

2001

Dra. Lidia Clara García  
C.C.N.I.C.E.T. - U.B.A.  
Inst de Ciencias Antropológicas  
Sección Arqueología

# Ethnoarchaeology of Andean South America

---

*Contributions to Archaeological Method and Theory*

edited by  
Lawrence A. Kuznar



INTERNATIONAL MONOGRAPHS  
IN PREHISTORY

---

*Ethnoarchaeological Series 4*

# 11. Women at Work: A Present Archaeological View of Azul Pampa Herding Culture (North West Argentina)

Lidia Clara García

## Introduction

Azul Pampa is an analytical spatial unit in Jujuy's *puna* region, of ca. 20 km radius, from Inca Cueva gorge's junction with the Río Grande, Humahuaca Department, north-west Argentina. This environment is defined according to vegetation, fauna, climate and altitude above sea level (Ruthsatz and Movia 1975; Cabrera 1976). It has several strata with different resources within which I have carried out archaeological and ethnoarchaeological investigations since 1986. The local paleoenvironmental studies (Markgraf 1985, Lupo n.d.) indicate that present *puna* conditions were established at least since 4,000 years ago, or earlier.

Altitudes range from 3,750 masl average at Inca Cueva, 3,500 masl at Alto Sapagua, and 3,300 masl at Hornaditas. I have also included in this research area the Tomayoc site (4,170 masl) at Sierra del Aguilar, to the West, investigated with the French Archaeological Mission (see Figure 1).

My archaeological investigation focused on finding early Formative occupations at caves and rock shelters at Inca Cueva gorge. Basic assumptions were that those locii would have been part of a broader settlement and subsistence system, which included complementary open air sites at lower altitudes above sea level within the same region to the east, offering different resources. The main activity at the caves and rock shelter occupations would have been herding (basic economic activity) and hunting. The open air sites would have provided an economic complement with restricted agriculture towards Alto Sapagua-Hornaditas. Variability in the use of caves and rock shelters could take place during the same temporal period considered (3,000 to 1,500 years BP), as well as for earlier and later occupations. The appearance of ceramics - taken as a Formative Period indicator - at a certain moment of the process had to do with coping with needs which made people produce

them, rather than with migrations from the eastern forests.

In both (archaeological and ethnoarchaeological) investigations, I deal with the technology and subsistence/settlement aspects of the socio-cultural systems. In the first part of this paper I deal with ceramic production in this particular Andean region, and the role that material needs, kinship, marriage, and religion play in economics and artisan activity. The second part of the paper I examine the micro-regional settlement pattern and how kinship, economics, and religion influence it. Hypotheses that arose from the actualistic studies are tested in my investigation against the archaeological record.

## Methodology

The ethnoarchaeological project was started on a parallel basis with the archaeological project with the following aims: "to obtain information on the present and past use of space, production and complementarity of resources, technical aspects of ceramics manufacture, their form and function relations, action range of the settlers, present activity and discard areas, and their possible use as working hypothesis to be tested archaeologically (García 1988/89:182)."

To fulfill this goal, I designed a series of cross-reference records of settlement behavior and economic activity (García 1994:176-187 in press), emphasizing what I could see and measure from an archaeological perspective. In addition, I recorded oral information, much of which proved to be useful afterwards.

First, I asked the settlers near the Inca Cueva site who was manufacturing ceramics today with traditional methods. The only one who continued to do so was Paulina Colqui de Lamas, who was temporarily living with her mother-in-law, near Tilcara, in the Río Grande valley. In July 1986 I found her there and arranged the visit for the time

when she was going to manufacture ceramics. In September, I reached Alto Sapagua and lived with her for ten days. I used participant observation, taking part in all the tasks Paulina carried out, trying to replicate them as closely as possible. After that experience, I have visited her whenever possible, as well as the Corimayo family (my guide) at Hornaditas. I have also conducted fieldwork at Ema Lamas' Inca Cueva temporary site and with Bruno and Ceferina Méndez, Paulina's nearest neighbors at Alto Sapagua on the road towards Inca Cueva. Through these visits, I have gathered more information regarding marriages, annual movements within the region, religion, art, and other aspects of their life style as well as that of their ancestors.

### The People and the Place

Paulina Culcui de Lamas (34 years of age as of 1986) was born in the Molulo valley, to the southeast, in the *yungas* environment, and married Juan

Lamas, from Alto Sapagua. Her grandmothers were from the Great Valley of Orán in the lower altitude Salta forest. Juan's grandparents were from Alto Sapagua. I will refer to Juan's family later. The post-marital rules of residence are preferably patrilocal, so Juan and Paulina established their most permanent residence at Alto Sapagua. Nevertheless, they have kept their lands in the Molulo valley where they have goats, lambs and cows, and they go down there at least once a year to take care of their fields. There they plant maize and potatoes. Oca is also cultivated there, but not ulluco. The trip is twelve hours walk from Alto Sapagua to Tilcara and another fourteen from there on. Juan's parents live permanently at Tilcara. In 1986, Paulina and Juan already had four children, even though the two older children were at Hornaditas and Tilcara to go to school. In 1995, they had eight children.

Paulina has adopted the local techniques of manufacturing ceramics, which differ from those in her native *yungas* region, and she even uses the

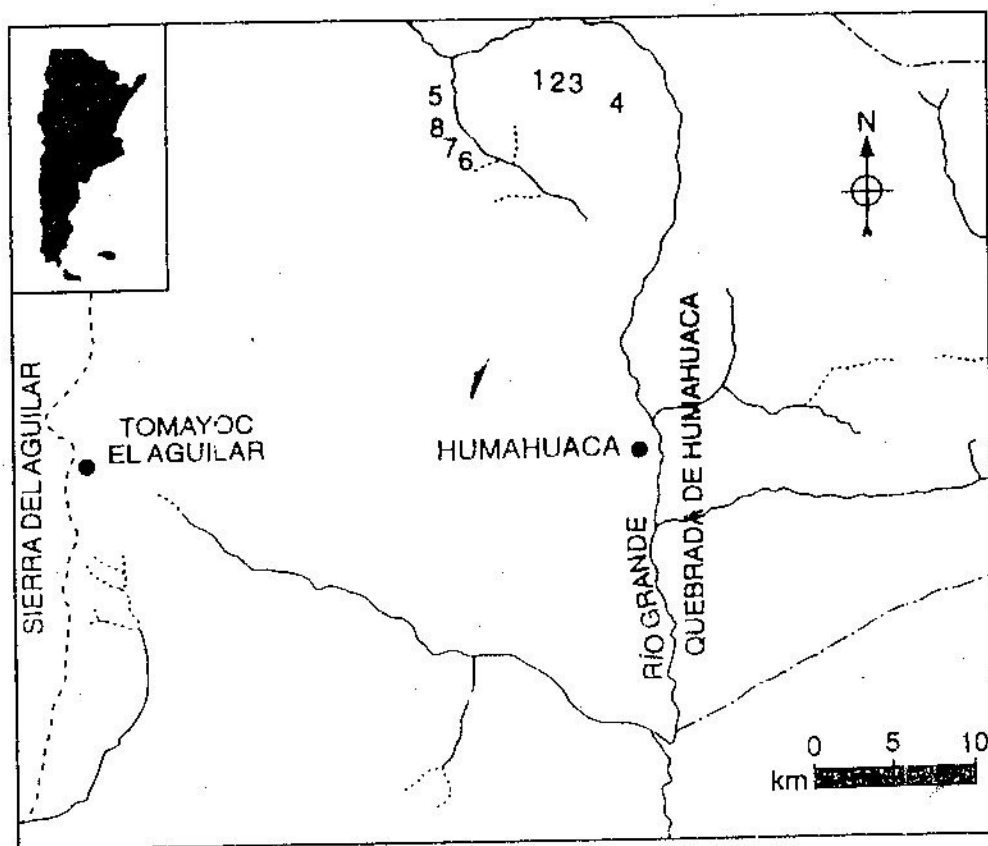


Fig. 1. Azul Pampa micro-region: 1. Alto Sapagua; 2. Churque Aguada; 3. Churque Asiento; 4. Hornaditas; 5. Inca Cueva rockshelter 1; 6. Inca Cueva cave 6; 7. Inca Cueva cave 5; 8. Inca Cueva rockshelter 3. Quebraleña is 10 Km. SW from El Aguilar. Guayatayoc salt mine begins at its mouth. Dotted lines indicate department limits. Tilcara is 40 Km. South from Humahuaca, on the Río Grande.

traditional clay sources, also used by Juan's grandmother (see Figure 2). In the past Paulina made a double batch of ceramics in a day. Now, she is too busy, taking care of the children, the goats and lambs, cooking, spinning, knitting, gathering the wood, and chasing wildcats (*Felis concolor*), which they do not name so as not to call him nearer. Wildcat chasing happened twice during the ten days I spent there. She cannot make ceramics on the hill while she grazes the cattle. One has to be very attentive, goats and lambs have to be oriented towards safe places by throwing stones with the sling (*honda*) to direct them, making noise but not hitting them, and shouting. The condor (*Vultur gryphus*) had also to be driven away in this way when trying to catch a small goat with its claws. In the few calm moments, Paulina spins with the *pushka* or knits wool with two needles.

Archaeological spindle whorls found at Inca Cueva and Alto Sapagua are identical to the one she uses. In general, Juan weaves with the vertical loom and prepares the earth for agriculture. The demands on her time is why she will not make ceramics again for five more years:

This is the primary family with whom I lived. The other family with whom I worked was the Corimayo family, at Hornaditas, to the East. They are Francisco Corimayo, Guadalupe Apasa de Corimayo, and their eighteen children and eight grandchildren. The supernatural, or mythical world, constitutes the meaningful aspect of all of these peoples' behavior and interaction with their environment, and so will be described first.

