Environmental Paradoxes: Perceptions of the Environment in the Argentinian Southern Chaco

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Introduction: Transforming Perceptions

When walking through the semiarid plains of northwest Córdoba (Argentina), the southern part of an extensive dry forest known as Gran Chaco, it may appear that we are setting foot in a pristine environment,1 one almost untouched by the swift transformations of the new epoch known as the Anthropocene (Edgeworth et al. 2014; González-Ruibal 2019; Olivier 2019, Witmore 2019) – a term I use here to emphasize contemporary ecological and social transformations and the asymmetrical relations between indigenous/peasants and colonizers/capitalists that are part of this process (Costa et al. 2021). However, this feeling only holds for outsiders accustomed to a super-modern landscape of cities, cattle grazing areas and soybean monoculture, which today comprises approximately 70% of the province of Córdoba (Cabido et al. 2018).

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1. Regional archaeological data, show ten thousand years of human environmental entanglements (e.g. Recalde and Pastor 2011; Costa and Barri 2018, among many others).
In recent years, soybean cultivation has been the main cause of deforestation in the north of Córdoba, driven by an intensification of socioeconomic, climate and technological transformations that began in the last decades of the twentieth century (Zak et al. 2008; Hoyos et al. 2013; de la Casa and Ovando 2014; Zilio et al. 2020). These changes include land tenure changes and a shift from local subsistence economies to a commercial economy, significant increases in rainfall in the northeastern plains and the innovation of “Roundup Ready” no-till soybean seeds (Zak et al. 2008).

Nevertheless, the drylands of northwest Córdoba, in contrast to the northeast, are still relatively well preserved in terms of biodiversity (Costa and Barri 2018; Manzano-García 2019; Torres et al. 2019), probably because the area is not yet profitable within this new cycle of capitalist exploitation (Hoyos et al. 2013; Cabido et al. 2018). Further, the recent creation of the Provincial Archaeological Reserve of Guasapampa (PARG) and Traslasierra National Park should help with conservation in the area (Costa et al. 2021); but even so, it will be necessary to dissolve boundaries of natural and cultural heritage if these areas are to achieve a more inclusive socio-environmental conservation (Harrison 2015; Harrison et al. 2020).

This apparently rough and arid landscape has long been conceived as a place of possibilities by the area’s indigenous inhabitants. In fact, the word chaco is a variation of the Quechua expression chacu and seems to be associated with hunting practices.
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(Paz Esquerre 2016, 216; see also de Gandía 1929). In particular, the eighteenth-century Jesuit historian Pedro Lozano, in his history of the Spanish conquest of southern South America published over a hundred years after his death (Lozano 1878, 284), linked the name’s origin to the communal hunting of vicuñas, stating that “they would very often go in such hunts through the slopes of the hills that fall into Tucumán” and for this reason the region was called Chaco (for similar accounts see also Granada et al. 1890, 174–177; de Gandía 1929, 7–12). Additionally, Paz Esquerre (2016) relates the word to a hunting territory, a place where game is abundant. Abundant or not, this hunting environment is depicted in many of the rock art sites located in the PARG, where endemic species that were and still are pursued by human dwellers (who today identify as peasants [campesinos]) are depicted (Recalde and Pastor 2011; Costa et al. 2021).

However, since European colonization the general perception of this environment has undergone a gradual transformation in accordance with the expectations of capitalism during the “age of exploitation” (Graeber 2011). The words of Jerónimo Luis de Cabrera (1573, in Montes and Freytag 2008, 47, translated), the founder of the city of Córdoba, are a good example of how the first European colonizers perceived the region, as “good land for raising cattle in numbers as large as are raised in Spain, and for building mills and haciendas where those who live there can be prosperous”. A similar perspective also influenced many other colonizer projects, such as that of the Mennonites in the

FIGURE 2. Guasapampa mountain chains (PARG) seen from a cattle plot. European cattle (mostly caprine but also bovine) are raised in large fields with scarce water reservoirs.
Paraguayan Chaco in the early twentieth century (Breithoff 2020, 58): they saw the land as somewhere to be “civilized”. Such colonial efforts in transforming the landscape into a manageable domesticated environment changed the way of life and the diversity and distribution of plants and animals (Periago et al. 2017; Manzano-García et al. 2019; Breithoff 2020). European cattle breeding, apart from causing the deterioration of forests (and reducing biodiversity) has transformed the ways people perceive many local animal species, especially big predators such as the cougar (Puma concolor) or herbivores such as guanacos (Lama guanicoe) that are believed to compete for fodder. Already at the turn of the twentieth century, Manuel E. Río and Luis Achával noted in the second volume of their Geografía de la Provincia de Córdoba that many species were on the verge of disappearing due to hunting as a leisure pursuit or to protect cattle and crops (Río and Achával 1905, 339–340), and the fragmentation of the environment through capitalist overexploitation since then has expanded dramatically (Cabido et al. 2018).

