figure 11). They are closed rectangles with definite linear contours presenting great similarities with the figures defined by Aschero *et al.* (2006) for Antofagasta de la Sierra. There, rectangular contours define the plastic space in which different designs are represented. For this neighboring region similar designs were situated in time between 500 b C and 500 a C. They were registered in association with paths, productive, funerary and residential spaces, and interpreted as spatial markers that enhance the right of access to certain places and function as protective elements during the journey in life as well as that in death.

In spite of the distance between them, Suri Potrero and Peña Abajo 1 share their location in corridors, certain types of images (such as camelids and footprints) and a relatively good visibility. In contrast, La Salamanca is located 800 m from the main corridor and presents some peculiarities regarding its images. It exhibits non figurative designs of any kind and an exclusive type of image. We refer specifically to a series of zigzags shaped figures in mirror symmetry (Figure 12). This sort of designs present a similar structure from that interpreted by Schuster y Carpenter (1988) as a continuity of human figures mounted one over the shoulders of the other composing the idea of lineages. Although the exhaustive work of these authors is highly valuable, it is necessary to consider that they tend to associate the similarity of constructive patterns of ethnographic and archaeological images, with the equality in their meanings (Carden 2007). Considering that, we believe we can not attribute a specific meaning to these images, but we can see that they locate in a special place, a cave that must have required a previous knowledge for its location, presenting a reduced space and selected among others to be marked through art. Is it possible to think of it in terms of a special place visited only once, for the elaboration of the paintings? Or as a secret place destined to the elaboration of initiation rituals of an exclusive group of people travelling these routes to puna? Is the cave a threshold, an entrance to the underworld protected by particular symbols? There is still a long way to go to begin answering those questions.

Up to now, based on the analysis done here we can say that the images of the three sites are part of a shared visual language with a great internal diversity. The three levels applied to the analysis allow us to observe that not all the sites present the same type of images and that this is connected to the type of places that is being marked and built through its representation. Suri Potrero and Peña Abajo 1 share a particular type of images (animal figures and footprints), their location in corridors and a relatively good visibility. In contrast, La Salamanca shares only the primary and compound non figurative designs with the two other sites, it is located 800 m from the main corridor and the visibility of its images is rather limited. However, the integration of the three analytical levels allows us to say that the images of the three sites are part of a shared visual language connected by the use of the same *"technical tool kit"* for its resolution, the same selection of morphological units and type of articulation that, independently from the visual resolution technique used, indicates the existence of a common code by those who dwelled, built and traveled the bolsón of Fiambalá between 2500 and 1300 BP.