### The Andean Mythical World

Andean herders at Alto Sapagua consider time as divided in two periods: that of the ancient people and that of the living ones, which is also divided into that of the grandparents' and that of ego. The ancient people's time is placed before the biblical floods, when "things talked." The grandparents' time originated from Noah's ark, visible nowadays as the rainbow, and is more or less similar morphologically and in power content to the world of the living people today. All phenomena that do not match with the Christian horizon are assigned to the ancient people (Cipoletti 1975 -information recalled from Carlos Lamas — see Figure 2). The past and the present have a very subtle limit which is crossed very frequently. A storm that is starting is explained by Ema Lamas as two clouds full of intention, fighting. The sub-present art (in the inner walls of the houses) is said to have been made by

the ancient people or by the grandparents. In fact, it was made by Juan's grandmother, Francisca, some 60 years ago. *Antigales* are the places where the ancient people (*antiguos*) lived, the archaeological sites. As of 1989, the Lamas family (Juan and Paulina) changed their basic site from one side of the Alto Sapagua gorge to the other, placing their new house on top of the *Antigal*. Ancients' ceramics are similar to those of living people. The only difference they recognize is that ancient ceramics have an air inside that makes us ill (with headache for example) and that has to be freed.

Inca Cueva and Alto Sapagua have an Inca road that links them, which crosses a creek in the mountains (Abra del Altar) where a two meter high *apacheta* stands, an ancient Andean *huaca*, where every pilgrim places a stone that brings up the slope. They do this to ask *pachamama* to make the road to come easier, not to catch them, and to take away fatigue as well as illness. Chewed coca leaves (*acullico*) are left there. If one carries alcohol, after giving some to the "*pacha*" and anyone else present, one can drink. Empty bottles remain at the place. Comparing this case with the Awatimarka *huacas* investigated by Kuznar (1995:57-58) we find them similar in these aspects, except that there are no Christian manifestations at Abra del Altar, no altar nor *pachamanq'a* traces, and it does not limit a territory, but communicates two microenvironments used alternatively by the same people.

*Pachamama*, the Mother Earth, gives spatial and temporal meaning for each practice. *Pachamama* is an Aymara name, incorporated later into Quechua when the Incas homogenized Tawantinsuyu, their empire. *Pachamama* has other names, and means center, half, deity, and fertile earth. *Pacha* means time and space. The sense of space defines the world, the earth, the ground, the place; and that of time, the period or span of a determined moment such as a day, year, etc. *Mama* means mother, but has an eternal dimension (Mariscotti de Görlitz 1978:25-28, Kuznar 1995:51).

*Pachamama* is fed and honored at the places where she appears. She is feared, and has to be calmed. Ceramicists feed the *pacha* at the place where they get their clay, as the clay is *pachamama*. They smoke ceremonially and give coca to the earth. This is the way people prevent the earth from catching them, which can also happen if one drinks water from a sacred spring source or lagoon. She lives in the hills and the lagoons are her eyes (García 1995). I have revised under this perspective some of my former appreciations on the use of space and time at Alto Sapagua.

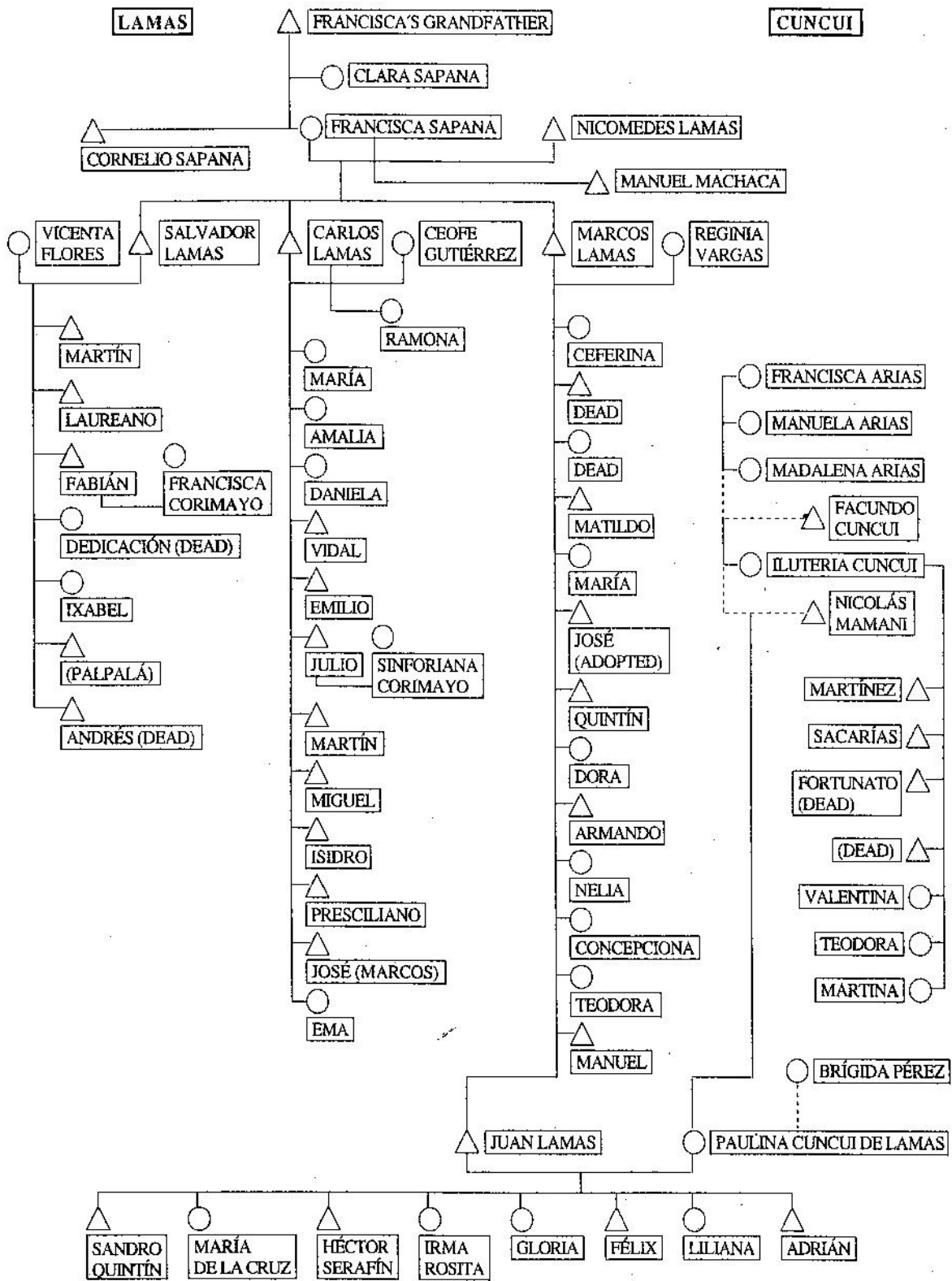


Fig. 2. Lamas Family tree. Corimayo and Gutiérrez, from Hornaditas. Lamas, Méndez and Machaca, from Alto Sapagua. Sapana from the Andes (High Puna). Arias and Cuncui or Cuncui from the Great Valley - Orán, Yungas environment.

*Ollas* and *cántaros* (cooking vessels and water vessels respectively) are always made in September and October. The explanation I was given has to do with the climate (there is less wind then, it is not so cold, and summer rains have not started yet, García 1988). Even though, sometimes it snows hard, so they cannot be made. But to manufacture it, one has to gather the clay, which is *Pachamama*. And she is fed in August. September is the month with more wind in general. So, I now think that the reason for making ceramics in September has to do with the mythical horizon which influences time and space more than practical reasons. There are many more examples of the meaning places and times have under this cosmivision, from the clay to the art (ancient and sub-present). In general, there is a correspondence between the material setting of the annual life cycle and the beliefs that give sense to every action, including the manufacture of ceramics.

## Ceramics

### Resources

The appropriate clay for pottery is obtained from a hill near the Alto Sapagua site, a one hour walk to the north, by excavating 20 cm below the earth, following a clay vein. It is the source used by Mrs. Francisca Lamas, Juan's grandmother. It is the purest in all the region and has no stones. I have also obtained clay from another source at Inca Cueva, one hour walk by Ema Lamas to the east of her temporary site there. X-ray diffraction analysis shows that both clays are very similar in composition, and could have been used in the local manufacture of archaeological ceramics. However, replication experiments at Inca Cueva show that Alto Sapagua clay is more similar in composition to archaeological ceramic sherds (García 1993).

Alto Sapagua clay is gathered during the daily pasturing of goats and sheep which is done from 11 a.m. to 7 p.m. up the Peña Blanca hill. In the same walk, after 3/4 of an hour, we obtained the appropriate sedimentary rocks used as non-plastics (*pirca*: shale). A similar rock (*laja*: a different kind of shale) which has devastating results when firing, has to be avoided. The correct one appears always in the earth. It is blue and soft, and breaks in fine laminations. It is never part of other rocks in the hill. The *laja* rock is green, and sometimes appears mixed with hematite. *Laja* and *pirca* are sometimes mixed. We also used sand from a beach near the houses as a non-plastic. It cannot be taken

from the surface, cannot be modified by the sun, and cannot be frozen. This source is only 5 minutes away from the house. Serafin Lamas (then 6 years old) gathered the sand. He also gathered a pebble that was corrugated, regular and with one plain surface in order to polish the ceramics.

