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Visual thought processes in an inter-semiotic perspective.  
Patterns and relational thinking in Amazonia\*

Scholars have long argued in favour of the need for an inter-semiotic approach to native systems of knowledge transmission in Amazonia.<sup>1</sup> How do the senses relate and allow us to store and access knowledge? When relations – between visual patterns, myth, ritual song and topography – become the principal subject of comparative research, we will be able to compare different configurations of a continuum of dislocations and mutations around the theme of appropriate and inappropriate relational distances from an Amazonian perspective.<sup>2</sup>

Another important aspect, resulting from the possibility of translating images into words, or vice versa, is suggested by Severi and relates to the possible contributions of ethnography to the study of cognitive psychology. Comparing three closely related ethnographic cases from North-eastern Amazonia, the Yekuana, Wayana-Apalai basketry and Waiãpi flute music, that have been described in detail by respectively Guss, Van Velthem and Beaudet, Severi shows how the analysis of the transduction between images, names and sounds can give us access to the evocation of transmutating and complex beings that could not be otherwise perceived or

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1 Lévi-Strauss 1948; Lagrou 1996, 2007, 2011; Keifenheim 2004; Barcelos 2013; Menezes Bastos 2013; Severi 2014.

2 The problem of proper relational distances is a central theme in Lévi-Strauss's *Mythologiques* (Lévi-Strauss 1964, 1966, 1968, 1971).



Fig. 1: Gloria, master of design, Purus River (photo by the author 2014).

represented.<sup>3</sup> The primordial anaconda of the Huni Kuin (Kaxinawa),<sup>4</sup> called Yube, is an excellent example of this kind of procedure, as I intend to show in this paper.

In this article, I will approach the problem of inter-semiotic translations in the Amazon, taking as a starting point the examination of thought processes at work in the engendering of geometric patterns in Huni Kuin graphic systems. I intend to show how these thought processes are independent from speech and writing systems, but can, nonetheless, be illuminated by native exegesis codified in shamanistic song texts and myth.

One of the outcomes of this exegesis points towards an explicit association between song lines and patterns that can be visualised mentally by men and are drawn on different bodily surfaces by women. Thus, the agency of patterned design seems to be the revelation of connectivity between different realms of reality and different beings, as well as between people, on a social level. Pattern shows how everything is linked and how every unity is composed of symmetrical relations with a systematic asymmetrical inflection that makes the pattern move and change. Because of the connective nature of pattern, its use needs to be controlled in periods of crisis and vulnerability, such as at birth and when mourning the dead (**Fig. 1**).

The widespread occurrence of phenomena of synaesthesia has intrigued scholars of the North-western Amazon, who study the relation between mental visualising and song in shamanistic rituals in the region. The use of substances to induce visions is widespread in the Western corner of the Amazonian rainforest and the transmutation of sound and words, but also smell and touch, into visions widely reported.<sup>5</sup>

The first register of the transposition of the hypothesis of “seeing the lines of a song” to the context of the execution of design can be found in Bruno Illius and in the transcription by Angelica Gebhart-Sayer of the words by a Shipibo artist of renown, Herlinda Agustín, who reported that in old times two closely connected masters of design would coordinate their drawings through song.<sup>6</sup> They would sit at opposite sides of a big ceremonial pot and, by following the melody of the song, the women would draw lines that joined perfectly those traced by her partner at the other side of the pot. In this case Shipibo graphic design systems would constitute

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3 Guss 1989; Beaudet 1997; Van Velthem 2003; Severi 2014.

4 The Cashinahua (bat people), as they were known in literature, or Huni Kuin (real people) as they prefer to be called nowadays, are a Pano speaking group, living at both sides of the frontier between Brazil and Peru, in the Western Amazonian rainforest. On the whole their population counts around 12,000 people. I develop fieldwork among the Huni Kuin of the Alto Purus River since 1989.

5 On the Piaroa see Overing 1978; on the Siona Langdon 2013; on the Tukano Reichel-Dolmatoff 1972 and Hugh-Jones 1979; on the Peruvian *vegetalistas* Luna 1992; on the Colombian *taita's* Taussig 2011 and 2016.