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FIGURES

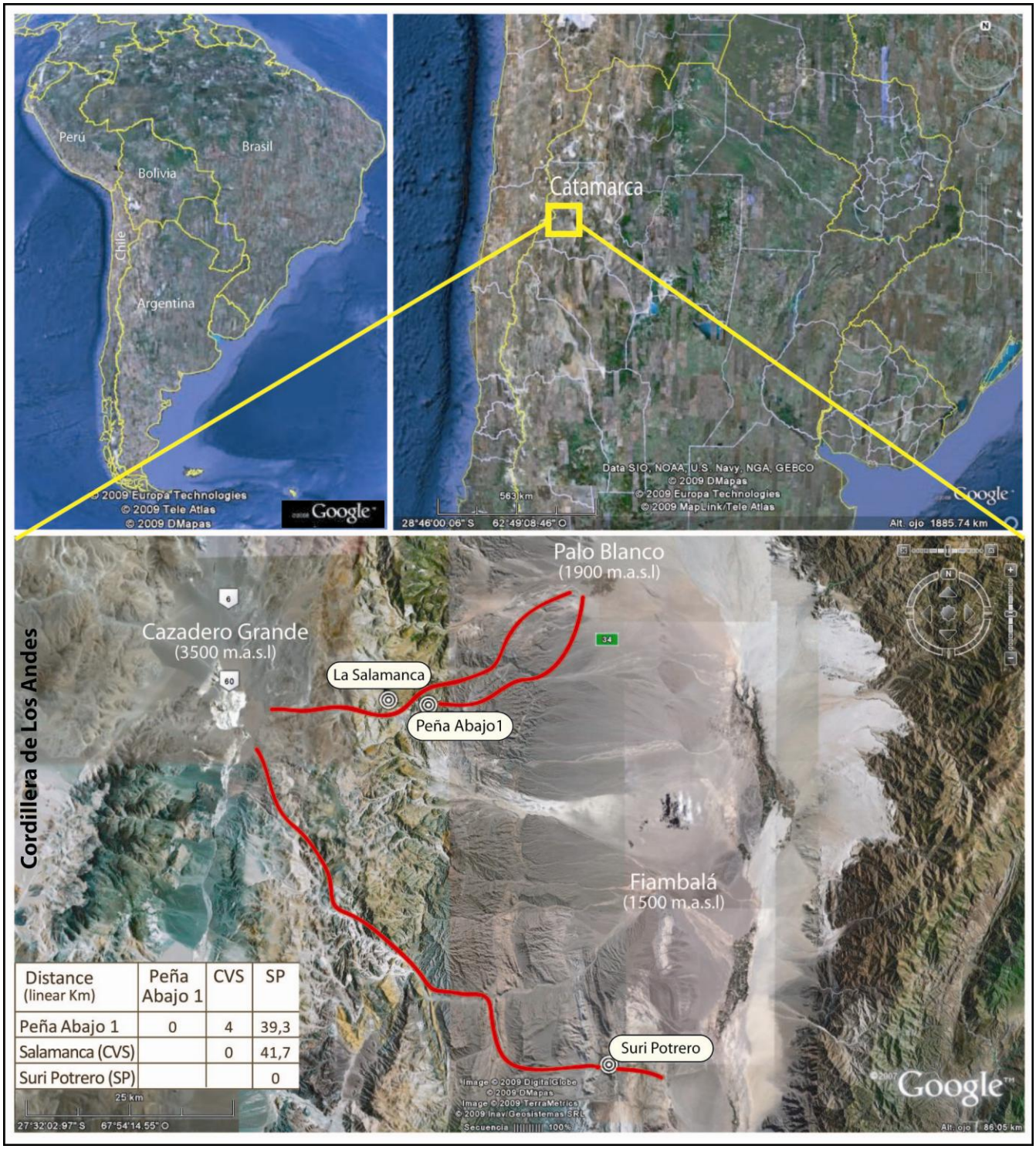

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Figure 1: Locational map for the archaeological sites and natural corridors mentioned in the text.

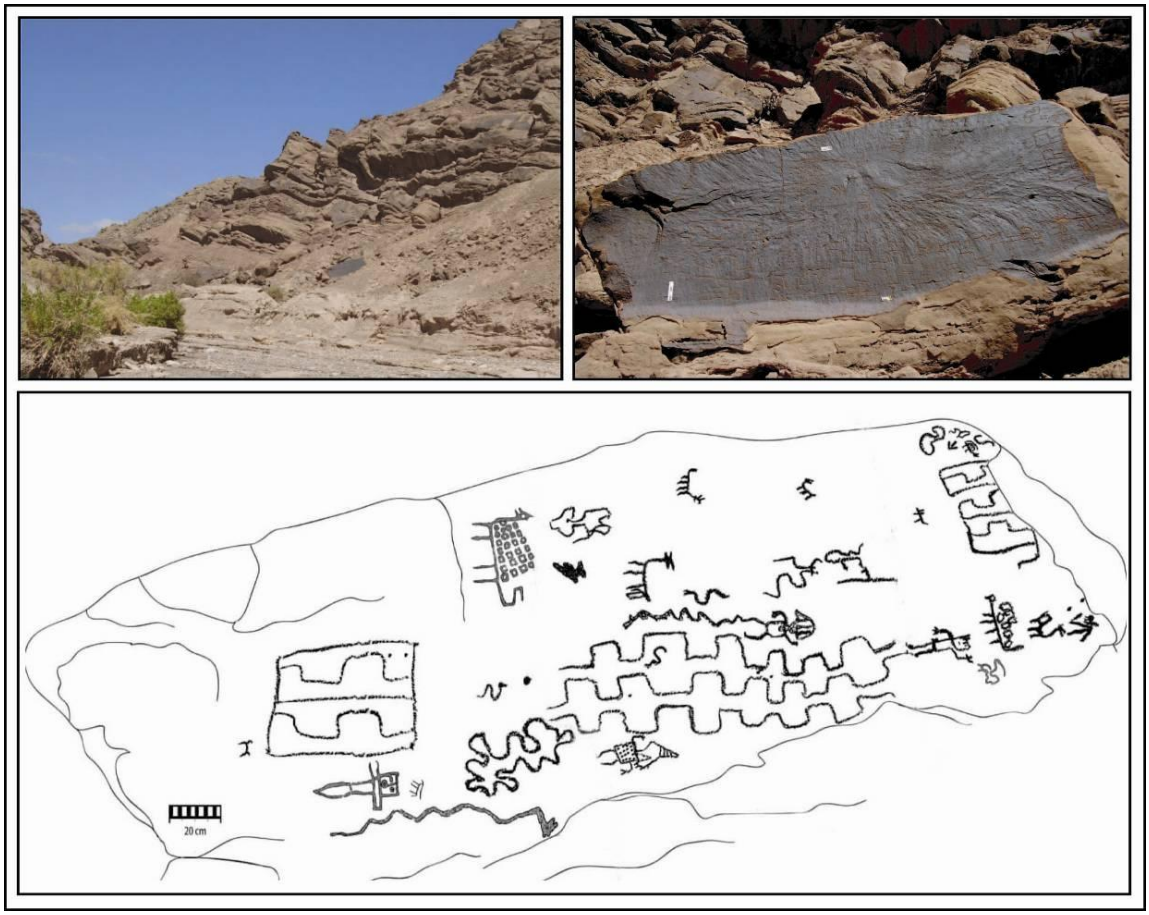

Figure 2: Suri Potrero, a fallen engraved sandstone block, placed in the northern slope of Suri Potrero ravine. Designs and placement on bolsón of Fiambalá landscape.