As regards the fuel for the firing, Paulina went during an afternoon to visit her nearest neighbor who has cows (Ceferina), to ask her for dung. We then went together and spent another afternoon gathering two *hepkis* (caps) full. We selected the driest. On the way, we gathered donkey dung and wood, that would be used later on, to ignite the cow dung. From their own corrals, we gathered two more *hepkis* of goat dung to be used as a plain surface below the ceramics to be fired. Cow dung is the best fuel, because firewood is too intense. One danger is wind which, if it blows, causes the ceramics to break. This also happens if one uses goat or lamb dung.

### Manufacturing and Maintenance

The first task is grinding the non-plastics. It is done in the kitchen, where the big grinding stone and slab are placed, used also to grind maize. The grinding stone, or *mano*, is hafted with a piece of wood tied with hide. At Inca Cueva, in a temporary stall, a similar grinding stone and slab is placed outside the kitchen. In this case, the haft is tied with a wire. All the temper is ground the same size, independent of the kind of vessel to be manufactured. Before grinding, the rocks are cleaned of impurities, and soil is separated. The *pirca* used as non-plastic is ground without mixing. After grinding, it is passed through a sieve. From this moment onwards, tasks are done at the compound's internal patio, in a small area protected by walls. The clay mixed with impurities (stones) is discarded. The mixed *laja* is separated. The pure clay is mixed with water and with another more compact clay, always pure. It is placed in a tin, and cold water is poured on it, stirring with a wooden stick. Then, lukewarm water is added, more cold water, and dilution is completed. The proportions of clay, *pirca* and sand are mixed according to the ceramicist's experience.

The next step is to lay down a goat hide with the hairs towards the soil, place a piece of plastic on it, and the temper is ground on top. Last, the clay is added. Then, the paste is molded till it becomes compact. It is tested to see if it is firm. If it is not, more clay and sand have to be added. Once the paste is ready, it is flattened from all sides, it

is wrapped up in the plastic, and it is left in this way wrapped and tied up in the sun. On the following day processing continues. The time one leaves the clay to be malleable in this way, varies with the potter. Mrs. Ceferina Méndez left it more than one day when she made vessels in the past.

Two vessels are begun at the same moment. The paste is not beaten to let the water out. The coils are not molded, but they are pressed with the fingers and put "on horseback" from the lower part already built up from a paste roll flattened and pierced at the start, using it as a base. Paulina works on a flat stone, over a tin which she turns by hand as if it were a wheel, on top of which she puts a little beach sand so that the vessel she is shaping does not stick. Three coils are added at a time, wetting them in the inside part before placement. She places a damp cloth strip on the rim of the partially formed vessel, that is exposed to the air, while she forms the other one. She smooths the inside and outside surfaces with a wet metal spoon that she uses also to form and shape the pot. She says it works better than a wood rib, because it is curved. To add the handles, she has to let the vessels dry out. The decision regarding the manufacture of an *olla* (for cooking) or a *cántaro* (to place water in it), the two kinds of vessels made, is made before starting to build it up but with the paste already made. In one afternoon (6 hours work), two *ollas* are made, a big one and a small one, as well as a small *cántaro*. The next day, the *ollas* are made higher because they will be used for more people. Once the *ollas* are shaped, they are dried in the sun. Three last *ollas* and a *cántaro* are dried together.

One of the big *ollas* had a crack outside. Since it did not go through the wall, it will be polished from outside with a little *pirca*. Two more have to be made, in order to fire them together. I did one of them. Six *ollas* and a *cántaro* or *jarra* were made in three afternoons. The least that can be fired is four or five, so that the dung does not collapse.

In order to use the *cántaros*, Paulina cures them, rubbing, not melting grease inside, which is taken from a goat's belly (*telita*) once the ceramics have been fired, but still hot. *Ollas*, instead, are half filled with a hot meal made with all what is left from the other meals and hot water that is poured and filled in again, very thick. This prevents the food from having clay taste. Then, the thick meal is given to the dogs. The *olla* is then washed, and water with orange peels is boiled inside. After this, the daily meal is prepared in it. At Hornaditas, Guadalupe Corimayo told me that in

order to store water, one has to use a big, good *olla*. For this purpose, when it is still hot, with red-hot coals she prepares a mixture of flour and blood which has to be rubbed inside. Some people do this after firing, when the *olla* is already cold. In this case, they heat it again to put the mixture in it. Water can be stored for 30 days, if it is well covered.

At Azul Pampa, ceramicists do not decorate ceramics. The plates, dishes and spoons at the Alto Sapagua site are made of carved wood and were inherited from grandparents. When the *ollas* and *cántaros* are dry, ceramicists prepare the open air non-kiln firing, which is a hole carved in the earth of 1.3 m in diameter by 0.5 m in depth. It is at the back of the houses, near the old pits used to store potatoes, which are similar but deeper. The one I saw used was also used to store potatoes in the past. Another one from which the mud to make the houses was taken, bigger, was used for this same purpose when more ceramics were fired. The hole is cleaned from rocks, sticks, etc., and a base with goat dung is prepared as a floor. Windy days have to be avoided. Half a day of firing is needed. Before firing, vessels have to be polished with the stone, which is done very quickly. It is rubbed with water and clay on the surface of the dry *ollas* (self-slip after Rice 1987:151). Once this is done, the *ollas* are placed mouth with mouth. Above them, they place the cow dung and some goat dung. Some sheep dung is also used to cover everything, but it has to be very thin. All the holes are filled. Afterwards, the donkey dung and wood are used only to light the fire. Donkey dung is put especially in the holes, and fired at the base, using a match. Paulina, with a stick, takes care that all the vessels are covered. She works alone, aided by Serafin (age 6) who brings sticks.

It is very important to take care of the fire for if it is too strong, the *ollas* tilt (Guadalupe Corimayo, Hornaditas) or crack (Ema Lamas, Alto Sapagua-Inca Cueva). This also happens with the lamb dung, says Paulina, if it is piled very thick. After forty minutes, everything is covered under a controlled fire. When the fire ends, in three hours more or less, the ceramics will have to cool down until the next morning. Then the vessels are taken away. The same technique was related to me at Hornaditas, going back to three generations at least.

I have replicated an open air non-kiln like this one at Inca Cueva, to try to control different variables. Temperature increased in two hours fifteen minutes up to nearly 800°C, and stayed up for one

hour. When there was much wind, the temperature fell precipitously. In another moment, the wind produced the opposite. The maximum temperature was 795°C. I have afterwards excavated this open air cave non-kiln, and it can clearly be distinguished from another one in which fuel was local wood (*queñoa*, *Polylepis* sp.) and which did not reach such a high temperature nor was so constant as temperatures went up and down (García 1993). Paulina said that in the Molulo valley, she fired ceramics in an open fire, but without excavating, because there was no wind. She waits until there is no wind at Alto Sapagua, so she does it late in the afternoon. Because ceramic firing will end late at night, the grease for the *cántaro* that has to be rubbed when the pot is hot, will be applied afterwards, heating the pot again. For this purpose, it is placed in the kitchen fire directly, the same as the "*tiesto*" (vessel to roast maize).

The next morning, Paulina takes away the *ollas*, separating the ashes with a stick. In this observation, one was only a little cracked, which she will use instead of a metal one that is ruined. The crack was made by the wind, she says. She will use a wire to mend it in the neck. It has also a little crack in one handle, and is marked by fireclouds. Paulina says they are caused by the *pirca*, although I think it is variations in the thickness of the dung. She will put it directly in the kitchen fire, and it will become black. This *olla* will be used for cooking. The old *olla* Paulina was using, will rest. She tried to mend the old *olla* with a knife and a cloth.

To maintain the *ollas*, Daniela Lamas told me that broken *ollas* were mended by washing the broken place very well and adding a paste made of goat liver with grog. After that, the vessel is put in the red-hot wood and when it burns, it becomes solid. That is the way her mother (Ceofe Gutiérrez, from Rodero - Figure 3:A) taught her to repair ceramics.

Young people do not make pottery anymore. These are not sex-specific tasks, but I always heard about them from women. Children help in some tasks, as has been explained.

At Sierra del Aguilar, to the west, Juana's mother does not make *ollas* any more since she is very old. They have three sites which they use alternatively throughout the year. At Sierra de Cajas (down to the east), there is clay and *pirca*. The technique she used was similar to Alto Sapagua's, except that she did not mention polishing and the fuel she uses is cow dung. She did not make a hole in the earth. The rest of the process was the same.

### Form and Function

The two basic local types of ceramics are *ollas* and *cántaros* (emic categories). Both are manufactured locally, for family needs or to exchange with neighbors or relatives according to their needs (micro-region level). There is a clear difference between those vessels that are to be used for ordinary tasks such as preparing the daily meals, and those that will be used for other purposes such as storage or preparation of *arrope* (cooked juice) for *chicha* (maize beer). This difference is known and shared by all members of community. Variability has to do also with the people that will use them - the nuclear family, or a greater number of people - at fiestas. These are activities that occur only once a year, for Carnival, in February, when all the large families gather together. This also has a mythical meaning. So, variability has to do with the social role and use of each ceramic piece.

