Anuário Antropológico
v.50 | 2025

Technical processes and built environments variations among the Kaiowa of Mato Grosso do Sul (Brazil)

Processos técnicos e variações de ambientes construídos entre os Kaiowa de Mato Grosso do Sul (Brasil)

Fabio Mura

Edição electrônica
URL: http://journals.openedition.org/aa/15096
DOI: 10.4000/1552p
ISSN: 2357-738X

Editora
Programa de Pós-Graduação em Antropologia Social (UnB)

Referência eletrônica
Fabio Mura (Tradução: Pedro Tiberio Mura), «Technical processes and built environments variations among the Kaiowa of Mato Grosso do Sul (Brazil)», *Anuário Antropológico* [Online], v.50 | 2025, e-1552p. URL: http://journals.openedition.org/aa/15096 ; DOI: https://doi.org/10.4000/1552p

anuário antropológico
v.50 • e-1552p • 2025

Technical processes and built environments variations among the Kaiowa of Mato Grosso do Sul (Brazil)

Processos técnicos e variações de ambientes construídos entre os Kaiowa de Mato Grosso do Sul (Brasil)

DOI: https://doi.org/10.4000/1552p

Fabio Mura
Federal University of Paraíba, Human Sciences Department, Rio Tinto, Paraíba, Brazil
ORCID: 0000-0003-2840-6355

In this work, we seek to describe and analyse the processes that led to the transformation of the built environments among the Kaiowa from Mato Grosso do Sul over the course of a century and a half. For such a scope, instead of looking at such transformations as the result of acculturation or a mere change of aesthetic, we'll focus mainly on technical relations that show how the experiences of the indigenous people with new materials and architectural structures have favoured a flexibilization of the domestic organization and ecology, turning the territorial mobility more capillary and making the production of an ample variation of shapes and residential structures.

Technical processes; Built Environments; Household Ecology; Kaiowa Indigenous

No presente trabalho busca-se descrever e analisar os processos que levaram à transformação dos ambientes construídos (*built environments*) entre os Kaiowa de Mato Grosso do Sul ao longo do último século e meio. Para tal escopo, em lugar de ver tais transformações como resultado de aculturação ou de uma mera mudança estética, enfocando aqui principalmente relações técnicas, mostrar-se-á como as experiências das pessoas indígenas com novos materiais e estruturas arquitetônicas têm favorecido uma flexibilização da organização e da ecologia domésticas, tornando a mobilidade territorial mais capilar e possibilitando a produção de uma ampla variação de formas e estruturas habitacionais.

Processos técnicos; Ambientes construídos; Ecologia doméstica; Indígenas Kaiowa

Introduction

As Jesuit sources from the beginning of the 17th century point out (M.C.A. 1951; 1952), the Guarani-speaking peoples used to live in large buildings, that could accommodate up to a few hundred people[1]. Among the Kaiowa, specifically, such buildings, called *oygusu* (large house, see Figure 1), though smaller in size and housing only a few dozen individuals, continued to be built for housing purposes until the first half of the 20th century (Thomaz de Almeida 2001), becoming quite rare and, even when built, having different functions in relation to their past use, becoming prayer houses (see Figures 2 and 3), as we will see later.

As pointed out by Schaden (1974), based on the acculturation paradigm, such progressive abandon of the old communal dwellings would be fundamentally due to a process of individualization in these indigenous people's economic lives. Such fact would result in the fragmentation of extended families and, consequently, in the adoption of smaller dwellings by conjugal families, with these becoming the units of production and consumption.

Schaden's argument was contested by Thomaz de Almeida (2001), who considers it the result of an unwary observation of the Kaiowa spatial and household organization. According to the latter author, the large huts already had inner partitions, separating conjugal families, with said families gathering around the domestic fires where they carry out their culinary activities. Therefore, the abandonment of the communal dwelling wouldn't be related to a process of individualization and autonomization of the conjugal families, since nowadays, although they are distributed across several dwellings, these fires remain related to each other, similarly to what used to happen in the past, following criteria for social organization and economic, social and affective cooperation. Therefore, according to Thomaz de Almeida, the reasons for the transformations in housing construction should be sought elsewhere, i.e., in the changes in the ecological conditions where these indigenous peoples live, considering that there has been deforestation in theses territories since the 1960s due to the impact of the mechanization of agriculture on the farms established there — by dominant social segments, not indigenous peoples. Thus, according to the author, the raw material consisting of wood of a certain size and thatch, which grows in natural fields, becoming increasingly scarce, would have led these indigenous peoples to choose other types of housing solution, with such changes in the shapes and sizes of the buildings being considered by the author as merely aesthetic.

I agree with Thomaz de Almeida's critique of Schaden, when it comes to an unwary vision of the Kaiowa household and territorial organization. However, I do not think that the transformations in housing typologies can be attributed solely to ecological and aesthetic factors. In fact, it must be noted that if one were to add up all the timber and thatch used to construct all the buildings built by members of an extended family who previously lived under a single roof, the materials required would certainly be greater in quantity than those gathered to build a single *oygusu*. Furthermore, it can be said that in the 1950s, when Schaden was writing, there

1 Regarding the accentuation rules for Guarani words, I will follow the nomenclature most commonly used in Paraguay, as explained in Melià et al. (1997, 8), not using the graphic accent on oxytone words, which are the majority in this indigenous language. The occurrence of the apostrophe indicates a glottal stop.

were still significant forests in the region, while communal dwellings were already becoming scarce. On the other hand, in the choices for the shape and construction details, the aesthetic aspect is also something that cannot be limited to factors of pure taste. The variations in shapes that characterize the Kaiowa's buildings, as we will see, result from specific technical choices of association of diverse materials, which Leroi-Gourhan, named a "functional aesthetic" (2002b). These choices, in turn, depend on the household ecology and the territorial dynamic that result from them. This ecology has in fact transformed over time, since the period of European conquest, with this *not* meaning the adoption of an individualistic logic, as assumed by Schaden. In this article, I will seek to show precisely what the characteristics of these transformations were and what consequences they had for the construction dynamics of the Kaiowa dwelling units, observing them mainly through ample focus on technique, since technique "refers — in various dimensions, formats and scales — to movement, change or alteration, even if it is to reinforce, reproduce or maintain certain patterns of relationships" (Sautchuk 2017, 12).

For this purpose, I divide the argument here into three items. In the first, of a historical nature, I deal with technical transformations over time (centering attention mainly on the 19th and 20th centuries). Seeking to illustrate the most important aspects of the changes in household ecology, territorial dynamics, habitational choices and flows of materials. In the second, which is specifically ethnographic, I illustrate the dynamics of construction of dwelling units among today's Kaiowa, taking into account not only technical and ecological factors, but also those of social and cosmological organization, highlighting a hierarchy of indigenous values, skills and strategies aimed at conditioning and channeling flows of materials that allow, among other possibilities, to shape their built environments. In the third and last item, with the presented ethnographic material, I develop a final reflection on technical processes and built environments.