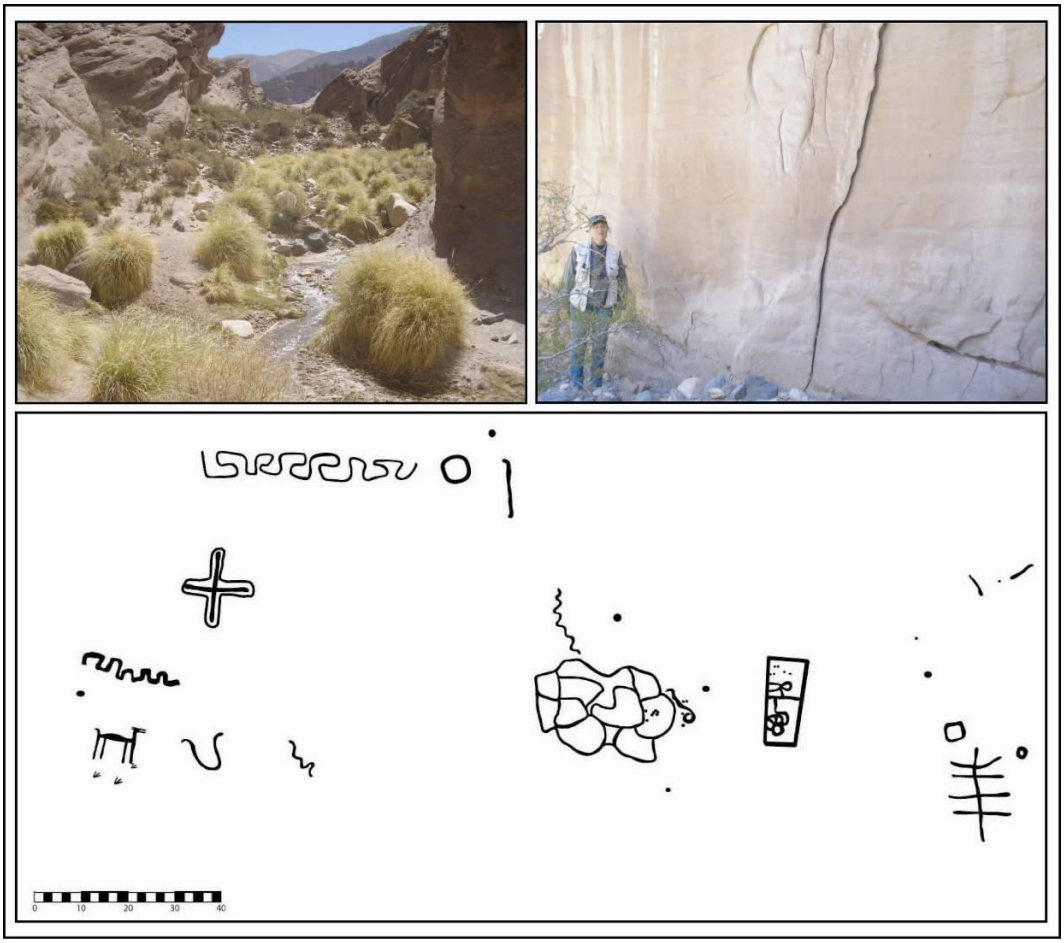

Figure 3:
Peña Abajo1, a sandstone shelter placed in the southeastern slope of Abajo River. Designs and placement on bolsón of Fiambalá landscape.