6 Illius 1994; Gebhart-Sayer 1987.



Fig. 2: Shipibo shirt embroidered with *kene* (photo by the author).

precise musical scores. This hypothesis, however, has been subject to objection by other specialists in Shipibo design, who argue that the translation of one register into another is never literal (**Fig. 2**).<sup>7</sup>

Shipibo shamans say it is the spirit of the humming bird who paints the song before the eyes of the shaman, who in turn copies it to give it to the women, masters of design; or they produce a halo of design around the apprentice's head wherefrom she will later on get her inspiration.<sup>8</sup> Thus we would have a transmutation between sound and image involving at the same time a translation from the language of the spirits to that of humans, from sound to pattern and from male inspiration to female art. This complex relation between female art and male inspiration, however, has received several torsions in recent times with women shamans having direct access to the vision-inducing brew, besides claiming their own sources of inspiration, such as 'plantas mestras', special 'perspectival plants' whose leaves they squeeze into the apprentice's eyes to help them visualise and dream with complex designs.<sup>9</sup> The same practice is of utmost importance to the Huni Kuin Masters of design. Shipibo-Conibo and Piro patterning deals with the circulation of live-giving substances,

7 Brabec de Mori – Mori Silvano de Brabec 2008; Belaunde 2009, 32–33.

8 Illius 1994; Gebhart-Sayer 1985 and 1986; Brabec de Mori – Mori Silvano de Brabec 2008.

9 Valenzuela – Valera 2005; Belaunde 2009.

from blood and manioc beer to the sap circulating through the veins of the leaves.<sup>10</sup> Huni Kuin design systems are closely related to these Peruvian graphic traditions of Panoan origin and permit us to problematize the same cognitive questions of translation and transmutation between ritual song, myth and visually coded systems of knowledge transmission, but with different results.

If the art of weaving with design is a female speciality in Western Amazonia, in Eastern Amazonia, among Tukanoan, Arawak and Carib speaking people, the production of basketry with design is a male speciality, intimately related to the context of transmission of ritual knowledge through song and the narration of the myths of origin. Equally among the Wauja from the Xingu River, the art of basketry and the production of design are male specialities, intrinsically related to the production of sound. It was while singing his profoundly sad love song for his sister that the incestuous hero produced his own basket to transform himself into the anaconda, key symbol of the region, considered to contain all potential designs on its skin.<sup>11</sup>

The Wauja myth of origin of the Arakuni snake is a transformation of the well-known myths of origin of the moon, where the pattern on the face of the moon, a primordial design par excellence, is a reminder of the prohibition and consequences of incest.<sup>12</sup> If in the case of the Huni Kuin it was the girl who wanted to mark and thus expose her mysterious nightly visitor, in the Wauja myth it is the mother who recognizes the pattern of her son's body painting on the skin of her daughter. In both cases women reveal and look over the maintenance of proper relational distances and shame produces transformation and irreversible separation.

Amongst the Huni Kuin, visual systems of knowledge transmission envision a controlled access to the spatio-temporal information contained in the geometric patterns, *kene*, produced, exclusively, by women. Women are reluctant to speak about their *kene*, while strangers and men alike keep asking them for the names of the designs they produce. This openly recognized and approved jealous and silent attitude, a defensive strategy against the risks of obviation, is part of a specific notion of how knowledge should be transmitted and acquired. It expresses an acute awareness of the dangers inherent to all display and use of a knowledge that has its roots outside the known social world. For this reason, discursive everyday language is considered inappropriate and insufficient.

Although the engendering of pattern on different surfaces follows a clearly recognizable style, the techniques to produce them differ. If the composition of design in drawing depends on graphic techniques that order the space covered in design along lines that seek to produce – among others – a kinetic effect of instability between

<sup>10</sup> Gow 2001; Colpron 2005.

<sup>11</sup> For the Yekuana, Guss 1989; for the Wauja, Barcelos 2013.

<sup>12</sup> See Lévi-Strauss 1964, 1966, 1968 and 1971.

the perception of foreground and background, the rendering of complex patterns in weaving reveals the importance of numeral sequencing. The execution of pattern on a pre-existing surface invokes interesting partial connections with thought processes explored by the abstractionist movement in Modern art,<sup>13</sup> while the creation of pattern in weaving is undeniably related to mathematical ideas where the numbers 2, 4 and 8 are of special importance.<sup>14</sup>

The idea that

Image-systems that are non-script based are defined by images that do not stand alone, but are positioned in complex networks of relations externalized in formal properties, which exude both systemic constancy and systemic variation,<sup>15</sup>

can be interestingly rephrased from an Amerindian perspective where the notion of groups of transformation and the essentially dual and fractal nature of all being are central.

When dealing with geometric patterns, we inevitably enter the domain of mathematical, formal and relational thinking. In the Amazon, the Huni Kuin have taken this art to interesting heights, since, in contrast to most of their neighbors, who specialized in certain surfaces and techniques, the Huni Kuin allowed design to migrate to almost all of the surfaces that cover their world: in weaving, basketry, ceramics, beadwork, and face or body painting. Men and women alike appreciate complex design very much and consider it to be the expression of complex thought processes. As I intend to show in this paper, both their ‘relational ontology’ and their ‘labyrinthine patterns’ are about connections and transformations that link different beings and species, human and nonhuman, as well as topologies separated in space and time.