Differences in *olla* functions are related with size, handles, functional color (red or black), type of orifice, wall thickness and decoration. I have described them in detail elsewhere (García 1988:44-46). To summarize, there are different kinds of *ollas*, from the smallest to the biggest: 1 - To cook every day (these are the most commonly exchanged locally); 2 - to boil *arrope* and to drink the *chicha*; 3 - to prepare the *chicha* only, and 4 - to mix maize flour with hot boiling water poured from the other *ollas* for the *chicha*. For this last purpose they also use *virques* (larger *ollas*) that come from "the Andes". At feasts, the second group of *ollas* can be used to cook, but never the third group that is only used for *chicha* and does not go into a fire. A big *olla* is used to store water and prepared as was explained before. They also have *tiestos* that are used to grind maize and to roast it. Old vessels from the *Antigal* were similar to *virques*. *Cántaros* are used to pour water, and also to carry it from the river if they do not have plastic or tin vessels, which they prefer.

Long ago, they had more variety of *ollas*. They made *chicha* from maize flour. Now, they do it by roasting and grinding peanuts very fine, and mixing the paste with water. Then they boil it, and they add cinnamon, grapes and sugar.

The smallest *ollas* are manufactured locally and are not decorated, except for incisions on the handles, which change from one artisan to another. After a potter places these decorations on the handles, the marks are recognized many years later - eight or more - by all members of community (micro-region). Information from Perú indicates



that these kind of signs are used by ceramists that fire their ceramics together in order to recognize them, and that this kind of signature also is found in archaeological ceramics (Donnan 1971 in Ravines 1978:444). Painted *ollas* (the biggest) were exchanged with people coming from the highest *puna* (Abra Pampa and Susques), to the West, and have been *truequeadas* (things exchanged for other things) as I will explain later. They are never used for cooking.

#### *Use, Discard, Re-use*

Once the vessels are manufactured, they are kept in the kitchen if they are empty or in the store room if they are used for storage. They are kept inside the house if they are in good condition and they are discarded outside if they are broken. Nevertheless, in the kitchen's corner there are some broken pots that have not been discarded yet. We also found provisional discard areas at the patio's corner and over the roof above the active bread kiln (Deal 1985:281). Broken *ollas* are re-used as planters. There is no fixed place to discard ceramics. Sherds are left at the place where a vessel is broken, but the patio is swept with a bunch of tied straws, and garbage is gathered in a goat hide while a piece of plastic is used as a shovel. Sherds are found at the borders. For Paulina's family in 1986, they daily use three or four small *ollas*, of three or four liters. When they have visitors, more or less the same quantity *ollas*, but larger ones.

When staying with Paulina, Concepciona visited us with her two children. The women cooked everything in the morning, the breakfast *mate* and the midday *mote*. In the middle of the kitchen there was a high fire, and at a time there were three metal kettles, one metal *olla* and three ceramic ones, another broken one, tied with wire where the *tostado* (roasted maize) is made. In a big ceramic *olla* they were cooking the dogs' meal, in another ceramic smaller vessel, maize, in another even smaller one, *mote* (which we took to the hill to eat while taking care of goats and lambs). In the large metal vessel, water was warmed to clean the dishes. In a smaller metal one, Paulina would prepare rice with sauce (which is not common for them, I brought it). In two of the kettles there was *mate* made from wild plants (gathered from nearby): one for Paulina and another one for Concepciona. Plates and spoons were of metal and carved wood.

*Ollas* last for 30 or 40 years if one takes care of them. Paulina made some eight years ago. One of the *ollas* she was using was ten or fourteen years

old. Paulina and Concepciona said Francisca cooked in it. Paulina thought that it lasted so long because it was made of *pirca*.

#### *Exchange*

People exchange (*trueque*), but not under fixed rules. They do so according to each party's needs. They change *ollas* for other things, and to anyone including neighbors and relatives. Concepciona says Mrs. Teresa Yurquina, who lives at Hornaditas, changed *ollas* for wool and made belts. Some of the *ollas* here do not come from Bolivia, but were made by her. The bigger one, where they prepare the dogs' food, was made by Mrs. Eusebia, who lives up the hill, although Mrs. Teresa made them better. Eusebia exchanged them for meat, the same as Paulina's mother. Some time ago, Paulina made 4 or 5 *ollas* a day, fired them, and used them. If someone wanted to buy one, the person filled the *olla* with flour or sugar, and then she gave it to that person. She does not believe this will happen again, because sugar is now much more expensive. Now, sometimes Paulina is asked to sell, but she tells the person: "take it". So, they leave her other things. Paulina does not make *ollas* to take to the valley because they can be broken on the road. All the *ollas* she made in the past were bartered. Paulina says at the Molulo valley every woman made *ollas*. Her grandmother exchanged one a meter high (for *chicha*) for a goat or two small goats. Oranges come from the lower altitude Orán (to the east). *Ollas* in general come from the upper zone.

The old *ollas* I found broken in the inner patio's corner were "of the grandmothers" (Francisca Sapana), but they did not make them. They exchanged with people that came from Abra Pampa, above, not from the Valley, looking for food. The people from the *puna* stayed for a day and exchanged.

Roads cross the entire area from east to west, including the Inca Road (paved and with steps towards Abra del Altar), as well as trails above the hills, connecting the *puna* with the *quebrada* environments, and they continue to the Yungas, through the Zenta gorge. So, in this case study, roads do not connect sites with the market (Kuznar 1995:59) but link different sites within the exchange system.

#### *The Use of Space*

I have referred formerly to the Alto Sapagua permanent residence, where intra-site organiza-

tion was explained (García 1991). It consists of a compound of family units, each of them having three rooms with different purposes: kitchen, bedroom and store room. Over the generations, some rooms are reused, exchanging functions. Store rooms of extended family members temporarily living at other sites remain closed with merchandise. A special case is that of certain dead people whose room is kept as when the person lived. At Hornaditas, this happens with that of Raúl Corimayo who had an accident at Aguilar Mine in 1988. The room was kept as it was before his death at least until 1995. At Alto Sapagua, Carlos Lamas's room, who died in 1982, was kept at least until 1986 as it had been his, with its wall paintings, closed, as well as his store room. His rooms were all inherited by Ema (which nevertheless has her own three rooms). Carlos' kitchen is open and abandoned, with wood shelves, the grinding stone with the furrow for the haft, and slab, which are the heavier elements.

Each family also has a chapel (Alto Sapagua, Hornaditas) and they have mass when a priest can come. Also, if some facility is run down, instead of mending it they build a new one. That is why at Alto Sapagua there are two bread furnaces. This has been mentioned for the Asto (Perú) by D. Lavallée and M. Julien (1983:108-115). That is why I consider this a typical Andean intra-site use of space.

I have also analyzed kitchens, counting in two cases (Inca Cueva and Alto Sapagua) the local vs. foreign materials to see if I could determine their permanency at each site and their situation within the system (García 1993). I refuted a hypothesis that the higher permanency site would have more replacement of local materials (wood, clay) for foreign ones (plastic, metal, glass). I now consider Alto Sapagua permanent, even though part of the family moves to the other posts during the year. Counts show it has more local material items than the less permanent post.

There are also differences in the sizes. Inca Cueva kitchen (semi-permanent) is 3.96 square meters vs. Alto Sapagua (permanent), which is 20 square meters. Grinding stones and slabs are placed outside the kitchen in the first case, and inside in the second. The first one has more elements manufactured on non-local raw materials than the second one. And the amount of *ollas* used show the difference in the amount of people living at that moment at the site (more at Alto Sapagua). So, the permanency of a site is reflected in kitchen size, the disposition of elements in or out the kitchen

area, the percentage of local vs. foreign material items, and the amount of cooking vessels at each hearth. In contrast, L. Kuznar, considering 15 kitchens and separating the perishable materials of the durable ones, found that cooking elements were basically the same at every site, independent of the site's permanence (Kuznar 1995:30-31).

As regards formation processes and dating, an interesting observation is that the fire is never extinguished at the central hearth, but only covered with ashes and sand and blown with a tube the next morning in order to start it again.

#### *Annual movements*

According to Rafferty (1985), the settlement pattern of the Lamas family would be classified as sedentary on an annual basis, even though part of the family moves periodically to temporary sites, and during its pastoral life creates various occasional sites in its micro-region. The main variable that differentiates the three kinds of sites is the length of time during which people use each site. Differences are related to the settlement pattern, the number of persons forming the occupation unit and the social unit represented, the altitude above sea level, the place's resources, and activities performed and their material correlates which give high or low visibility (Table 1). By considering permanence instead of size as the main indicator, sites can be classified in three classes: higher permanency, lower permanency and occasional. Comparing with Kuznar's site typology (1995:55), his residential sites correspond to the first and second groups; his rest/observation and religious sites, correspond to occasional.

One example of a permanent site is Hornaditas, where the Corimayo family lives year round. Some of their 18 children and 8 grandchildren stay at temporary posts for grazing needs. The rest of the sites, high or low permanence residences, are never used less than three months a year. The longer permanency site during the year round cycle is the Alto Sapagua location. There, we find houses of three nuclear families (Concepciona, Ema and Paulina and Juan Lamas). The settlement is periodically inhabited by members of each nuclear family or by a complete family unit, which rotate between them and are part of an extended family. Each of these nuclear families have different temporary residences at higher and lower altitudes above sea level. These are the shorter permanency posts, in the *puna*, *quebrada*, and *yunga* environments. Some other members of the extended

Table 1. January 1995 rainy season. See references. Sites are located in Figure 3.