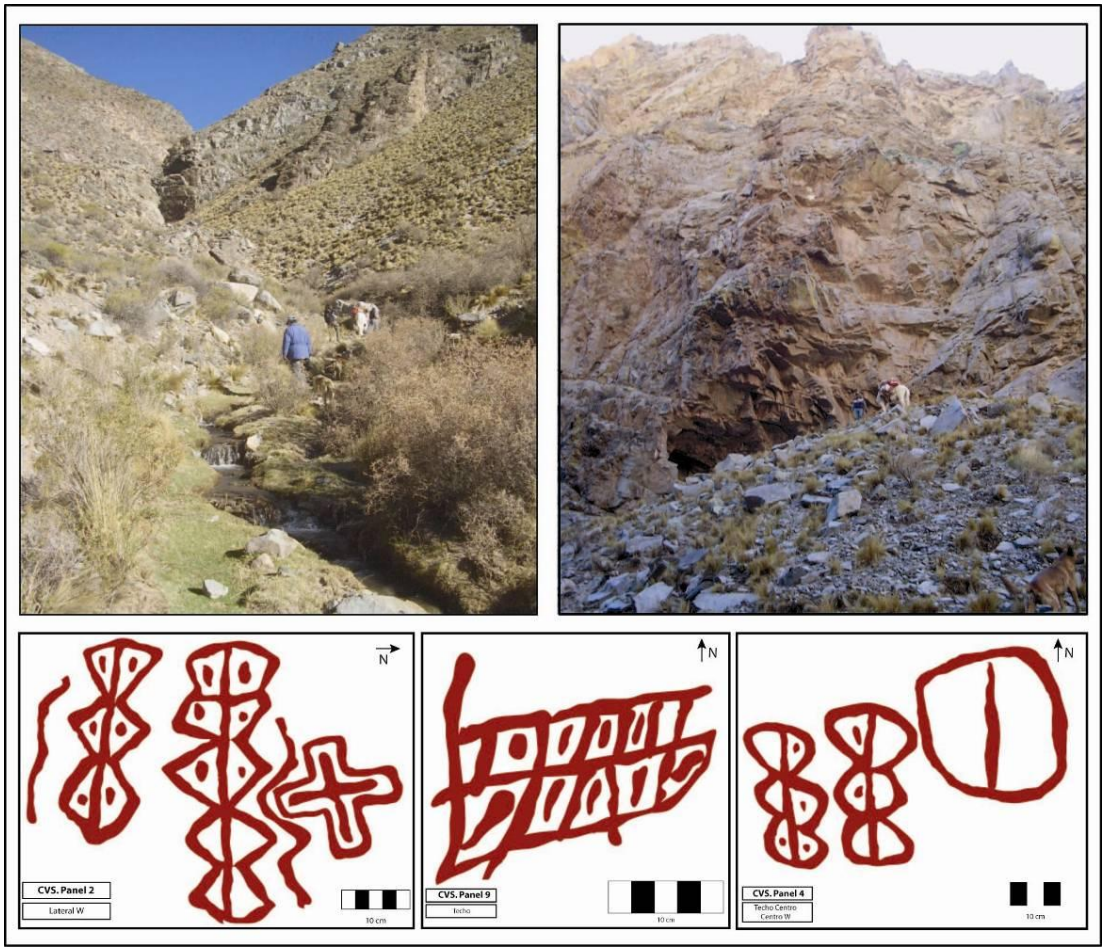

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Figure 4: La Salamanca, a metamorphic rock based cave placed in the eastern slope of Pie de la Cuesta River ravine. Designs and placement on bolsón of Fiambalá landscape.

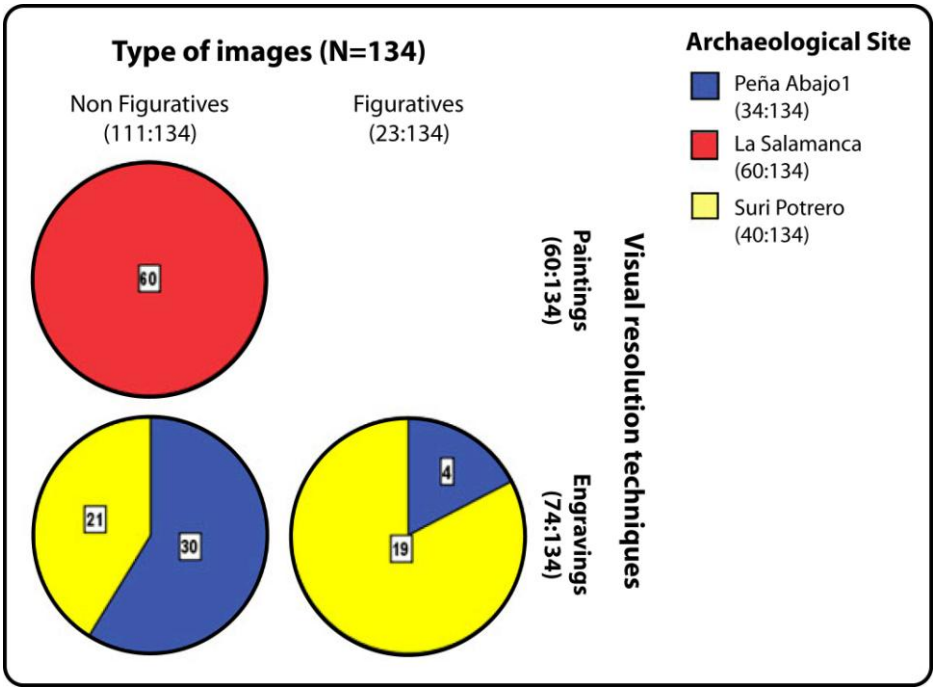
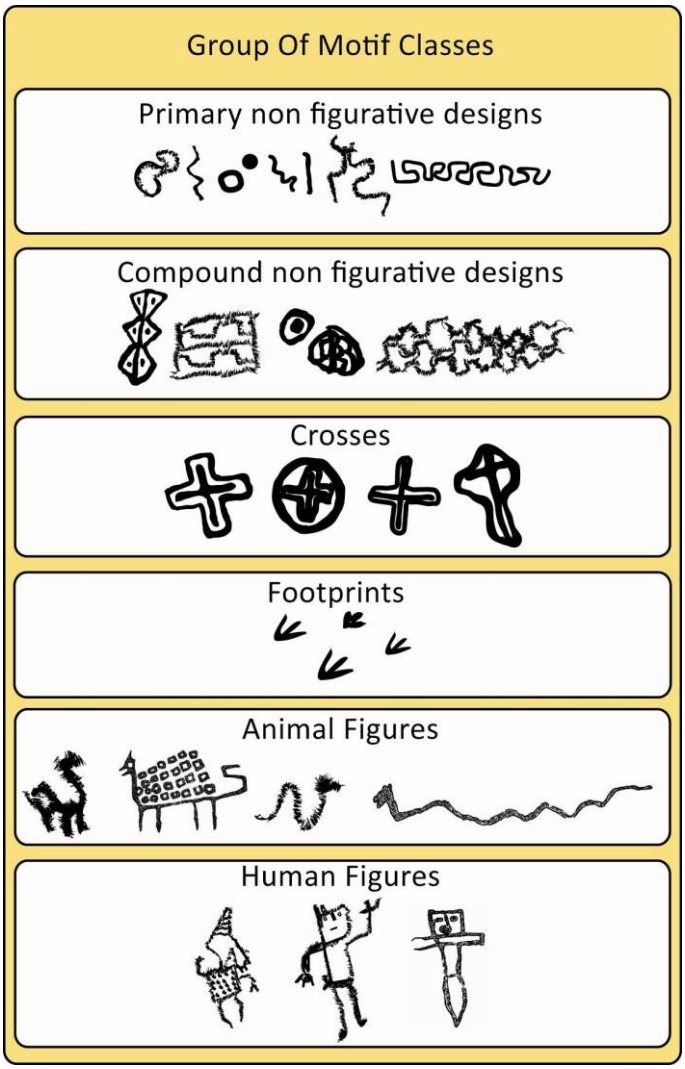