The same primordial boa/anaconda who is at the origin of all designs is the owner of the potent ayahuasca brew, considered to be his blood. Visionary experiences with the brew are important cosmopolitical events and can be described as aesthetic battlefields where *yuxin* beings throw images, ornaments and designs onto the eye-soul of humans who enter their realm. The ritual singer responds through powerful ‘song lines’ that become lines of vision to be followed by the eye-souls of those who are in trouble. People take the brew in order to see. Design plays an important role in male visionary experience and it is through the translation of ritual song and the myths of origin that they invoke that we have access to the meaning of design.

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13 Lagrou 2011.

14 Almeida 2019.

15 Küchler 2019.

The process of transmutation of design into sound and words is never direct. It involves a translation of female practice and knowledge into male shamanistic song and narrative; the opposite, so to speak, of what happens in some of the versions of Shipibo inspiration for design mentioned above.

The complex enunciator and composite being who stands behind this exchange and transformation of design into song and vice versa is the primordial anaconda, an androgynous being that originated during the great deluge from the combination of a man and woman lying down in a hammock with design. This hammock, the skin of the snake, contains all possible patterns, figures and forms of life. Thus, both in ritual song and through the concatenation and embedding of different patterns in woven fabric, we arrive at the representation of a composite and transmutating being, a multiple chimera that contains sequences of different beings within its almost amorphous elongated body.

Another interesting result of this process of translation between different fields of specialisation within a same cultural group is that, when we connect the different levels of relational and topographical information contained in Huni Kuin pattern, myth and song texts, we can identify versions of the mathematical formula of the Möbius string or Klein bottle, both images of the canonical formula of Lévi-Strauss. We will come back to this idea at the end of this text.

When analysing the production of patterns, Franz Boas was amongst the first to deviate attention from the meaning of separate design units to visual processes of image production, such as the phenomenon of 'split representation' in the transition of tri-dimensional to two-dimensional figures. Boas was interested in how pattern works cognitively and visually. His interest in the formal principles at work in pattern formation prefigure the reading of patterning as the manifestation of geometrical and mathematical thought processes, revealing mind-sets very different from the ones at work in the conception of pictures delineated against a stable background.<sup>16</sup>

Lévi-Strauss, when analysing Kadiwéu facial design (in Central Brazil) (**Fig. 3**), would take this analysis further, by associating the formal characteristic of 'split representation' in design with the complexities of Kadiwéu social thinking. In the asymmetric patterns of arabesques, Lévi-Strauss noted the operation of a symmetrical quadruple split along inverted axes, showing how their design followed the same formal logic of a 'game of cards'. The Kadiwéu did not possess a kinship or naming system composed of moieties, but their neighbours, the Bororo did. Lévi-Strauss suggests that in facial design, through the symmetrical patterning hidden behind an asymmetrical design, the Kadiwéu aristocrats expressed their desire for the social

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<sup>16</sup> See Gell 1998 and Belting 2011 on this topic.



Fig. 3: Photo of *kadiwéu* woman by Darcy Ribeiro (archive Museu do Índio, 1950s).

equilibrium achieved by their neighbours, the Bororo. In other words, the Kadiwéu artists imagined, by means of patterns on their faces, what the Bororo achieved in their kinship system and spatial organization.<sup>17</sup>

If the logic of the ‘game of cards’ is applied to symmetric forms, as we find in the geometric art produced by the Huni Kuin, and we describe the forms in mathematical terms, we will find variations of patterns composed of four symmetries by reflection, around a horizontal and vertical axe and around two diagonals, combined with a rotation of the order of four. When composed of rectangular meanders we obtain a central pattern that, depending on the relational network in which it is

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17 Lévi-Strauss 1955.





Fig. 4: Girl painted with *xamanti* pattern (photo by the author 1991).

inserted will receive different names: *bawe kene* (pattern of the plant squeezed in the eyes to dream with design), *xamantin*, *xantima* (**Fig. 4**), *nawan kene* (pattern of the enemy-stranger), etc.

When composed of diamond shapes, this pattern is called *inu tae txede bedu*: the jaguar's paw with parrot's eye. Four diamonds enclosed by a path in the form of a diamond form this design. Inside of it we have four 'eye' patterns. The pattern of the 'white eyed parrot', *txede bedu*, is the first to be executed by a girl when learning to weave with design. In myth this bird gained its defining features, the eyes surrounded by white, when it stole the cooking fire from its stingy owner, the cannibal Inka. In shamanistic song, the pattern is invoked to acquire the capacity of clairvoyance, described to me as the capacity of the disembodied eye, not limited by forehead or eyebrows, to see what is normally invisible. Women invoke the pattern in ritual song to visualize complex patterns when weaving (**Fig. 5**).