Name	P <sup>1</sup>	Alt. <sup>2</sup>	Occ <sup>3</sup>	Res <sup>4</sup>	Use	V <sup>5</sup>	Living Map	Activities	Material
Hornaditas	P	3300	10	AB	Annual	A	IS	ABCDEF	ADOQE
Alto Sapagua	P	3500	10	AB	Annual	A	H	ABCDEFHIR	ADHOQEWXY
Inca Cueva	S	3700	5	AC	6 mo.	A	K	AED	AD
El Cerro	S	3800	1	AC	4 mo.	A	M	AD	AD
Jallagua	S	3500	5	AC	6 mo.	A	L	AD	AD
Terraces	S	3300	1	BCD	5 mo.	A	UABCDEF	B	OSTLR
Terraces	S	3700	1	BCD	5 mo.	A	UABCDEF	B	OSTLR
Abra del Altar	O	3900	2	E	Annual	A	R	JP	VKI
Stop El Cerro	O	3500	2	AFGH	Annual	B	M	KLS	LMU
Stop El Cerro	O	4200	2	AFGH	Annual	B	M	KLS	LMU
Fox Trap	O	3500	1	I	Annual	A	M	M	N
Fox Trap	O	4200	1	I	Annual	A	M	M	N
Wildcat Trap	O	3700	1	J	Occas.	A	KJ	N	Ñ
Wildcat Trap	O	4200	1	J	Occas.	A	KJ	N	Ñ
Cave/Rockshelter	O	3700	2	D	Occas.	B	K	Ñ	STU
Stonepile	O	3300	1	BCD	1 mo.	A	GHABCDEF	T	J
Stonepile	O	3700	1	BCD	1 mo.	A	GHABCDEF	T	J
Thrashing Floor	O	3700	2	BD	1 mo.	A	U	O	B
Path	O	3300	1	E	Annual	A	KRHUOÑQ	P	P
Path	O	4200	1	E	Annual	A	KRHUOÑQ	P	P
Stonewall (fields)	O	3300	1	A	Annual	A	HNQABCDEFJ	Q	C
Stonewall (fields)	O	3600	1	A	Annual	A	HNQABCDEFJ	Q	C
Co. Negro Petroglyph	O	3500	1	K	Annual	A	P	U	F
Horn. Pukará	O	3300	1	CDM	Occas.	A	S	AVW	AZTSP
A. Sapag. Antigal	P	3700	10	AB	Annual	A	T	ABCD	AO
Pintayoc Petroglyph	O	3400	1	AC	Occas.	A	Ñ	D	F
Tilcara	O	2700	1	ED	Occas.	A	V	AÑ	AHP
Coctaca	O	3200	0	BC	Annual	A	D	ABGT	ACJO
Piedra Blanca	O	3500	0	BC	Annual	A	A	ABGTU	ACJOF

**Key**

<sup>1</sup>Permanency: P permanent, S semipermanent, O Occasional

<sup>2</sup>Altitude in m above sea level

<sup>3</sup>Number of Occupants

<sup>4</sup>Resources: A Grass, B Climate, C Water, D Protection, E Pass, F Clay, G Rocks, H Vegetable Foods, I Foxes, J Wildcats, K Condors, L Sand, M Observation

<sup>5</sup>Visibility A high, B low

Activities: A Residence, B Agriculture, C Religion, D Herding, E Slaughter and Charki Preparation, F Art (Decoration), G Weaving (Vertical Loom), H Ceramic Manufacture, I Bread Baking, J Sacrifice, K Spinning, L Knitting, M Fox Hunting, N Wildcat Hunting, Ñ Rest, O Thrashing, P Communication, Q Field Delimiting, R Storage, S Eating, T Field Clearing, U Condor Hunting, V Defense, W Observation, X Burial of the Dead

Material Correlates: A Rectangular and rect/semicircular structures, B Circular structures (thrashing floors), C Stone walls (rows), D Corrals (large circular and small roofed structures), E Paintings and magazines on rooms, walls, bags, F Petroglyphs, G Rock art, H Clay oven, I Pile of stones (Apacheta), J Stone heap (*despredes*), K Coca quids (*acullico*), L Spindle whorl, LL Cemetery, M Needles, N Traps with slabs and wood (deadfalls), Ñ metal traps, O Terraces, P Stone paved roads or regularized footpaths, Q Chapel, R Irrigation ditches, S Lithic materials, T Ceramic materials, U Sling, V Empty bottles, W Vertical loom, X Open kiln earthen pits, Y Garbage/storage pits, Z Defense

Lamas family come and stay in certain rooms, as well as archaeologists.

The lower permanency posts such as Inca Cueva in general are occupied from October through March. During a drought, the transhumance scheme can change. Ema Lamas moved in 1995 to Jallagua, because Inca Cueva had no water. Posts on Alto Sapagua's Hill are used according to grazing needs, when there is water. Occasional sites with low visibility are formed up the Hill, during the daily grazing of animals. One or two stops are made. During them, *mote* is eaten, wool is spun and knitted, wood, clay and rocks to be used as inclusions are gathered. These occasional sites vary from day to day. Except for possibly lost items, every remnant of these activities is gathered and brought down in the *keпки* to the Alto Sapagua settlement. So, archaeological visibility of these occasional sites is very low. Other kind of occasional sites in the same area are the traps for Andean foxes (*Dusicyon culpaeus*). The *apacheta* at Abra del Altar (which connects Alto Sapagua with Inca Cueva) is also an occasional site. I have referred to this site before. I do not consider religious offerings as the main activity here, because religion is part of every day life. The earth is fed even when gathering clay.

At Sierra del Aguilar, on its eastern slope, Juana uses three sites. The upper one (at 4,200 masl) is used during October. In May, they go to the intermediate one. For Carnival (February), they go down towards the Sierra de Cajas site.

Conical houses at more than 5,000 masl average are breeding sites, prepared for the use of one herder. They are smaller than the hill posts of the Azul Pampa case.

### *The Living Map (Figure 3)*

In January 1995 I visited Guadalupe Apasa de Corimayo and stayed at her Hornaditas permanent residence for three days. I showed Guadalupe the Rodero map, made by the Military Geographical Institute in 1936. She does not know how to read, but she could see the rivers and I could read her the words. Localities are marked by the names of inhabitants. So, she started explaining to me what family members lived in the localities, her own family story, former resources of the land and their life style when she was a child. The results of this can be seen in Figure 3 and Table 2.

Location (A) is Rodero (Piedra Blanca), where Don Francisco Corimayo, her husband, has a big field and small petroglyphs. In this area, people

grew potatoes, oca, maize, *marí* (peanuts), *haba* (Paba beans), *arveja*, *cebada* (barley) and various classes of wheat of different colors. They also hunted vicuña, guanaco, *lechuzas* (owls), deer and condor. Location (B) is Queragua, and Benifasio Apasa was her grandfather. She comes from Achicote (C) Location D is Coctaca, where the main agriculture lands are. People grew crops there and took the grain to Ucumazo for grinding, at Calete Gorge. Guadalupe told me that before, each family was self-sufficient. There was no need to buy anything, except for sugar. When she was a child and salt was necessary, people took donkeys and went to the Guayatayoc salinas, to the west of Sierra del Aguilar for salt. According to her information, localities A to F in Figure 3 are connected by kinship ties with Guadalupe's family. I could also see that the agricultural sites (A to F), are related to the Hornaditas area (Q,I,S,G), with the Alto Sapagua sites (H) and with the Inca Cueva lands (J), where Don Francisco is the godfather of Mrs. Cruza Méndez, who grazes some 50 llamas. The Méndez name (H-R) was recorded by C. Aschero in 1973 as the real name of the Corimayo grandmother. So, this reinforces the former view of the regional strategies reconstructing the linkages I made before by following their posts during the year round dynamic sedentism as well as from the Lamas genealogical chart. I have marked in the map several archaeological sites also, e.g. Location P (Cerro Negro Petroglyphs), because those places have a meaning for Guadalupe. Prehistoric localities have significance nowadays in several ways. In general, images are seen and not touched, but they record the presence of the condor, and that the grandparents hunted it there. Also, as I mentioned before, some of their permanent or semi-permanent posts are placed upon or near those of ancient people (archaeological) or grandparents' (own family, historical) sites. That happens at Inca Cueva (K), Alto Sapagua (T), The Hill (M) and Hornaditas (I-S) and Jallagua (L), as well as in the Tomayoc control case. Even the agriculture terraces are re-used (U,O,N,Q), and I have been shown many archaeological arrow points, spinning whorls and stone recipients found at that places. At the Corimayo kitchen (I), for example, the enormous "*marai*" (grinding slab) was found when constructing the present house, and the very big grinding stone (after Francisco Corimayo, to grind maize) is part of the present house's basement.

In the eastern area (Coctaca-Rodero), a photogrametric study of the prehispanic vs. hispanic agriculture was made by Albeck and

Scattolin (1991). Their results show that prehispanic cultivated lands covered 3,991.3 hectares vs. 533.76 cultivated nowadays for Coctaca, and 2,280.0 hectares vs. 637.68 cultivated nowadays for Rodero. A similar situation can be seen at Alto Sapagua gorge, with thrashing floors unused nowadays and agricultural terraces only used partially, even though in comparison with Coctaca-Rodero, agriculture seems to have been always more restricted.

I have marked in the living map (Figure 3) and Table 2, 22 localities linked between them according to Guadalupe's knowledge, placed in the order in which she mentioned them. We can aggregate them in four groups. The first one (A,B,C,D,E,F,P) occurs between 3,200 to 3,500 masl and the basic function of sites in this group is high permanency residential, agriculture, and hunting. The second group (I,Q,S,G) is between 3,300 to 3,400 masl and is basically high permanency residential, and agriculture land. The third group (N,N̄,O) is at 3,400

to 3,500 masl and is used basically for less diverse agriculture, and residence of smaller family units. In the fourth group (H,U,T,L,M,J,R,K) sites are placed between 3,500 to 4,200 masl and are mostly semi-permanent residence posts and occasional sites at grazing lands, religious, and hunting sites. Table 1 shows details of different kinds of sites in one visit, with demographic information, activities and material correlates.