Dwellers and the Environment

As an archaeologist concerned with human–environmental relations, I have always been interested in understanding the way dwellers in a landscape relate to their built environment (Ingold 2000), and how they deal with the swift transformations of the world today (for similar approaches, see Tola et al. 2019; Breithoff 2020). The current study area
encompasses people whose way of life is deeply entangled with an environment that is now protected by provincial and national laws, and that includes properties obtained by local peasants through active struggle during the first decade of the current century as well as buildings purchased by outsiders for cattle ranching. The aforementioned PARG and Traslasierra National Park now define the eastern and southern limits of the study area (see Costa et al. 2021).

This context gives rise to tensions. For example, it is a common practice among local inhabitants to tame wild animals (birds and mammals) and to keep them as pets. However, this is discouraged by state agencies, especially the environmental police; in particular, residents of the village of El Chacho have complained about state agents capturing such

FIGURE 4. A hunted boar (*Sus scrofa*). The animal was hunted with the aid of dogs and divided in half. Each hunter kept one half and the dogs received the organs.
FIGURE 5. Faunal cemetery. Many species were hunted and discarded on the orders of field owners, as they believed the herbivores were competing with livestock for fodder. Conversely carnivores are considered a plague by dwellers since they prey on caprine livestock.

FIGURE 6. Guanaco (*Lama guanicoe*) jumping a wire fence. Fences are a great challenge for calves – many get trapped in the wires and end up dying.
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FIGURE 7. A tamed peccary (*Tayassu pecari*), an animal esteemed as a pet. The owners and other neighbors have had many altercations with local police when deprived of pets.

FIGURE 8. Tamed guanaco (*Lama guanicoe*). The female ungulate has been raised by the previous owners of the field and bought with the property by the current landowner.
pets and releasing them elsewhere (Manzano-Gracia et al. 2019, 36). There is a deep-rooted affection towards local species (Manzano-Garcia et al. 2019; Costa et al. 2021).

Environmental entanglements are also reflected in the importance of local plants and animal parts in the treatment of illnesses (Manzano-Garcia 2019) – an example of ongoing engagement with the local environment by way of continued practice and cultural reproduction (Ingold 2011). This practice demonstrates a way of relational learning with roots in the ancient past, but it has also been reinforced by subsistence activities that locals have performed during the contemporary past.

Human–environment relations in the Argentinian Gran Chaco from the end of the nineteenth century have also involved many locals working as loggers (hacheros), with quality hardwood (mainly quebracho colorado, Schinopsis lorentzi) needed for railway sleepers and for the creation of charcoal for fuel (Bilbao 1964; Natenzon and Olivera 1994; Bestelmeyer 2014).2 “Development” required the further intensification of this overexploitation of human and forestry resources in the 1980s and 1990s, including charcoal to fuel the ovens of the local mining companies. Logging activity demanded workers stay for long periods in the forest, in campsites known as obrajes (labors). Life in the obrajes began when the workers were assigned parcels of the forest (lucha) where they would establish their shelter and work in the production of timber. The shelters generally consisted of four Y-shaped pillars with two sills (soleras) that rested on top of these, to which were added thinner wood (varas) that formed the base of the roof. The top was completed with the addition of branches and dry earth as thermal insulation for the high solar radiation (Bilbao 1964).

Although some companies provided a ration (flour and some meat), subsistence hunting was a necessity for workers in many areas of the southern Chaco (Bilbao 1964; di Lullo 1999; Manzano-Garcia et al. 2019). Loggers usually hunted small animals such as lizards and armadillos; however, at least in Córdoba, guanacos could also be on the menu (di Lullo 1999; Costa et al. 2021). As expressed by one of our interviewees, “guanacos were hunted, at that time it was allowed. We used to hunt foxes, boas and skunks”.3 Furthermore, even if these animals were mainly hunted for food, their body parts (fat, fur or limbs, depending on the species) could also be used as medicine, or exchanged or lent between neighbors, a practice still current today (Manzano-Garcia 2019; Manzano-Garcia et al. 2019; Costa et al. 2021).