Let us therefore move on to the description and analysis.

Spatial organization, territorial dynamics and household ecology among the Kaiowa: Historical processes and technical transformations

The Kaiowa are descendants of a people of Guarani speakers who were named by European colonizers as "Itatím", who were "discovered" by Irala in 1553 (see Melià *et al*. 1976, 217). The current location of this group is the Brazilian state of Mato Grosso do Sul and the eastern regions of Paraguay, where they are known as Paĩ-Tavyterã[2] (Melià *et al*. 1976; Thomaz de Almeida 1991; Gadelha 1980; Mura 2019).

The territorial organization among the old Guarani, as indicated by literature on the subject, mainly followed river basins, forming regions known as *guára,* allowing, therefore, one to speak of indigenous persons from a certain river. Inside these basins, on the banks and headwaters of the rivers and tributaries that form them, local groups defined by Susnik (1979-80) as *te'yi-óga* were formed. *Te'yi* is

2 This expression corresponds to a self-designation that means "inhabitants of the town at the center of the earth".

a term that refers to an extended family, while *óga* (*óy*, among the Kaiowa) refers to the hut where said family group, in its entirety, found shelter. According to the author, the parenthood relations were determined inside the *guára*, where warrior alliances were also established, and local political units could be formed with the articulation of some of these huts, giving life to what the indigenous now refer to as *tekoha* (that is, "the place where we realize our way of being and living") (Melià *et al.* 1976; Thomaz de Almeida 2001; Mura 2019). To define these alliances and carry out their everyday activities, the *te'yi-óga* placed itself as an axis of the indigenous mobility, allowing for the access and exploration of the environments that formed their territories. The activities carried out within it allowed the production of the instruments necessary for such tasks, while agriculture was carried out based on differentiated access to private plots by the different conjugal families, which, in turn, on a larger scale, through collective cooperation, created the conditions for agricultural production fundamentally centered on the cultivation of white corn (*avati moroti*), thus allowing for the rituals of consecration of this cereal and of the fresh plants to take place. This established the annual calendar and, with greater frequency, the performance of male initiation, the *kunumi pepy* (Melià *et al.* 1976; Chamorro 1995).

With the European conquest, many indigenous people were taken to Jesuit "reductions", others were captured to be used as labor, or even killed in attacks by the *bandeirantes* (explorers from São Paulo who ventured the interior of Brazil in search of gold, precious stones and the capture of indigenous people), as well as by epidemics. Others managed to stay relatively autonomous, in the forest. In the specific case of the indigenous people of Itatim, after the *bandeirantes* destroyed the Jesuit missions established in their territories (then located in Serra da Bodoquena, in the Center-West of Brazil), those who managed to escape enslavement and the *Mbayá-Guaikuru* persecution, migrated southward, settling in the forests of the southern cone of the current state of Mato Grosso do Sul and in eastern Paraguay (Melià *et al.* 1976; Gadelha 1980), as mentioned. In these spaces, although with a very reduced demographic, they managed to continue their own territorial and domestic organization, with their homes probably being smaller in size, coexisting, at least in most cases, with the large huts meant for communal use. It so happened that in the second half of the 19th century, after just over two centuries of relative autonomy and with intermittent interethnic contact with non-indigenous people, the local scenario began to change, rapidly and significantly. After the so-called War of the Triple Alliance (1865-70), two large yerba mate extraction companies settled in the region occupied by the indigenous people, building infrastructures such as ports, rural commerce, highways and even railways. On the Brazilian side of the border, the Matte Larangeiras Company, until the 1920s, came to have more than 5 million hectares of land that it explored, using mainly indigenous labor for its projects (specifically, that of the Kaiowa and their neighbors, the Guarani-Ñandéva) (Thomaz de Almeida 1991; Brand 1997).

It should be noted that the yerba mate period was not yet characterized by the systematic occupation of the region by neocolonial fronts, with the exploitation

of the herb being based on state concessions and not on the formation of private properties. This occupation occurred gradually, first with the installation of cattle farms and later, with significant deforestation, between the 1960s and 1970s, with extensive mechanized agriculture (first soybeans and then also sugarcane). In the region, cities also began to develop, with notable characteristics of providing support to rural production. In this process of systematic occupation of their territories, at first the majority of indigenous households managed to remain hidden in the forests and work periodically on the farms that were being formed. But later, with the intense deforestation, they were progressively expelled from their places and taken to tiny reserves, which between 1915 and 1928 had been created in the region by the then Indian Protection Service (SPI).

As a reaction to this process, from the 1970s onwards, first in Paraguay and then in Brazil, indigenous people began a struggle to regain possession of their territories, a struggle that continues to this day (Barbosa da Silva and Mura 2018; Mura 2019).

The implications of the changes that have occurred in the last century and a half for the household organization of the Kaiowa, as well as their ecology, were very significant. Firstly, there is progressive and increasingly constant access by indigenous people to goods and materials that were previously rare. The occasional labor known as *changa* (Melià *et al*. 1976; Thomaz de Almeida 1991, 2001; Mura 2019; Mura and Barbosa da Silva 2019), carried out first in the yerba mate plantations and then in the farms and, more recently, the resources derived from the activities of indigenous affairs agencies, salaried positions and state benefits, have allowed for a progressive increase in the amount of goods circulating within households, with indigenous people gaining experience with industrial fabrics, salt, metal, glass, plastic, cement, and, today, electronics (Mura 2019). Until the 1970s, metal bars for the manufacturing of multipurpose cutting blades were very sought after, entering the main trading circuits, since these instruments allowed for more efficient manufacturing of artifacts with wood and vegetable fibers. Blades made of chipped or polished flint were quickly abandoned in favor of metal tools (Mura 2019). In cooking and water transport, ceramic containers were also left behind, though more gradually, being replaced by those made of metal and, later, glass or plastic, with different volumetric capacities. The *cambuchi*, ceramic container used for the fermentation of the *kaguî*, was abandoned, with a preference to maintain for this purpose the use of the *ygáry* — a container made of cedar wood, created by cutting and digging into a log, seeking to create one single piece in the shape of a canoe, which becomes easier to do with the introduction of a metal axe. Nowadays, PVC drums and glass vials are also used (Mura 2019).

With this process, the lithic and ceramic industries were not replaced by analogous *technical groups* (Leroi-Gourhan 1971) that would allow the production of the new materials in circulation. Therefore, for example, iron metallurgy was not introduced into domestic life. Thus, the access to new materials implied a significant transformation in the technical organization of the Kaiowa, with them progressively preferring acquisition techniques to the detriment of production

ones, intensifying and refining what they call *jeheka* ("searching for"), in which the *changa* is included (Barbosa da Silva and Mura 2018; Mura and Barbosa da Silva 2019).