Figure 5: Sample presentation. Quantity of non figurative and figurative designs by archaeological site and visual resolution technique.

Figure 6: Group of motif classes defined



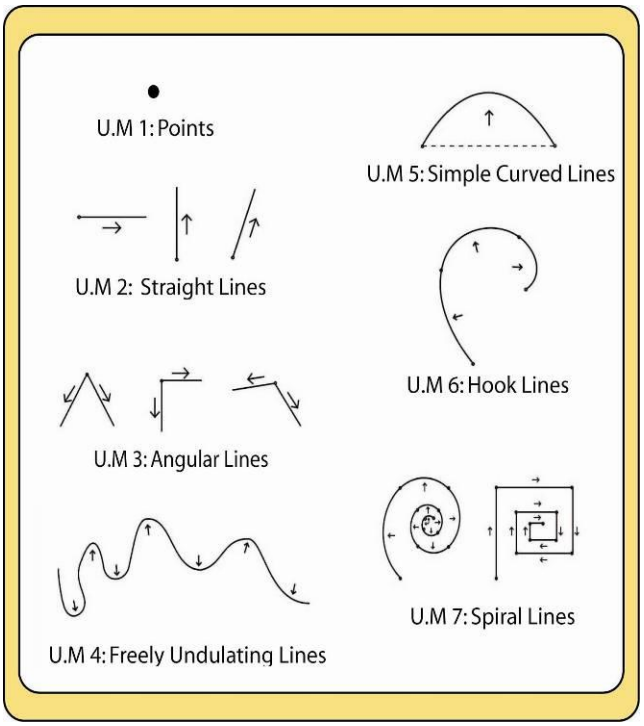


Figure 7: Morphological unit types defined

Figure 8: Articulation types defined

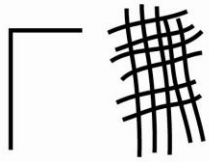
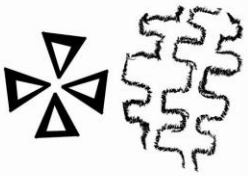
Number and Articulation Type		Characteristics	
1	Additive, polygonal and/or intersected	It includes the cases in which a morphological unit is combined with itself or with others through overlapping, addition or intersection of strokes.	
2	Radial y/o Simétrica	It includes the cases in which a morphological unit is set in a radial or symmetrical way.	
3	Inscripta y/o Solapada	It includes the cases in which a morphological unit defines a limited space where other units are inscribed and also the cases in which units are partially overlapped	