Another interviewee who used to work in an obraje remembered the period as “a time when the area was full of people and youths would leave school to work as hacheros”.4 However, nowadays the area is mainly used for cattle raising and people are scarce in the fields. As the same interviewee stated, “the youngsters are leaving” and the area is

3. P.M.P., Piedrita Blanca, 12 November, 2019. The “permission” to hunt guanacos probably refers to the landowners or contractors of the obrajes, since at that time there was no control over hunting, which is still incipient today. On the other hand, big game hunting was an exception, since it was easier and especially cheaper to search for armadillos or lizards than to spend bullets on guanacos.
4. S.A.T., Piedrita Blanca, 12 November, 2019. There are a couple of rural schools in the area and others in nearby towns. Although the interviewee recognizes the need for schooling, the lack of opportunities for young people in the area is a concern to this local dweller.
FIGURE 9. Ñandú (*Rhea americana*) in a home backyard. Many tame animals are returned to the forest when they reach adulthood and begin to demand more space or become aggressive.

FIGURE 10. Guanaco (*Lama guanicoe*) wool used in local medicine as treatment for hearing impairments (see Manzano-García 2019).
FIGURE 11. Soap (used in dermic infections) and cream (for musculoskeletal disorders) made by a student of the rural school. Students were learning different ways to process and use local plants (Manzano-Garcia 2019).

FIGURE 12. Decayed logger hut, used during the timber exploitation period.
FIGURE 13. Armadillos being cooked in a farm cottage.

FIGURE 14. Armadillo oven. Some dwellers use this kind of handmade tin oven to cook a hunted armadillo while working in the field.
FIGURE 15. A hunter wayfaring for meat. This person has worked as a logger since he was an 11-year-old child.

FIGURE 16. A sling, commonly used by children and adults in Chaco for hunting small birds and mammals.
now “abandoned”. Capitalist pressures, particularly on younger locals, are transforming the environmental entanglements. In this way, inhabitants’ perceptions surrounding their environment are changing as a consequence of social, economic and ecological transformations that began in the recent past and are continuing in the present (Costa et al. 2021).

A good example of the pressures on locals is the story of two landlords (from Buenos Aires) who demanded the extermination of donkeys and guanacos that inhabited their fields, because they believed the ungulates would compete for pasture with the introduced cattle. As an ex-employee stated, “the bosses wanted to get rid of all the donkeys and the guanacos because they ate the pasture, and J. had hunted them a lot, but there were a lot of them back then”. Local peasants struggle to keep up with changes whereas newcomers, mainly interested in developing tourism in the area, tend to blame them for local biodiversity loss.

But who is really to blame?

**Final remarks**

Throughout this essay, I have tried to demonstrate that the apparent pristine flatlands in southern arid Chaco have been, and still are, a place of unfolding human livelihoods and ways of life. In our supermodern Anthropocenic epoch, the traditional ways of inhabiting this area are being subjected to radical transformations (as in other areas of the Gran Chaco – Blaser 2010; Gordillo 2014; Breithoff 2020; Montani 2021). Consequently, local dwellers are striving to maintain their ways of engaging with the surrounding environment against the pressures imposed by the cycles of production and ruination which started with the age of exploitation (sensu Graeber 2011) and which have dramatically increased in the last four decades (Zak et al. 2008; Cabido et al. 2018).

The recent creation of provincial and national reserves should help biodiversity conservation, but it is unclear how it is going to impact the ways that people inhabit the area. Despite the fact that protected areas in Argentina stipulate conservation in socio-environmental terms, biocultural conservation is often treated as a dichotomy rather than a holistic management program (Harrison 2015; Manzano-García 2019). Biodiversity protection must not depend on human absence, since traditional land use is always transforming and novel possibilities of engagement with the environment should occur (Lunn-Rockliffe 2019).

In order to achieve conservation, a local socio-environmental balance is needed, and achieving this will not be an easy task. Therefore, collaborative (inhabitants, researchers and government managers) and multidisciplinary work must be a priority for biocultural conservation in the area.

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5. “Los patrones querían deshacerse de todo lo que era el burro y el guanaco porque le comían el pasto y J. les había cazado mucho, pero eran mucho en aquel entonces” (B.Z., Milagro, 11 November, 2019).
FIGURE 17. A ruined traditional cottage. Many lands in the region are now abandoned.

FIGURE 18. The interior of the ruined cottage. Materials of daily living are left in ruination.
FIGURE 19. Perforators handmade by a local artisan (now deceased). These instruments represent how people recycle and intermingle industrial products with local materials (in this example, a cervid [Mazama guazoubira] antler).

FIGURE 20. The interior of a local home. Living and dead animals are both a part of local households.
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References


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