To give life to this specific dynamic of the *jeheka*, the Kaiowa have also transformed the mobility of their members, in the sense that they intensified and diversified the movement of conjugal families throughout the territory covered by the activities carried out by all the households composed of extended families. In this way, choosing to use smaller buildings compared to the large communal dwelling, but initially in parallel and in conjunction with them, the indigenous people began to adopt temporary shelters, called "*ramadas*", to house nuclear families during their periodic ventures, first in the yerba mate plantations and later in the farms (Thomaz de Almeida 1991; Mura 2019). However, they also began implementing houses that differentiate the ceiling from the walls, like houses of European origin[3].

This dynamic thus implied a progressive transformation in the way extended families organized themselves in space, while maintaining the logic of cooperation between their members, as indicated by Thomaz de Almeida (1991). To this end, they began to form what Wilk (1984, 1997) termed *household cluster*. Thus, instead of an extended family continuing to live under the same roof, they began to form clusters of dwelling units, distanced from each other but communicating with one another through a network of trails (*tape po'i*), with the house of the leaders of the extended family as their nexus of articulation (see Figure 4).

Next, I will focus attention specifically on how these dwelling units are formed and reproduced, discussing the dynamics of building construction.

3 An engraving from the late 19th century clearly shows the presence of the large house, called *oygusu* among the Kaiowa, with its various domestic fires and, in the background, a house with a two-slope roof and a separate wall (see Figure 1).

The construction dynamics of the dwelling units

The Kaiowa households are constituted fundamentally of extended families of three generations, with this model of social organization being cosmologically consecrated, since the deities themselves, the moral model humanity ought to mirror, also organize themselves this way (Melià *et al*. 1976; Mura 2019). Always according to the cosmology, in the *Ary-ypy* (the space-time of the origins), these families would have received, from *Ñande Ru* (Our Father), certain locations on Earth, for them to settle in and make good use of the local resources. The leaders of these families would also have received the *chiru* (sticks and crosses from a sacred tree), with the duty to tend to them whilst being protected by them, with the aid of other ritualistic instruments, such as *mbaraka* (rattles) and *takuapu* (rhythmic percussion sticks). The Earth itself, understood to be a disc that was expanded by the action of the deities until it reached a large size, is settled on a large cross, and today depends on the care of the Kaiowa extended families. These families, through use of the *chiru* sticks and crosses, contribute to the maintenance of the cosmic equilibrium (Mura 2010; 2019). Such cosmological aspects have great moral implications, revealing a set of parenthood relations between the indigenous and the deities, these being considered as the *Ñande Rykey* (Our Older Siblings), on

whom the indigenous find support, during the development of their lives. The understanding is that between relatives (divine and terrestrial) and between these and the places on Earth, there must be a game of relations, based on a behavior of mutual support (*teko mbojeko porã*), following rules of reciprocity (*teko joja*) and obligations in cooperation, which follow the hierarchy of the sequence of places of support (*jekoha*) between the elements of the universe. Thus, the Earth shall have a cross as its *jekoha*, the families that inhabit it will rely on those places that are assigned to them, and, in turn, within the extended families, the *jekoha* will be represented by the oldest couple, who are configured as the nexus of the relationships between all the members, but also of the entire reference space of the households. (Mura 2014; 2019).

Well, to understand the construction dynamics of housing units, we must keep in mind this game of reciprocity and support, because it is through the values that derive from them that we will have a clearer understanding of the organization and driving of flows of materials in the creation of built environments among these indigenous people.

Another important aspect to consider is that until the mid-2000s, masonry houses were very rare, and when they were built, they were not built by the indigenous people themselves. Therefore, I will primarily focus here on describing the construction of wooden-frame dwellings, but at the end of this section, I will show the implications of the more recent introduction of concrete and brick structures for the dynamics of space use among these indigenous people.

Among the Kaiowa, the choice of post-marital residence upon a woman's first marriage is preferably matrilocal. However, given the frequent separation of couples, post-marital choices statistically tend to be bilocal. Neolocality is very rare, and when it occurs, it is transient. Therefore, the location of the new couple's dwelling unit will be within the scope and influence of the wife's or husband's family. Within this space, a clearing (in the woods or fields) will be chosen, in which a circular patio (*oka*) will be formed. Initially, this patio may be adjacent to that of the household leaders and small in size (10 or 15 meters in diameter). However, over time, depending on the number and variety of buildings built there, as well as the activities taking place in and around it, the size of the *oka*, as well as its distance from the domestic *jekoha*, may increase. It may reach approximately 100 meters in diameter and be hundreds of meters away from the other *oka* (Mura 2019).

The process that leads a newly formed couple to consolidate their settlement in an *oka* involves the mobilization of skills and materials that generally enable the number of housing constructions in this patio to increase gradually, and then acquire a cyclical nature. This is what I have termed the "dwelling unit construction cycle" among the Kaiowa (Mura 2000). This construction cycle follows a modular logic, articulating three built environment spaces within the *oka*: dormitory, kitchen, and storage (see Figure 5).

Initially, a house (*óy*) is built, containing these three spaces, usually separating the dormitory from the kitchen/storage space with an interior wall. Then, a

second building is constructed, intended for dormitory use, with the previous one becoming the kitchen and storage space. In a third moment, another structure is built, destined, again, to be a dormitory, such that the second one becomes a kitchen and the first is repurposed for storing work tools and objects. When a fourth structure is finally built, again, for the purpose of being a dormitory, the first one has reached the end of its useful life and is dismantled, with its materials being reused for erecting new buildings, placed in trade circuits, donated (especially to family members) or used as fuel for fire. Thus ends the dwelling unit construction cycle (Mura 2000).

It must be noted that said construction cycle was developed from the indigenous people's experience with mainly plant-based materials, such as wood and fibers. As such, the buildings constructed in the best conditions — with thatch roofs with many layers and smoked with household fires, which allows for termite control — can have a useful life of up to 20 years, however, it is necessary to carry out constant repairs or replace parts of the architectural structure. This observation about the useful life of each material also leads the Kaiowa to adopt a modular approach not only with the three enclosed spaces previously considered, but also with the architectural details and the way they are connected to each other. This depends on the available materials, on how they can be obtained, and on what function each building shall have (Mura 2000). Next, we will see precisely these principles of association and the forms that can be produced.