Figure 9: Diversity analysis results

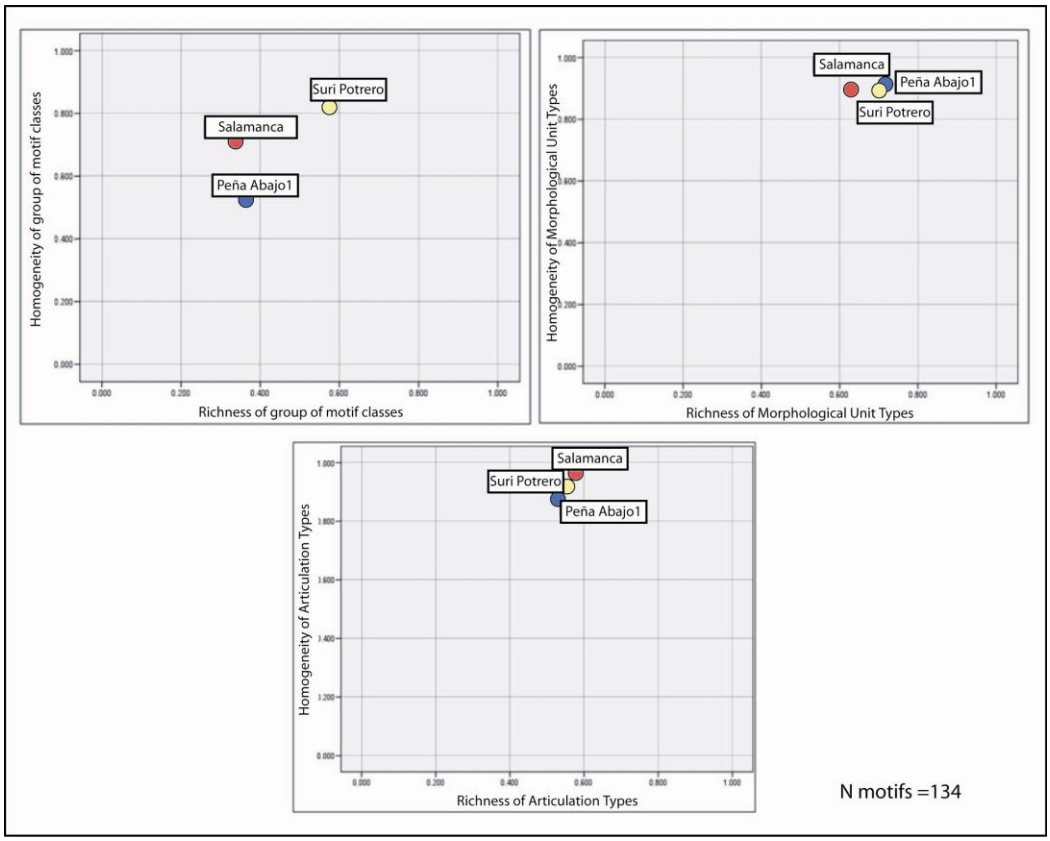


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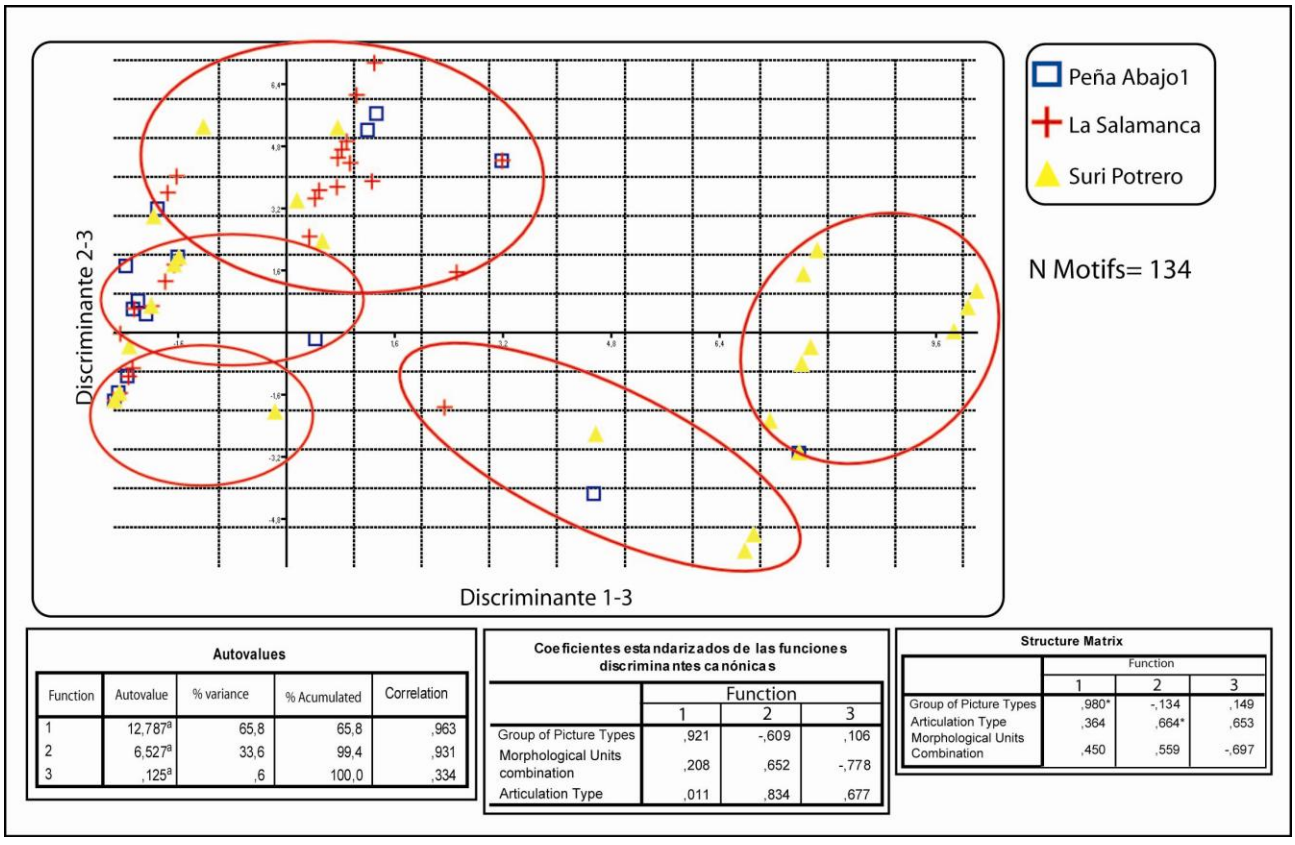
Figure 10: Hierarchical cluster and discriminant analysis results. Five predictive groups were defined, all composed by images of the three sites, except group 3 presenting only images from Peña Abajo1 and Suri Potrero.