If we relate permanency with altitude above sea level, permanent sites are placed between 3,200 and 3,700 masl. Semi-permanent sites are located between 3,300 and 4,000 masl, while occasional sites are found between 2,700 and 4,200 masl, or in all levels. Semi-permanent and permanent sites differ in that the former have a wider altitude range than permanent sites and are more discrete.

In general, grazing stalls are at 3,500/3,750/3,800 masl, up to 4,200 masl. Basic residences are at 3,300/3,500 masl. Agricultural lands are at 3,200/

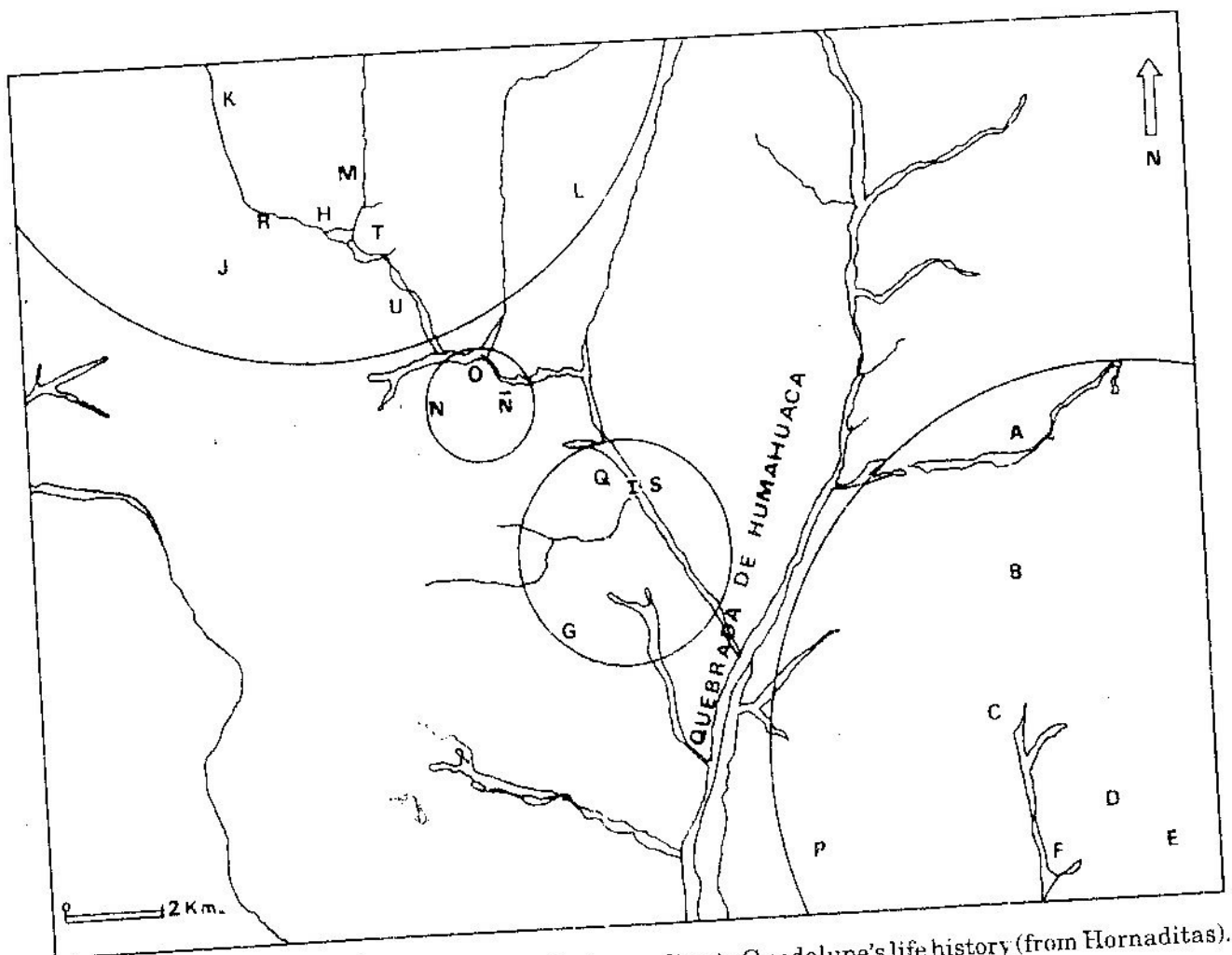


Fig. 3. The Living Map. Sites have been marked according to Guadalupe's life history (from Hornaditas).

Table 2. Guadalupe: Sites linked through kin ties. Sites are numbered in the order she gave them when linking localities through family ties. Related with Figure 3 through the Living Map column.

Name	Activities	Alt.	Kinship	Map
Piedra Blanca	Herding, Big field, Agriculture, Hunting	3500	F. Corimayo Married Guadalupe Apasa	A
Queragua	Agriculture	3300	Bonifasio Apasa, Guadalupe's grandfather	B
Achicote	Hunting, Agriculture, Residence	3400	Mauricia Soto, Guadalupe's grandmother	C
Coctaca	Loads taken to mill, Archaeo.	3200	Ramón Méndez (Alto Sapagua)	D
E. Yanes	Agriculture	3300	Stepson of Sabrina Apasa(cousin)	E
F. Toconás	Agriculture	3200	Florencio Toconás, Guadalupe's father	F
Mocotes	Herding	3400	Dionisio Apasa, Guadalupe's brother	G
Alto Sapagua	Residence, Corrals, Agriculture, Archaeo.	3500		H
Hornaditas	Herding, Big field, Agriculture, Residence, Archaeo.	3300	Ceefe Gutiérrez, (Rodero)	I
Abra del altar	Road to stalls, Apacheta	3900		R
Hornaditas Pukará	Residence	3300		S
A. Sapagua Antigal	Residence, Archeo, Agriculture	3700		T
Old Terraces	Agriculture, on archaeo. terr.	3500		U
Angosto d. Sap.	Rock art, Circular str.	3400		O
C° Negro Petro	Condor hunting	3500		P
Jallagua	Herding stall, Archaeo.	3500	Ema Lamas	L
Sapana	Semi-perm. herding, Clay and inclu., Wood, Hunting	3800	Paulina Lamas	M
Piedra Grande	Residence, Agriculture	3500	Saturnino Corimayo	N
C° Pintayoc	Herding	3400		N
Horn.mounds	Residence, Agriculture	3300		Q
Inca Cueva	Semi-perm. herding, Archaeo.	3750		K
Rincón del Chulín	Watering station	4000	Cruza Méndez, Guadalupe's godchild	J
Tofouso		3700		

3,300 masl, up to 3,500/3,700 masl. Coctaca and Hornaditas people look towards Sapagua - Inca Cueva and farther. Alto Sapagua people do the opposite.

Plants used at Alto Sapagua have been placed in the living map using the same characters (Table 3). Provenience shows a strong relationship from this *puna* environment with the Inca Cueva area (K:Highlands vegetation province according to Ruthsatz and Movia 1975 vegetation map), and Pre-puna provinces (Coctaca and Tilcara).

### Complementary Weddings

In the Lamas family genealogy (Figure 2), we find several marriages connecting the "upper people" - herders - (Alto Sapagua, and formerly the western High Andes and *puna* region) with the "lower people" - agriculturalists - (Hornaditas and Coctaca-Prepuna/Rodero-*puna*, to the east, and the Valley region in the SE). We can find at least one of these marriages in every generation. Cases are as follows:

1. Francisca Sapana's grandfather came from Abra Pampa (High Andean Vegetation - *puna*). Clara Sapana, his daughter, was from Santa Ana (west of Sierra del Aguilar - *puna*). She married someone from Alto Sapagua, and came to Abra Pampa.
2. Francisca Sapana married Manuel Machaca, from Hornaditas (Prepuna vegetation - quebrada).
3. Carlos Lamas, her son, married Ceofe Gutiérrez, from Rodero (*puna*). And after her death, he married Ramona Valdivieso, also from Rodero, with whom he did not have children.
4. Fabián Lamas, Carlos' nephew, married Francisca Corimayo, from Hornaditas, and moved there.
5. Julio Lamas, son of Carlos, married Sinfioriana Corimayo, from Hornaditas.
6. Juan Lamas, the son of Marcos (who went to work at the civil register at the Molulo valley, to the east and went to live afterwards at Tilcara - prepuna) married Paulina Culcui, from that *yungas* environment. Armando, Juan's brother has inherited his habitation site, and lives there. Also their sister, María, lives there.

Apart from all these marriages, many of the members of this extended family have gone to live elsewhere. Martín is at Abra Pampa. One of his brothers, is at Palpalá. José is at Juella. Dora is at La Quiaca. Another of Marcos' sons, at the Valley. Teodora moved to Juella. So, they have scattered to all the environments. This is due to family residence norms, in which the younger is expected to stay to take care of the animals and the rest have

to go to live elsewhere. The rules are not strict. If the younger leaves or dies, the younger who stays back has to replace him or her. That is why Ema has stayed, even though she is married to a man that lives in Humahuaca (quebrada - prepuna). According to Paulina, in 1986, Rosita or Quintín would have to do this. They maintain relations with all of them. Even when offering a child, they expect to build a relationship (*compadrazgo*: state of being godfather or godmother).