First, we will take into consideration the architectural peculiarities of the large huts that predominated in the past. Those were characterized by not having walls, with the roofing extending to the ground. The main technical principle is based on the flexibility of the materials used to make the rafters, since the houses did not have central columns to support the ridge line. The rafters themselves, driven into the ground at one end of the building, rest on side beams, creating a lever that, at the other end, directly supports the ridge line. This, in turn, by exerting a gravitational force vertically, ends up bending the rafters themselves, giving the building the shape of an upturned canoe (Mura 2000; Mura 2019) (see Figures 1, 2 and 3). This type of house, named *oyjekutu* ("house with rods driven into the ground"), could be considered similar to the huts built by some indigenous peoples in Xingu, such as the Kalapalo, by its external aspect, however, when it comes to the structural forces between the architectural details, they are significantly different. The xinguan huts have two central columns inside and the rafters do not, therefore, have the function of supporting the ridge line. The architectural features of the Kaiowa large huts allowed for eventual expansions of their dimensions, by disassembling one of their extremities, without altering the internal continuous space with central columns that would become obstacles for the dances meant to take place within it. Said dances happen in front of the *yvyra marangatu koty pegua* (internal altar), located in the center of the building, in front of the eastern opening, which connects to the external altar, located in the patio (*yvyra marangatu oka pegua*), forming a corridor that allows for the dances to travel between these two points, from sunset to sunrise (Mura 2019).

With the progressive reduction in the size of the *oyjekutu* and the multiplication of the number and variety of constructions carried out within the space encompassed by a household cluster, the internal altar began to be built *ad hoc* for each ritual, being positioned under a covering at the front of the house, where the sacred instruments were kept. In the 1970s, the large huts became too rare for housing purposes, but, with the struggle for territory recovery, the indigenous people began demanding resources from political allies to resume building them, this time for assembly, manifestations of ethnicity and, mainly, for realization of rituals, therefore becoming temples and no longer dwellings (Mura 2013).

Since the 1970s, residential construction has primarily been constructed by separating the roof from the walls, following architectural framing techniques based on supporting the ridgeline with roof truss (a triangle formed by a cross-beam and two diagonals) and/or by supporting it on pillars. Housing walls can be constructed with vertical wooden supports, split and flattened bamboo, or *pindo* palm bark. However, if available, they can also be constructed with sawmill boards and, in more improvised cases or to block the wind, with plastic tarps or cardboard (Mura 2000) (see Figures 6 to 11).

The buildings can have one or two entrances, with no windows, and with ventilation ensured by the gaps between the parts that form the walls. On these, which are perfectly vertical (unlike in the *oyjekutu*), shelves are commonly rested, and if the space is a dormitory, so are the *tarimbas*[4].

Due to their features, the walls, being flat and rectangular, can be made from a variety of materials, independent of what form the building will have. The case is different for roofs, whose coverage will depend greatly on their design, and can be designed to accommodate up to four slopes. If the house is designed for a roof with up to two slopes, the roofing can be made of a variety of materials, such as thatch, *jataí* palm leaves, wood, ceramic, or fiber cement shingles. For three or four-slope roofs, the materials are limited to thatch and, much less frequently, wood shingles. This restriction comes from the fact that, if the roof were made from fiber cement or ceramic shingles, the builders wouldn't have the proper tools or techniques for cutting them, not to mention the amount of wasted material that these roofing techniques would imply. In these circumstances, because it is based on stitching techniques, the use of thatch allows for more flexible molding, with guaranteed effectiveness in waterproofing the meeting of the slopes[5]. Roof planning, therefore, is something that denotes not only the style of house to be built, but also the range of materials with which those making the technical choice think they will be able to work (Mura 2000).

Said choice, in reality, depends on many factors and it is not certain that the desired materials will be the ones used for construction. In fact, it is very common for people to quickly build the skeleton of their homes but leave it uncovered for several months. In case it is chosen to use thatch, one must consider the presence of this grass, which grows in fields near the site where the dwelling will be built or, otherwise, logistics should be established to ensure the collection, transportation, and storage of this material. Such logistics entails cooperation among relatives,

4 Beds made with supports stuck into the ground and frames made of *pindo* cork or bamboo.

5 In these cases, jataí palm leaves are not used, as they do not allow for proper stitching and are also less durable. In fact, when these leaves are used on two-slope roofs, which are the most common, two layers are laid, often interspersed with plastic tarps, precisely to improve waterproofing.

but also with non-indigenous allies and rural traders with whom one has clientele ties and who can thus offer, for example, means of transportation.

Thatch also suffers from wildfires that happen during droughts, when, in areas that are nowadays nearly completely deforested, wind can propagate fires for miles, inevitably affecting the floodplain areas where precisely this vegetation grows.

The alternative use of other materials, such as shingles, for example — especially fiber-cement shingles, which are more sought after due to their relatively lower costs — also involves transportation logistics and the availability of financial resources to acquire them, conditions that are not always available at the time the construction process begins. In fact, the acquisition of any material, tool or object by the Kaiowa cannot be defined as the simple process of searching for them, which would define their gathering activities with the verb *heka* ("picking up", "collecting"). The activities that can be understood as part of the household ecology of the Kaiowa are considered, as we have seen, to be properly *jeheka*, that is, *jere* (circulation) plus, precisely, *heka*, meaning, therefore, "to go in search of." It is in the act of moving through the territory, through the daily walks (*oguata*) along the *tape po'i* (networks of trails extending from each domestic space) that *jeheka* activities establish a relationship with the environments present there, as well as with the resources that can be found there. I, along with Barbosa da Silva (Barbosa da Silva and Mura 2018), and in dialogue with Leroi-Gourhan (2002a), refer to such a way of planning and exploring territory — which implies an elevated mobility of persons and things, but which has the household space as its start and end points — as "irradiated itineration"[6].

The spread of the *jeheka* itineraries, in turn, represents a way of constructing spaces of dominion, not understood as something finished but rather as a *process of dominionization* — through which people seek to define parameters of access to resources, following a logic of cooperation and defining policies for the mobilization of things, based on skills, moral and cosmological aspects, property and use rights, as well as a scale of values attributed to the objects themselves. The construction of a house, as well as its transformation over time, will depend on the specificities of this process of dominionization.

First, one must consider the value the Kaiowa place on the building itself. As a thing composed of various materials, it does not differ from many other objects, and can be alienated totally or partially by its owner, quite frequently, thus entering a circuit of exchange with a broad mobility of goods. In this case, when we speak of alienation, we refer specifically to the materials that compose its parts and not to the location where the house is built. It will therefore have to be dismantled, and its new owner will not necessarily rebuild it in the same way, possibly even using its parts for other purposes, thus further fueling the circuit of exchanges between people.