Autovalues

Function	Autovalue	% variance	% Acumulated	Correlation
1	12,787[a]	65,8	65,8	,963
2	6,527[a]	33,6	99,4	,931
3	,125[a]	,6	100,0	,334

Coeficientes estandarizados de las funciones discriminantes canónicas

	Function		
	1	2	3
Group of Picture Types	,921	-,609	,106
Morphological Units combination	,208	,652	-,778
Articulation Type	,011	,834	,677

Structure Matrix

	Function		
	1	2	3
Group of Picture Types	,980*	-,134	,149
Articulation Type	,364	,664*	,653
Morphological Units Combination	,450	,559	-,697

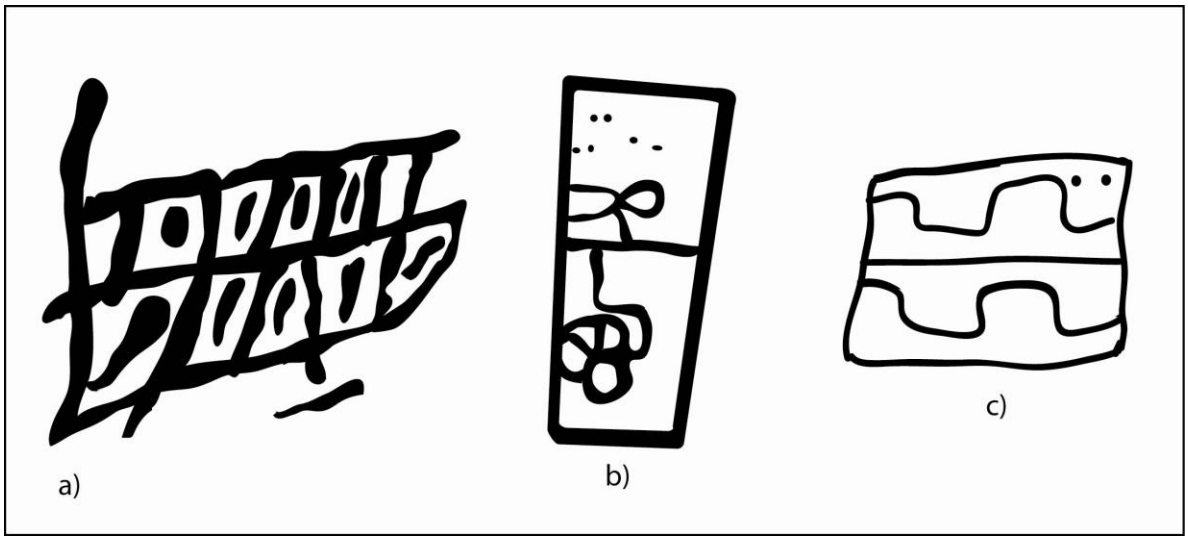


Figure 11: Examples of *cartuchos* from: a) La Salamanca, b) Peña Abajo1 and c) Suri Potrero

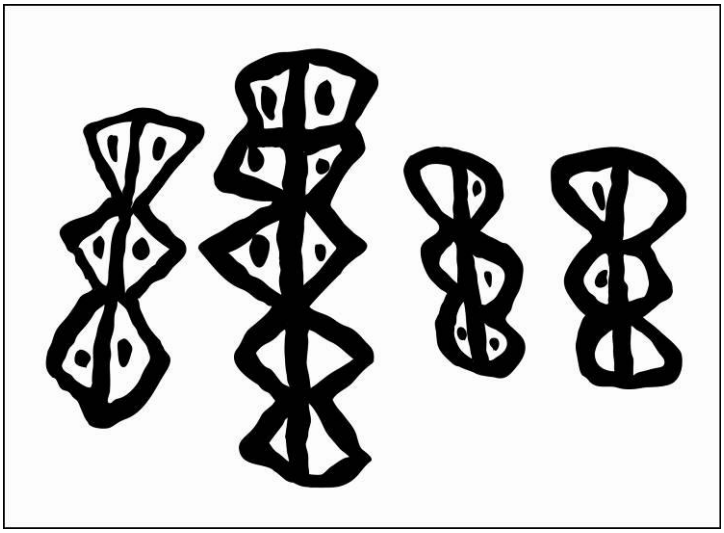


Figure 12: Examples of series of zigzags shaped figures from La Salamanca

REFERENCES

ASCHERO, Carlos. Motivos y objetos decorados del sitio pre cerámico Inca Cueva 7 (provincia de Jujuy), *Antiquitas*. Buenos Aires, 20-21, 2-7,1975.

------ De cazadores y pastores. El arte rupestre de la modalidad Río Punilla en Antofagasta de la Sierra y la cuestión de la complejidad en la Puna meridional argentina. In: Dánae Fiore y M. Mercedes Podestá (eds), *Tramas en la Piedra: Producción y usos del arte rupestre*, Buenos Aires: Sociedad Argentina de Antropología, AINA, WAC, 103-140, 2006.