### Caravans

Caravans connect the different ecosystems through the exchange of *ollas*, and meat or animal derived products. They do not come from Chile, but instead they originate from Susques, Coranzulí, and Rinconada (the former Andes department). Long ago, they went up to San Salvador de Jujuy, to look for maize. Afterwards, they only reached Humahuaca, where they brought *charqui* (dried meat). Caravans came to Alto Sapagua up to 1978 (when María de la Cruz was born) according to Juan. When asked again, he said it was until 1960 or a little later. This kind of problem with time estimation also was recorded for the estimates of vessel use-life and has to do with the relative accuracy of informant estimates (García 1988, Longacre 1983, n.d., Neupert and Longacre, 1994). The caravans came every year, for the harvest time, that is May to August, with donkeys and llamas. They brought *ollas* and weavings. Salt was brought from the Guayatyoc salinas, west of Aguilar. And they exchanged for maize, potatoes and beans from Alto Sapagua. People from the *puna* stayed for a day and exchanged. In May 1980, when surveying Casabindo (*puna*, west from Alto Sapagua), on the road from Abra Pampa to Casabindo, I had the opportunity of seeing one of these Caravans, composed of 15 to 20 donkeys, going in the opposite direction. I asked the local people travelling with me about the origin of the caravan. They said those people were from Tambillos (near Casabindo, to the North), and they were going to Iruya or Santa Victoria. To Iruya, they went through Iturbe, and to Santa Victoria, through Cangrejillos. All of these localities are in the northeast, Santa Victoria being the farthest (*yungas*). This trip took them 10 or 12 days total. They brought salt, meat and donkeys to sell. They exchanged for oca, potatoes, maize and quinoa.

This information is coincident with Karasik (1984:80), in that "in the southern Andes, in general, herders are the ones who 'come down' to exchange

Table 3. Plants used at Alto Sapagua. Through the Living Map, can be placed in Figure 3. Characters which fall SE or SW, off of the map are as follows: V: Down, Tilcara, Huacalera; W: Down anywhere; X: Puna dunes, e.g.: Guayatayoc lagoon edge, Great Salt Mines; Y: Up and down up to Tilcara; Z: Down, stream, beach (within the Puna); A-Z: Anywhere.

Common Name	Scientific Name	Use	Procedure	Parts Employed	Living Map
Achacoria, ancañoque	<i>Hypochoeris meyeriana</i>	Liver, parasites, digestion, blood purification	Infusion or leaves pure juice	Leaves	T
Apio		Stomach			V
Arca		Cold, stomach		Infusion	T
Barba de la Peña	<i>Chenopodium graveolens</i>	Cough			K
Cedrón		Tea			TKY
Chachacoma	<i>Senecio graveolens</i>	Cold, tea or soup	Infusion/soup		KR
Chilchacoma		Cold	Infusion		R
Chichincoma	<i>Mutisia</i> sp.	Lungs	Burnt, incense	Wood	K
Chipchape	<i>Krameria iluca</i>	Red color, backbone (waist), purgitive	Infusion	Red root	
Chococandia	<i>Tetraglochin cristatum</i>	Cough	Infusion	Stem, root	K
Garbanzo	<i>Astragalus garbancillo</i>	Bad weed			
Güira-güira.	<i>Gnaphalium</i>	Cough:			K
Hierba buena		Gives taste to tea/milk	In milk and tea		K
Hinojo		Condenses goat milk	Added to milk (condenses)		T M P V K
Lampaso	<i>Lampaya</i>	Dye vicuña color	Dye vicuña color	Root	X
Llareta	<i>Azorella compacta</i>	Liver, kidney, womb	Resin poultice for lungs	Resin, root, ashes	M K
Menta		Tea	Infusion		V
Muña (muña-muña)	<i>Santureja parvifolia</i>	Cold	Infusión, fumigation	Leaves, stems	M K
Paja vizcachera, campanilla	<i>Stipa</i>	Bad weed			K
Payco	<i>Oxychloe andina</i>	Stomach disorder			K
Puca-puca	<i>Senecio rosarinus</i>	Sweet potatoes, eaten			K
Queñua - queñoa.	<i>Polylepis tomentella</i>	Firewood		Sm. Red potatoes. Stem.	TK
Quinchamal	<i>Baccharis grisebachii</i>	Rheumatism, cuts bone disease	Bath, feet	Wood	K
Rica-rica	<i>Acantholippia hastulata</i>	Tea		Plant	T
Salvia	<i>Salvia Gilliesii</i>	Seasoning, tea, nerves, backbone	Infusion		Y
San José		Kidney	Infusion	Plant	K
Soldaque (Soldake)	<i>Hypocharis tridentata</i>	Potatoes to eat, cough	Kettle for cough	Roots	K
Tola San José	<i>Parastrephia</i> sp.	Purgitive, firewood		Plant	K
Tola guiruto	<i>Baccharis</i> sp.	Forage, firewood		Plant	K
Tola leña	<i>Baccharis incarum</i>	Forage, firewood		Plant	K
Tola vizcacha	<i>Fabiana densa</i>	To dye (yellow) reds, Firewood.		Plant	K



products with their colleagues of lower altitudes ecosystems. This may be related with the llama's transhumance as well as with its load capacity. Even though at present the donkey is more common as a load animal, it is always the herders who come down to the *suni*, the valleys or the *quebradas*. This was confirmed in interviews with colleagues-travellers from Abra Pampa, Rinconada, Ciénaga, Paicone, and with colleagues-hosts from the zone of Yavi (*suni*), Iruya (*queshwa*), Quebrada de Humahuaca (Pueblo Chico-Tilcara) and its tributary *quebradas* (Juella, Huichairas) (*queshwa*)."

What can be said about this practice is that caravans are a very old Andean practice that enhances reciprocity and exchange in Andean culture. It seems that old routes were longer than today's, but the scheme is the same. Certain products were brought from the "Andes" region, where we have the Huaitiquina pass which connects with San Pedro de Atacama, Chile. The caravans crossed the Argentine *puna* region, the *quebrada* and its border, and exchanged products with people living in the Salta region of Yungas (Santa Victoria, north) or Orán (south). They crossed the Great Valley through certain passes like Abra de Zenta or Abra Ciénaga Negra at Santa Ana (what is called the "ramal"). They even reached San Salvador de Jujuy, in the valley region, and crossed all the intermediate environments. So, all the physiographic zones of the province were connected through this practice (Tarragó 1984; Dillehay and Nunez 1988).

Exchange is also a common practice within the micro-region (Alto Sapagua, Inca Cueva, Hornaditas) as illustrated above with ceramics. The Lamas family historical strategy shows the same complementary practice of connecting the *puna* and *yungas* zones, passing through the *quebrada* with marriage alliances.

### Archaeological Use of this Information

I agree with Skibo (1992:16) in that "Ethnoarchaeology should be limited to archaeologists doing ethnographic fieldwork for the purpose of addressing archaeological questions." Also that "The data generated by ethnoarchaeological or experimental research are most applicable to archaeological inference if the investigation is undertaken in both a tightly controlled environment and in situations with more natural conditions (Skibo 1992:28)." My questions were archaeological. I wanted to see how the permanent vs. occasional sites were equipped, used, and what they looked

like. Second, I wanted to observe how people organized their community, and if this was reflected in the use of space and how they managed their material culture. Third, I wanted to see if the behaviors we observe had material correlates, and especially if ceramics were sensitive indicators and which were the best variables to consider for testing archaeological hypotheses.

The study case presented here shows a stable pattern, despite some changes. After 60 years of redundant subsistence and settlement strategy, there have been changes that can be clearly seen. For example, houses show differences in construction (big rocks, mud, bricks, corresponding to different generations). Store rooms and rooms have changed their functions, but under a similar scheme.

The Lamas and Corimayo family show different strategies. The Lamas move. The Corimayo have lands that are worked by other people, or they are godparents of the owners to obtain complementary resources in those environments. They also send some of their children to temporary sites. The Lamas subsistence basis is herding. The Corimayo's is agriculture. Both economic activities are present for the two families, but their importance is proportionally inverse. Historically, they come from different places. The Lamas, from the *puna*, to the west. The Corimayo from Rodero, to the east. And they have made regular marriage alliances along five generations. The basic residence of each family, makes the difference.

The intra-site space study shows that kitchens alone are not enough to have a site function comprehension, because some vessels are kept in the store room or even in the rest room. This observation is coincident with Yacobaccio and Madero's conclusions for Susques (1994). Nevertheless, less permanent sites' kitchens show more non-local materials in relation with more permanent sites where inversely, there are proportionally more local material items.

The first archaeological consequence of my own investigation is that Azul Pampa's "micro-region" as a spatial analytical unit (Aschero 1988:223) is useful only partially to understand the Inca Cueva Formative occupations. Another idea we can take from this case study is that semi-permanent sites in caves and rock shelters may have been part of a local annual rotation scheme according to grazing needs and, as well, to be a stop in a caravan route exchanging resources between west and east. Also, the strategies to deal with such a harsh environment may be varied, within a historical continuity

that has proved to be useful. Marriage alliances, art and religion can be thought of as contributing also to solve basic survival needs. Modelling for the Formative will have to take in consideration all of these aspects, even though some of them may not have a material correlate, as well as the variables defined as relevant to look for the most permanent sites from an archaeological point of view.

Variability involves site rotation. Territories vary for each nuclear family but they link the same different environments in all of them. This considers the extended family as well as neighbors, part of which do not "come down" and only raise cattle, but exchange products with agriculturalists. This is how this territory is completely colonized. Graham (1994:75) has mentioned for mobile farmers that "residential mobility, intensification of agriculture, population density, climate and topography are all factors influencing residential site structure". At Azul Pampa, sites are placed within the system in relation to their altitude above sea level and available resources, which includes microclimate. This conditions the degree of permanence in each one of them, and the number of occupants. Foreseen reoccupation of sites is reflected in material items left. But, certain rooms of dead persons are left as they were when they lived. These, and other observations, such as the rotation of room functions, as well as provisional discard, are useful data regarding site formation processes. Higher activity areas in general show less discard, and special activities like ceramics manufacture do not leave clear traces.