The building may also be abandoned or even burned down due to the presence of the carnal souls (*anguê*) of deceased relatives. In this case, a new patio should be built nearby to allow the residence to be moved within the household space's

6 "However, it is possible to affirm that the displacements produced by *jeheka* practices allow activities to be linked in time and space, through individual and collective strategies, aimed at setting up composite calendars and itineraries (see Mura 2006). It should be emphasised that such practices are not totally decentralised, defining only an itinerant space, but neither are they the result of a solely radiant perception, from a centre towards its surroundings, according to arguments used by Leroi-Gourhan (1965) to distinguish and contrast the characteristics of territorial organisation of nomadic hunter and gatherer peoples, on the one hand, and sedentary farmers, on the other. The very mode of movement and use of space derived from the *jeheka* experience, through *oguata* (wandering) — which, as we have seen, encounters its cosmological sublimation in the time-space of origins, in the formation of tracks by the gods — occurs by strongly valuing centres of irradiation, with the Earth itself having developed from a disk, which later became the Earth's own navel. In this context, therefore, we speak of a modality of construction of territories from centres of wandering irradiation. In other words, the Kaiowa people construct spaces of use and occupation through an 'irradiated itineration'. In fact, *jeheka* activities and those arising and/or correlated with them have an axis, that is, the point of departure and arrival, in the residential spaces of the various Kaiowa households" (Barbosa da Silva and Mura 2018, 12-13).

area of influence.

Until the mid-2000s, the mobility of people and materials in the construction of housing spaces was quite dynamic, this also being due to the modular characteristics previously described and the experiential observation of the progressive wear of the wood and fibers with which the houses were built.

The introduction of masonry houses clearly had consequences for the dynamics of dwelling construction among the Kaiowa, but so far, it has not significantly altered their basic principles. Initially, the spread of this type of housing was primarily due to two government affordable housing programs, promoted starting in the mid-2000s: "*Che roga mi*" ("My little house"), by the Mato Grosso do Sul state government, and "*Minha casa minha vida*" ("My house, my life"), by the federal government. In both programs, the houses were designed in a standardized manner and built by non-indigenous professionals (see Figures 12 and 13). These types of constructions were thus added to indigenous patios alongside other masonry structures—such as the basic sanitation kits built by the National Health Foundation (FUNASA), consisting of a bathroom and a laundry tub. These projects have created a technical environment favorable to the development of experiences by the Kaiowa, with techniques, tools and materials necessary for the construction of structures with concrete and bricks (see Figures 14 and 15), noting their greater durability in relation to wooden structures, but also noticing their greater fixity.

Once built, masonry houses can only be partially disassembled, meaning that only the roof structures and window and door frames can be reused for other constructions and exchange circuits. Concrete and brick structures, once demolished, produce only rubble, whose properties do not allow for the production of alloys or modules suitable for reproducing similar structures efficiently. In these terms, the modularity of masonry houses is limited, but it is still possible when some of their walls are demolished and combined with others made of wood (see Figure 16). The very characteristics of masonry houses, having completely closed walls and few windows, make the use of wood-burning stoves difficult. In these terms, even with the presence of these houses in dwelling units, wooden structures continue to be built for kitchen use, ensuring the use of firewood as fuel. The smoke produced by these fires is also important for the preservation of corn cobs intended for planting. Similarly, the need to store tools can be met with this structure or other independent ones, thus maintaining the tendency to define construction cycles for dwelling units, with more buildings, but whose principle of space articulation remains the same, although, due to the greater durability of masonry, the construction sequences, in this case, can be altered.

Finally, it must also be considered that, with the presence of masonry structures, the eventual need to abandon the site due to the presence of unwanted souls has become more costly. However, if this structure is only the basic sanitation kit from FUNASA, the option of abandonment is still frequent (see Figure 17). The situation is different for houses, since the opening of new patios would not be contemplated by popular housing programs, and, if a dwelling made of this type of material is desired, it would be necessary to bear the high costs that its construc-

tion entails for the average resources available to most Kaiowa. It is also necessary to consider the eventual need to hire specialized labor, which is still scarce among these indigenous people, something that would not be necessary to build wooden structures — a skill that is the prerogative of practically all adult men. Today, therefore, attempts are made to ward off unwanted souls through ritual activities or, in extreme cases, the house is sold to members of neighboring households, with the proceeds allowing the continuation of the construction dynamics of the dwelling unit as described here.

Final reflections

The ethnographic material on the Kaiowa presented here allows us to make some final reflections on technical processes and built environments among these indigenous people. It should firstly be emphasized that, in order to understand the construction process and the operational sequences (chaînes opératoires) that allow the articulation of techniques and materials, one cannot consider only the planning of the dwelling and the execution of the parts of the work, as if working times, skills, and necessary materials were predefined. Thus, the relationship between acquisition techniques and construction techniques implies mediation between people and things, defined through operational behaviors resulting from distinct intentions, with the political dimension being essential in this process. As Plato had already pointed out (Cambiano 1971), politics itself should be considered a technique for organizing other techniques and, in the case at hand, being an expression of the action of multiple human actors in relation to each other, and, in turn, with non-human elements, the process will result in the formation of power relations that must be understood as relations of force, in the physical sense of the word, channeling flows of materials in a specific way (Mura 2017; Sautchuk and Mura 2019; Mura and Padawer 2022). *Jeheka* activities, characterized by temporal indeterminacy and material procurement constraints, limit any initial planning, as well as the degree of control each Kaiowa person may have over the construction process of their dwellings. Their decision-making will depend on the *repertoire of possibilities* available to them (Mura 2000 and 2011).

This repertoire would be the result of balancing the availability of materials and tools with technical accessibility to them, whether from the point of view of manual skills, political skills, or cosmological ones (through prayers and rituals). In this sense, technical choices are the result of multiple causes and processes that lead to decision-making, and not, as Lemonnier (1993) would suggest, as if these were fundamentally the objectivation of symbolic systems operating in a given collectivity[7]. This is not to say that the symbolic dimension is not relevant, but rather to emphasize that it constitutes only one component.

The symbolic processes are the result of practical experiences, with an education of attention in the activities performed, in the terms set out by Ingold (2010), prevailing over the transmission of cultural representations, causing values to be related to technical skills and even to materials and things, enabling the definition

7 Taking into account ethnographic material on the Kekchi Maya of Belize, regarding built environments among these indigenous people, Richard Wilk argues the following: "Adopting a decision-making approach therefore has the potential of bringing discussion of the built environment back to center stage in the study of culture change, innovation, and economic adaptation. By focusing on how household members themselves make decisions about their domestic architecture we can build up a body of empirical data on the cultural, economic, environmental, and psychological factors that affect that decision-making in different contexts. We will then be in a position to see why and how different factors affect the built environment in different historical and economic circumstances, rather than seeking illusory ahistorical generalities" (Wilk 1993, 42).

of priority scales in decision-making. In the specific case of built environments, as stated by Rapoport (1969 and 1994), the forms of architectural constructions, which constitute the fixed elements, are not so relevant to understanding the meanings that the latter have for people[8]. Indeed, it is not the form that makes a house a dwelling, and among the Kaiowa this is evident in relation to the *oygusu*, which are currently no longer intended for use as dwellings. Inspired by Edward Hall's (1977) ideas on proxemic relations, Rapoport argues that it is the semi-fixed elements, such as "the furnishings of environments, whether outdoor or indoor: signs, plants, elements of personalization, furniture, bric-à-brac, and so forth" (Rapoport 1994, 462), as well as the non-fixed elements, such as the activities carried out in that place and the behavior of the people, that should be considered in the analysis, since these would form a system of settings that would serve as a parameter for people to attribute specific functions and meanings to the built space.