------ Arte rupestre, contexto y sociedad en el desierto puneño. Universidad de Buenos Aires, 2009. Tesis doctoral en preparación. Ms.

ASCHERO, Carlos; MARTEL, Álvaro y LÓPEZ CAMPENY Sara. Tramas en la piedra: rectángulos con diseños geométricos en Antofagasta de la sierra (puna meridional, Argentina).In: Dánae Fiore y M. Mercedes Podestá (eds), *Tramas en la Piedra: Producción y usos del arte rupestre*, Buenos Aires: Sociedad Argentina de Antropología, AINA, WAC, 141-156, 2006.

BRADLEY, Richard. *An archaeology of natural places*. London: Routledge, 2000.

CARDÉN, Natalia. Paisajes rituales y laberintos: relaciones entre dos sitios con grabados rupestres en Piedra Museo, Argentina. *Boletín del museo chileno de arte precolombino*. Santiago de Chile, Vol. 12, N° 1, 43-60, 2007.

CRIADO BOADO, Felipe. Visibilidad e Interpretación del registro arqueológico. *Trabajos de Prehistoria* 50, Consejo Superior de Investigaciones Científicas. España, 39-56, 1993.

------ Del Terreno al Espacio: Planteamientos y perspectivas para la arqueología del paisaje. *Capa. Criterios y convenciones en arqueología del paisaje*. España, 6, 1-55, 1999.

CRUZ, Pablo. Mundos permeables y espacios peligrosos: Consideraciones acerca de Punkus y Qaqas en el paisaje altoandino de Potosí, Bolivia. *Boletín del museo chileno de arte precolombino*. Santiago de Chile, Vol. 11, N° 2, 35-50, 2006.

GARDIN, J.C. *Code pour l´analyse des ornements*. París: Editions du Centre National de la Recherche Scientifique,1978.

GORDILLO, Inés. El sitio ceremonial La Rinconada: Organización socioespacial y religión en Ambato, (Catamarca, Argentina). Oxford, England: *British Archaeological Reports, International Series* 7, 2009.

INGOLD, Timothy. The temporality of the landscape. *World Archaeology* 25,152-174,1993.

------ *The Perception of the Environment: Essays on livelihood, dwelling and skill*. London and New York: Routledge, 2000.

JONES, Andrew. Animated Images: Images, Agency and Landscape in Kilmartin, Argyll, Scotland. *Journal of Material Culture*. England, 11, 211-225, 2006.

KUSCH, M. Florencia. Forma, diseño y figuración en la cerámica pintada y grabada de la Aguada. In: M. Mercedes Podestá, María Isabel Hernández Llosas y Susana F. Renard de Coquet (eds), *El arte rupestre en la Arqueología Contemporánea*. Buenos Aires, 14-24, 1991.

KANDINSKY, Wasily *Punto y línea sobre el plano. Contribución al análisis de los elementos pictóricos*. La Plata: Terramar Ediciones, [1926] 2007.

MUNSELL. *Soil color charts*. New York: GretagMacbeth (Ed.), 2000.

RATTO, Norma. Estrategias de caza y propiedades del registro arqueológico en la Puna de Chaschuil (Dpto. Tinogasta,

Catamarca, Argentina). Facultad de Filosofía y Letras, Universidad de Buenos Aires. 2003. Tesis Doctoral. Ms.

------ Informe Final. Paisajes y rutas prehispánicas, históricas y tradicionales que integraron el valle de Fiambalá y la puna meridional catamarqueña (Departamento Tinogasta, Catamarca); Primera Fase, Proyecto 6123 CFI y Secretaría de Turismo de la Provincia de Catamarca, 520. Septiembre 2006a. Ms

------ El Arcaico y el Formativo en la Puna de Chaschuil a través del diseño de las puntas líticas (Departamento Tinogasta, Catamarca) *Cazadores Recolectores Del Cono Sur. Revista De Arqueología* 1:93-110, 2006b.

RATTO, Norma y Martín ORGAZ. Transformaciones sociales de la Cacería Comunal de Vicuñas desde los Inkas hasta las comunidades andinas actuales. In: Carlos Díez (ed), *Zooarqueología Hoy. Encuentros Hispano-Argentinos*. España: Universidad de Burgos, 109-123, 2008.

RATTO, Norma y Mara BASILE. Un recorrido "marcado": los grabados de Suri Potrero (Fiambalá, Dpto. Tinogasta, Catamarca). In: N. Ratto (comp), *Entrelazando Ciencias: Sociedad y ambiente antes de la conquista española*. Buenos Aires: EUDEBA, 31-66, 2009.

SCHUSTER, Carl y Edmund CARPENTER. *Materials for the study of social symbolism in ancient & tribal art: A record of tradition and continuity*. New York: Rock Foundation, 1988.

SCOTT, Robert. *Fundamentos del diseño*. Buenos Aires: Lerú, [1951] 1962.

TILLEY, Cristopher. *A Phenomenology of Landscape: Places, paths and monuments*. Oxford: Berg, 1994