Ceramics, especially their form, seem to be good indicators to contribute to determine site's function. Emic classification of ceramics can be used to refine archaeological interpretations of micro-stylistic ceramic analysis (Hardin 1979:75-101), stressing the importance of ceramic function as well as the decisions taken during manufacture. As regards artisan interaction, variability at Alto Sapagua's incisions of handles also seem to be an Andean identification system (Donnan 1971 in Ravines 1978:444). Effective interpretation of this variability structure requires a detailed knowledge of information organization by artisans regarding design.

Ceramics show a combination of expedient technology for daily needs and exchange at the micro-regional level, and exchange with upper puna herders on a regular basis of painted, more elaborated vessels, used at fiestas. Therefore, the idea of reinforcing the group's identity through decoration before other people does not apply in this case

(De Boer and Moore 1982:152). It also differs from the Sirak Bulafay case studied by Sterner (1989:451-9) in which decoration is most elaborated when least visible in the context of primary use. At Azul Pampa, incisions in the handles (the only decoration of local vessels) make every member of community remember which relative or neighbor manufactured and exchanged it within the micro-region. Many years later (12 or more), they can identify the ceramist. Painted decoration of *virques*, instead, which are used in fiestas, has no meaning to them, because they have been exchanged with upper puna caravaneros. Daily needs *ollas* can inform better on micro-regional system moves than big, elaborated ones that come from far away distances and can be found elsewhere. The use of local raw materials in the manufacture of ceramics is a sensitive way to discriminate which of the archaeological features recovered are the most appropriated to link the functionally complementary sites within the micro-region at initial Formative times. These are some of the contributions ethnoarchaeology can give to a better understanding of the archaeological record.

### References Cited

- Albeck, M. E. and M. C. Scattolín  
 1991 Cálculo Fotogramétrico de Superficies de Cultivo en Coctaca y Rodero, Quebrada de Humahuaca. *Avances en Arqueología* 1:43-58. Instituto Interdisciplinario Tilcara. Facultad de Filosofía y Letras. Universidad de Buenos Aires.
- Aschero, C.  
 1988 De Punta a Punta: Producción, Mantenimiento y Diseño de Puntas de Proyectoil Prececerámicas de la Puna Argentina. *Precirculados de las ponencias científicas presentadas a los Simposios del IX Congreso Nacional de Arqueología Argentina*: 219-229. Universidad de Buenos Aires. Facultad de Filosofía y Letras. Instituto de Ciencias Antropológicas.
- Cabrera, A. L.  
 1976 Regiones Fitogeográficas Argentinas. *Enciclopedia Argentina de Agricultura y Jardinería* II (1):1-85. Ed. Acme, Buenos Aires.
- Cipoletti, M. S.  
 1975 Relevamiento Mitográfico (Quebrada de Humahuaca) *Jujuy Cultural* II:13-15. San Salvador de Jujuy.

- De Boer, W. and J. A. Moore.  
 1982 The Measurement and Meaning of Stylistic Diversity. *Nawpa Pacha* 20:147-162. Institute of Andean Studies, Berkeley, California.
- Deal, M.  
 1985 Household Pottery Disposal in the Maya Highlands: An Ethnoarchaeological Interpretation. *Journal of Anthropological Archaeology* 4:243-291.
- Dillehay, T., and L. Nunez  
 1988 Camelids, Caravans and Complex Societies in the South Central Andes. In *recent Studies in Precolumbian Archaeology*, edited by N. Saunders and O. De Montmollin, BAR International Series 421, Oxford.
- Donnan, C. B.  
 1971 Antiguas Marcas de Alfarero y su Interpretación a través de la Analogía Etnográfica [Reprint of Ancient Peruvian potters marks and their interpretation through ethnographic analogy. *American Antiquity* 36 (4):460-466] In R. Ravines (Compilador) 1978 *Tecnología Andina*. Chapter 5, pp. 439-446. Instituto de Estudios Peruanos. Instituto de Investigación Tecnológica Industrial y de Normas Técnicas. Lima, Perú.
- García, L. C.  
 1988 Etnoarqueología: Manufactura de Cerámica en Alto Sapagua. In *Arqueología Contemporánea Argentina. Actualidad y Perspectivas*, edited by H. D. Yacobaccio, pp.33-58. Ediciones Búsqueda, Buenos Aires.  
 1988/9 Las Ocupaciones Cerámicas Tempranas en Cuevas y Aleros en la Puna de Jujuy, Argentina - Inca Cueva, Alero 1. *Paleo-etnológica* 5:179-190, C.A.E.A., Buenos Aires.  
 1991 Etnoarqueología de Pastores Andinos: Un Aporte hacia la Visualización e Interpretación de Sitios Arqueológicos. *Shincal* 3. Vol. 1:205-218c. National University of Catamarca. School of Archaeology. Argentina.  
 1993a Experimentación en Inca Cueva: Arcillas, Fogones y combustibles. *Arqueología* 3:69-91. Revista de la Sección Prehistoria. Instituto de Ciencias Antropológicas. Facultad de Filosofía y Letras. Universidad de Buenos Aires.
- 1993b Qué Nos Cuentan las Cocinas? *Palimpsesto*. Revista de Arqueología 3:133-138. Buenos Aires.
- 1994 Estudios Actualísticos en el Noroeste Argentino: sus Aportes a una Investigación en Curso. Actas y Memorias (Primera Parte) XI Congreso Nacional de Arqueología Argentina (Resúmenes y Resúmenes expandidos). Simposio: Metodología y Ciencia en Arqueología. *Revista del Museo de Historia Natural de San Rafael (Mendoza)* T. XIII (1/4):14.
- 1995 Lime and Blood: The Art of the Elders (Ethnoarcheology at Azul Pampa, Jujuy, Argentina) Paper presented at the News95, International Rock Art Congress, Torino.
- Graham, M.  
 1994 *Mobile Farmers. An Ethnoarchaeological Approach to Settlement Organization among the Rarámuri of Northwestern Mexico*. International Monographs in Prehistory. Ethnoarchaeological Series 3. Ann Arbor.
- Hardin, M. A.  
 1979 The Cognitive Basis of Productivity in a Decorative Art Style: Implications of an Ethnographic Study for Archaeologists' Taxonomies. In: *Ethnoarchaeology*, edited by C. Kramer, pp. 75-101. Columbia University Press, New York.
- Karasik, G.  
 1984 Intercambio Tradicional en la Puna Jujefia. *Runa. Archivo para las Ciencias del Hombre* XIV:51-91. Facultad de Filosofía y Letras. U.B.A. Bs. As.
- Kuznar, L. A.  
 1995 *Awatimarka: The Ethnoarchaeology of an Andean Herding Community*, Case Studies in Archaeology. Harcourt Brace & Company. Orlando, Florida.
- Lavalée, D. and M. Julien  
 1983 *Asio: Curacazgo Prehispánico de los Andes Centrales*. Instituto de Estudios Peruanos. Lima.
- Longacre, W. A.  
 1983 Pottery Use-life among the Kalinga, Northern Luzon, The Philippines. m.s.
- Lupo, L.  
 1993 Informe Palinológico Inca Cueva-4. Ms. in possession of C. Aschero, director of Archaic to Formative. CONICET Investigation and Development Project. Buenos Aires.

- Mariscotti de Görlitz.  
1978 Pachamama Santa Tierra. Contribución al estudio de la religión autóctona en los Andes centro-meridionales. *Indiana* 8, Berlín.
- Markgraf, V.  
1985 Paleoenvironmental History of the Last 10,000 years in Northwestern Argentina. *Zbl. Geol. Paläont.* T. I, 1984 (11/12):1739-1749. Stuttgart.
- Neupert, M. A., and W. A. Longacre  
1994 Informant Accuracy in Pottery Use-life Studies: A Kalinga Example. In *Kalinga Ethnoarchaeology: Expanding Archaeological Method and Theory*, edited by W. A. Longacre and J. A. Skibo, pp. 71-82. Smithsonian Institution. Washington, D.C.
- Rafferty, J.  
1985 The Archaeological Record of Seden-tariness: Recognition, developments and implications. In *Advances in Archaeological Method and Theory*, 8: 113-156.
- Rice, P. M.  
1987 *Pottery Analysis. A Sourcebook*. The University of Chicago Press. Chicago & London.
- Ruthsatz, B. and C. P. Movia  
1975 *Relevamiento de las Estepas Andinas del Noroeste de la Provincia de Jujuy*. Fundación para la Educación, la Ciencia y la Cultura, Buenos Aires.
- Skibo, J. M.  
1992 *Pottery function: A Use-alteration Perspective*. Plenum Press, New York.
- Sterner, J.  
1989 Who is Signalling Whom? Ceramic Style, Ethnicity and Taphonomy among the Sirak Bulahay. *Antiquity* 63:451-9.
- Tarragó, M. N.  
1984 La Historia de los Pueblos Circum-puneños en Relación con el Altiplano y los Andes Meridionales. *Estudios Atacamenos* 7.
- Yacobaccio, H. D. and C. M. Madero  
1994 Etnoarqueología de Pastores Suran-dinos: Una Herramienta para Conocer el Registro Arqueológico. *Jornadas de Arqueología e interdisciplinas*:203-235. C.O.N.I.C.E.T. - PREP. Buenos Aires.