In his analytical approach, Rapoport focuses primarily on symbolic and cognitive aspects, ultimately presenting a certain cultural schematism that leads him to contrast supposedly traditional attitudes with supposedly modern ones in the definition of built environments, attributing to the former a tendency to be more deterministic, while the latter would be more flexible, something that is strongly criticized by Wilk (1993). This author cites as an example the significant flexibility of the Kekchi Maya indigenous people of Belize in their activities and in the construction of their dwellings. However, beyond cultural schematism, Rapoport's proposal to look at semi-fixed and non-fixed elements implies focusing on details and modules, allowing one to capture flexibility or rigidity in the association and valuation of materials and things, something that I consider quite interesting and important for understanding constructive variations, such as those described throughout this article.

In this sense, avoiding associating such behaviors with an unproductive traditional/modern dichotomy, what is relevant is to understand how, in specific contexts, a given household uses rigidity or flexibility in dealing with materials and things. The archaeologist Susan Kent (1993), for example, establishes an equation between the complexity of the systems of activities carried out in the household space and the segmentation of dwellings. Among the Kaiowa, this progressive complexification over the last 150 years does not seem to have been so significant. More evident in this same period is the increase in semi-fixed and non-fixed elements, such as furniture, objects, and tools, that make up the baggage of materials in the dwelling units. This may have allowed for a segmentation of spaces, mainly to define a use as storage and a place dedicated to food preparation separate from the dormitory. But I think that the flexibility among the Kaiowa is not limited to these three functions attributed to the built spaces.

The construction cycle of the dwelling unit, in my opinion, reveals the primacy, in terms of importance and value, of the patio as the place for sociability and the development of most domestic activities, thus positioning itself as the nexus of articulation of the constructed spaces in the sequence described in this work. It also reveals a tendency to attribute modular properties to architectural details,

8 "…a dwelling itself can be shown to be a particular system of settings within which given sets of activities take place. Thus one cannot, as is so often done, compare buildings as dwellings merely because –in form and structure– they appear to us as such. In the study of dwellings the proper units of comparison are the system of settings, which have first to be discovered before they can be compared. This discovery helps to avoid the problems that can arise from the discrepancy between our own analytic concepts and those of the peoples whom we study, that is between 'etic' and 'emic' models". (Rapoport 1994, 463).

similar to the semi-fixed elements present in the dwellings, allowing the building itself to be considered as something in continuous transformation.

As we have seen, this perception is possible due to the technical characteristics of the materials used and their perishability, particularly when wood and vegetable fibers are used, allowing for the production of the most varied and flexible forms of housing construction. The recent introduction of masonry, on the other hand, has produced a certain rigidity in the treatment of materials, thus marking a countertrend in the segmentation process of construction. In these terms, in addition to considering the setting systems and domestic space activities, to understand the changes in forms and the multiplication or decrease in the number of constructions per dwelling unit among the Kaiowa, it is opportune to look at how construction materials are chosen, acquired, traded, and managed. That is, we must consider the repertoire of possibilities of each individual and the characteristics of the collection activities (*jeheka*), which leads us again to the question of how decisions are made and how technical choices are determined.

Now, taking into account the nature of these technical choices, and as I move towards concluding these reflections, I would like to briefly discuss another aspect of the dwelling construction process: the supposed relationship between the architectural structure and a possible ethnic style in its construction. The transition from the o*ygusu* to the contemporary houses could be seen as an abandonment of ethnicity and, therefore, as the result of a process of acculturation, as understood by Schaden (1974) — as explained in the introduction to this work. However, Kent and Vierich (1989), in an excellent essay on the ways of building and transforming dwellings by ethnic groups in the Kalahari Desert, Africa, show precisely the not necessarily obligatory relationship between these constructive activities and ethnicity. Analyzing several archaeological sites relating to periods of recent occupation, they perceive that the planning of territorial mobility, as well as its transformation over time, is fundamental to understanding the choices made, arriving at the following conclusions:

> Our analysis indicates that all kinds of huts are found at camps of each ethnic group. Ethnicity no doubt does influence specific architectural design but it does not appear to affect how substantially constructed a dwelling will be. Of the 25 Basarwa sites 84.62 percent have grass huts which require less investment in construction time (one half to a full day), 23.08 percent have grass and woven branches huts which require more time to build (four to seven days), and 19.23 percent have mud brick huts which take the most time to build (one to three weeks, depending on whether or not it rains). (The percentages do not total 100 because some sites have more than one type of hut.) Each hut style is represented in equal proportions at the five Bakgalagadi sites. Hut types are associated with the anticipated length of occupation, not with ethnicity. (Kent and Vierich 1989, 122-123).

Similar to what the authors demonstrate for the ethnic groups of the Kalahari,

mobility among the Kaiowa emerges as a central factor in understanding the planning and alteration of a dwelling unit. As we have seen, the increased flexibility in the organization of the household has given rise to a much more capillary territorial dynamic, implying greater constructive variations. As such, as the authors state, the type of shelter to be built will depend heavily on the planning of the stay and the activities intended to be carried out in a given place. To this end, the most appropriate building methods can be used, but the situation changes over time, and these methods can be significantly transformed. For example, families that have greatly reduced their agricultural activities, with most of their members engaging in seasonal work outside indigenous lands (sugar cane plantations, apple picking, etc.), can build their dwelling units as if they were camps, using plastic tarps as a preferred material for roof and wall coverage. However, as this working condition changes, the decision may be made to cover the house with more stable and durable materials, and even to venture into the construction of masonry buildings. With the situation changing again, mobility itself may be redefined, with family members becoming absent from the domestic space more frequently, even trading the materials from their home or, in extreme cases, abandoning the place altogether.

In short, it is observed that the experiences of indigenous peoples with quite diverse materials and architectural structures over the last one hundred and fifty years have allowed them to design quite complex repertoires of possibilities, with the Kaiowa always seeking to make the technical choices considered most advantageous for life and the reproduction of the organizational characteristics of the household cluster, centered on a high mobility of its members and intense sociability. In these terms, appropriating the argument already cited by Sautchuk (2017) at the beginning of this work, I can say that focusing attention on technique allows us to understand how, among the Kaiowa, the variations and constructive transformations of dwelling units, in addition to showing a process of complexification and flexibility of activities, have at the same time allowed the reproduction, sophistication and, sometimes, reinforcement of a quite peculiar lifestyle.

FIGURE 1 - *Oygusu* em uma gravura de final do século XIX. Nos fundos da imagem, construção com teto a duas águas e postes centrais. (Bates *apud* Castro Faria 1951).

FIGURE 2 (left) - *Oypysy* ("casa de rezas") na Reserva de Dourados. (Fotos de Alexandra Barbosa da Silva, 04/2006).

FIGURE 3 (right)- *Oypysy* ("casa de rezas") na Reserva de Dourados. (Fotos de Alexandra Barbosa da Silva, 04/2006).

FIGURE 4 – Grupo doméstico agregado. O círculo com linha vermelha indica a residência dos líderes da família extensa; os círculos com linha amarela indicam os filhos e filhas casados com ou sem prole.

ARTICLE

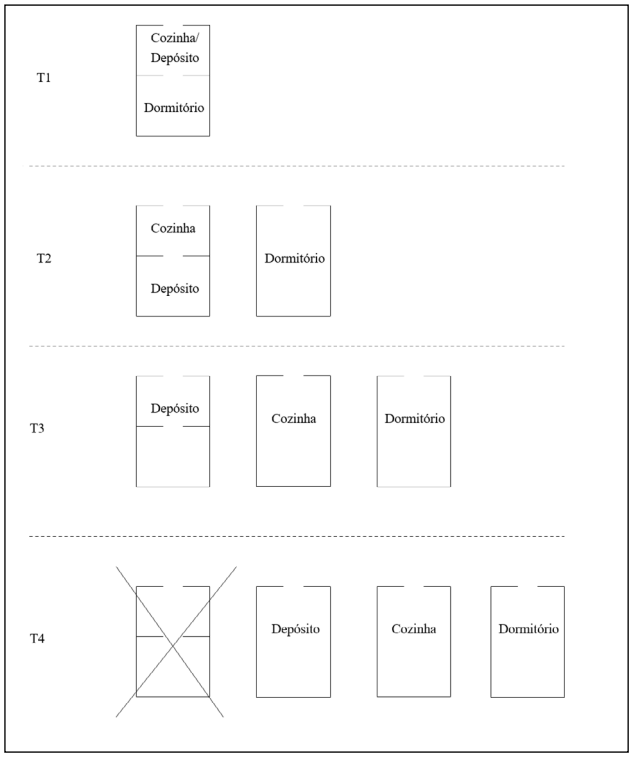

FIGURE 5 – Ciclo construtivo da unidade habitacional.

FIGURE 6 (left) – Casa com teto a duas águas e cobertura de palmeira Jataí. Pirakua, 09/1999.

FIGURE 7 (right) – Habitação com teto a quatro águas, cobertura em sapé e paredes em taquara batida. Pirakua,

FIGURE 8 (left) – Esqueleto de casa com teto a duas águas, iniciando a cobertura com sapé. Guasuty, 07/1993.

FIGURE 9 (right) – Casa com telhado a duas águas e cobertura com telhas de fibrocimento. Pirakua, 09/1999.

FIGURE 10 (left) – Casa com arquitetura da *oygusu*, mas de pequenas dimensões. Jaguapire, 09/1999.

FIGURE 11 (right) – Casa com metade da arquitetura da *oygusu*. Jaguapire, 09/1999.

FIGURE 12 – Casa do Programa "Minha Casa, Minha Vida". Jaguapire, 11/2018.

FIGURE 13 – Casa do Programa "Che Roga Mi". Jaguapire, 11/2018.

FIGURE 14 (left) – Casas de alvenaria, com teto em fibrocimento, construídas pelos indígenas. Jaguapire, 11/2018.

FIGURE 15 (right)– Casas de alvenaria, com teto em fibrocimento, construídas pelos indígenas. Jaguapire, 11/2018.

FIGURE 16 (left) – Variações modulares em casa de alvenaria. Jaguapire, 11/2018.

FIGURE 17 (right) – Unidade habitacional abandonada, com vestígios de kit de saneamento básico em alvenaria. Jaguapire, 11/2018.

About the Author

Fabio Mura

PhD in Social Anthropology from the Postgraduate Program in Social Anthropology - National Museum / UFRJ. Associate Professor IV at the Federal University of Paraíba (UFPB). Leads Téchnai: Laboratory for Studies in Technical Processes. Main areas of interest: Ethnology, Anthropology of Technique and Anthropology of Knowledge.

E-mail: fabiomura64@gmail.com

Author's Contribution

This article is of individual authorship, based on my academic research conducted on the subject.

Data availability statement

I hereby declare, for the due purposes, that the data present in the article is partially available in other works of mine which are freely accessible. The remainder of the data is in my personal collection, as result of research conducted on the subject over the years.

Editor-in-Chief

Deputy Editors

Translation:

Pedro Tiberio Mura

Recebido em 28/10/2025

Aprovado para publicação em 04/10/2025 pelo editor Carlos Sautchuk (https://orcid.org/0000-0002-2427-2153)

References

Barbosa da Silva, Alexandra, and Fabio Mura. 2018. "Territory and domestic ecology among the Kaiowa of Mato Grosso do Sul". *Vibrant* 15, no. 2: 1–24.

Barbosa da Silva, Alexandra. 2007. "Mais além da 'aldeia': Território e redes sociais entre os Guarani de Mato Grosso do Sul". PhD diss., Museu Nacional, Universidade Federal do Rio de Janeiro.

Brand, Antonio. 1997. "O impacto da perda da terra sobre a tradição Kaiowá/Guarani: Os difíceis caminhos da palavra". PhD diss., Pontifícia Universidade Católica do Rio Grande do Sul.

Cambiano, Giuseppe. 1971. *Platone e le tecniche.* Torino: Einaudi.

Castro Faria, Luis de. 1951. "Origens culturais da habitação popular do Brasil". *Boletim do Museu Nacional* 12.

Chamorro, Graciela. 1995. *Kurusu Ñe'ëngatu: Palabras que la historia no podría olvidar.* Biblioteca Paraguaya de Antropología, v. 25. Asunción: Centro de Estudios Antropológicos.

Gadelha, Regina Maria d'Aquino Fonseca. 1980. As missões jesuíticas do Itatim: Um estudo das estruturas socioeconômicas coloniais do Paraguai (séculos XVI e XVII). Rio de Janeiro: Paz e Terra.

Hall, Edward T. 1977. *A dimensão oculta.* Rio de Janeiro: Francisco Alves.

Ingold, Tim. 2010. "Da transmissão de representações à educação da atenção". *Educação* 33, no. 1: 6–25.

Kent, Susan, and Helga Vierich. 1989. "The myth of ecological determinism: Anticipated mobility and site spacial organization". In *Farmers as hunters: The implications of sedentism*, edited by Susan Kent. Cambridge: Cambridge University Press.

Kent, Susan. 1993. "A cross-cultural study of segmentation, architecture, and the use of space". In *Domestic Architecture and the use of space: An interdisciplinary cross-cultural study*, edited by Susan Kent. Cambridge: Cambridge University Press.

Lemonnier, Pierre. 1993. "Introduction". In *Technological choices: Transformation in material cultures since the Neolithic*, edited by Pierre Lemonnier. London; New York: Routledge.

Leroi-Gourhan, André. 1971 [1943]. *Evolução e técnicas I: O homem e a matéria.* Lisboa: Edições 70.

Leroi-Gourhan, André. 2002a [1965]. *O gesto e a palavra I: Técnica e linguagem.* Lisboa: Edições 70.

Leroi-Gourhan, André. 2002b [1965]. *O gesto e a palavra II: Memória e os ritmos.* Lisboa: Edições 70.

M.D.A. (Manuscrito da Coleção de Angelis). 1951. *Jesuítas e bandeirantes no Guairá*, v. 1. Rio de Janeiro: Biblioteca Nacional, Divisão de Obras Raras e Publicações.

M.D.A. (Manuscrito da Coleção de Angelis). 1952. *Jesuítas e bandeirantes do Itatim*, v. 2. Rio de Janeiro: Biblioteca Nacional, Divisão de Obras Raras e Publicações.

Melià, Bartomeu, Alfonso Pérez, and Luis Farré. 1997. El guaraní a su alcance: Un método para aprender la lengua guaraní del Paraguay. Asunción: CEPAG.

Melià, Bartomeu, Friedl Grünberg, and Georg Grünberg. 1976. "Los Paĩ-Tavyterã:

Etnografía guaraní del Paraguay contemporáneo". *Suplemento Antropológico de la Revista del Ateneo Paraguayo* 9 (1–2).

Melià, Bartomeu. 1986. *El guaraní conquistado y reducido: Ensayos de etnohistoria.* Asunción: Biblioteca Paraguaya de Antropología.

Mura, Fabio, and Alexandra Barbosa da Silva. 2019. "Relações de trabalho e colonialismo entre os Kaiowa e os Ñandéva de Mato Grosso do Sul". In *Povos indígenas e relações de poder: Olhares sobre a América do Sul*, edited by Fabio Mura, Marcondes de Araújo Secundino, and Alexandra Barbosa da Silva, 223–64. Campina Grande: EDUEPB.

Mura, Fabio, and Ana Padawer. 2022. "Procesos técnicos y tradiciones de conocimiento locales: Miradas desde/hacia Brasil y Argentina". *Espaço Ameríndio* 16, no. 3: 1–30.

Mura, Fabio. 2000. "Habitações Kaiowa: Formas, propriedades técnicas e organização social". Master's thesis, Museu Nacional, Universidade Federal do Rio de Janeiro.

Mura, Fabio. 2010. "A trajetória dos Chiru na construção da tradição de conhecimento Kaiowa". *Mana* 16, no. 1: 123–50.

Mura, Fabio. 2011. "De sujeitos e objetos: Um ensaio crítico de antropologia da técnica e da tecnologia". *Horizontes Antropológicos* 17, no. 36: 95–125.

Mura, Fabio. 2013. "Gerando formas: conceituações Kaiowa sobre a relação entre substâncias, forças e ações no universo". In *Manifestações artísticas e ciências sociais: reflexões sobre arte e cultura material*, edited by Patrícia Reinheimer, and Sabrina Parracho Sant'Anna. Rio de Janeiro: Folha Seca.

Mura, Fabio. 2014. "Beyond nature and the supernatural: Some reflections on religion, ethnicity and traditions of knowledge". *Vibrant* 11, no. 2: 407–41.

Mura, Fabio. 2017. "A política como técnica de uso e como ato transformador: Algumas reflexões a partir do caso dos Kaiowa de Mato Grosso do Sul". In *Transformações técnicas*, edited by Carlos Sautchuk. Brasília: ABA Publicações.

Mura, Fabio. 2019. À procura do "bom viver": Território, tradição de conhecimento e ecologia doméstica entre os Kaiowa. Rio de Janeiro: ABA Publicações.

Rapoport, Amos. 1969. *House form and culture.* Englewood Cliffs, NJ: Prentice-Hall.

Rapoport, Amos. 1993. "System of activities and system of settings". In *Domestic architecture and the use of space: An interdisciplinary cross-cultural study*, edited by Susan Kent. Cambridge: Cambridge University Press.

Rapoport, Amos. 1994. "Spatial organization and the built environment". In *Companion Encyclopedia of Anthropology*, edited by Tim Ingold. London; New York: Routledge.

Sautchuk, Carlos E. 2017. "Introdução: Técnica e/em/como transformação". In *Técnica e transformação: Perspectivas antropológicas*, edited by Carlos Sautchuk. Brasília: ABA Publicações.

Sautchuk, Carlos E., and Fabio Mura. 2019. "Technique, power, transformation: Views from Brazilian anthropology". *Vibrant: Virtual Brazilian Anthropology* 17: 1–17.

Schaden, Egon. 1974 [1954]. *Aspectos fundamentais da cultura guarani.* São Paulo: E.P.U.; EDUSP.

Susnik, Branislava. 1979–1980. "Etnohistoria de los Guaraníes: Época colonial". In *Los aborígenes del Paraguay*, v. 2. Asunción: Museo Etnográfico Andrés Barbero.

Susnik, Branislava. 1982. "Cultura material". In *Los aborígenes del Paraguay*, v. 4. Asunción: Museo Etnográfico Andrés Barbero.

Thomaz de Almeida, Rubem Ferreira. 1991. “O projeto Kaiowa-Ñandeva: Uma experiência de etnodesenvolvimento junto aos Guarani-Kaiowa e Guarani-Ñandeva contemporâneos do Mato Grosso do Sul”. Master’s thesis, Museu Nacional, Universidade Federal do Rio de Janeiro.

Thomaz de Almeida, Rubem Ferreira. 2001. Do desenvolvimento comunitário à mobilização política: O projeto Kaiowa-Ñandeva como experiência antropológica. Rio de Janeiro: Contra Capa Livraria.

Wilk, Richard R. 1984. “Households in process: Agricultural change and domestic transformation among the Kekchi Maya of Belize”. In *Households: Comparative and historical studies of the domestic group*, edited by R. McC. Netting, Richard R. Wilk, and E. J. Arnold. Berkeley: University of California Press.

Wilk, Richard R. 1993. “The built environment and consumer decisions”. In *Domestic architecture and the use of space: An interdisciplinary cross-cultural study*, edited by Susan Kent. Cambridge: Cambridge University Press.

Wilk, Richard R. 1997. *Household ecology: Economic change and domestic life among the Kekchi Maya in Belize*. DeKalb: Northern Illinois University Press.