The diamond shape with a dot inside represents the eye soul liberated from the limitations of bodily perspective. As a design unit, by means of specific combinatory rules, this motif gives rise to several patterns. When joined in a grid or lace, the diamonds compose the pattern called cottonseed, *xapu buxe*. This pattern is used on the forehead of young girls. At this age young girls spend a lot of their time helping their mothers and other female kin with the preparation of cotton strings for weaving. The pattern refers to a strong soul for a long life. The parrot's eye, formed by



Fig. 5: Detail from a hammock called *the back of the boa*, composed of the ‘jaguar’s paw’ and ‘parrot’s eye’ motive (photo by the author).



Fig. 6: Details from beadwork with the patterns: *inu tae*, *xapu buxe* and *dunu mapu* (photo by the author).

a linear sequence of small identical diamond shapes and separated by triangles, can also be called the back of the boa snake, *dunu kate*, especially when combined with other patterns within the pattern. The triangles, in between the diamonds, are in fact cut off diamonds that continue beyond the perceived patterned surface. But as triangles they are called *baxu xaka*, scale of the *baxu* fish. The suggestion of an infinite propagation of self-similar shapes in space is a defining characteristic of the style under study (**Fig. 6**).

When the diamonds are linked to each other at the corner, in strings, we obtain the pattern ‘boa’s brain’, *dunu mapu*, or ‘intestines of the boa’, *dunu puku*. A variety of names of graphic designs refer to intestines and brains of important game or predators. The idea of a correspondence between patterns inside and outside the body has been encountered also amongst the Piro of the Peruvian rainforest by Peter Gow,<sup>18</sup> and refers to the Möbius structure of shamanic vision: the inversion and connection between inside and outside vision. The diamond motif, when iteratively and symmetrically joined in linear sequences of replication of equal elements, thus produces, alternatively, the multiplication of eye motifs or the surface of the skin of the boa. When joined at the points, the pattern refers to the interior organs of the same boa that engenders all possible forms out of its own body.

But let us come back to the diamond shaped pattern of the jaguar’s paw, composed of four interrelated, symmetrically inverted, diamonds. It is possible to associate this pattern to the Dravidian alternating namesake system (with a Kariëra inflection), which presides over Huni Kuin social organization. This namesake system is composed of a limited stock of names and follows gendered lines of transmission. A person’s name attributes him or her a place in the intricate web of kinship terms and determines in which section one should find one’s marriage partner: in the same generation section of the opposite moiety and ideally in one’s own village.

Recently, Mauro Almeida, a colleague working with ethno-mathematics and kinship patterns, noted that the same numbers, 2, 4 and 8, that play a central role in Huni Kuin mathematics and weaving, also have a central role in their social organization.<sup>19</sup> Thus we could, effectively, read patterns of the family of the ‘jaguar’s paw’, as well as those composed of four rectangular meanders, with their four fold symmetrical inversions of the ‘game of cards’, not only in terms of moiety complementarity, as suggested by Lévi-Strauss for the Kadiwéu, but in terms of a formal language to show the proper relations between four equally opposed and complementary naming and marriage sections, connected through marriage.

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18 Gow 2001.

19 Almeida 2019.



Fig. 7: Txana Xane and Sebidua, brothers and owners of song from the Purus River (photo by the author 2014).

Instead of design units or specific patterns differentiating social groups and moieties, as we have for the Jê peoples,<sup>20</sup> Huni Kuin women explained to me that all the patterns were part of ‘one and the same big design’ (*kene habiaski*). This big design, however, is composed of many pathways, patterns in a pattern. Thus I soon came to the conclusion that the labyrinthine patterns women produced were not about marking off internal differences, but, to the contrary, meant to show the multiple relations and iterations that compose any single being (**Fig. 7**).

The ‘jaguar’ (*inu*) moiety is composed of the sections ‘tapir’ (*awa*), a terrestrial being, and ‘lightning’ (*kana*), a sky entity; the ‘brilliance’ (*dua*) moiety is composed of the sections ‘peccary’ (*yawa*), a terrestrial being, and anaconda (*dunu*), a water being. Prescribed marriage occurs among the terrestrial sections of opposed moieties or between the sections of water and sky people. When oblique marriages do occur, however, they connect, respectively, earth and sky people, or earth and water people, people belonging to contiguous topologies that should normally be kept separate. Yet this is exactly what design seems to do, at least this is what we learn from the

<sup>20</sup> Vidal 1992.

myths of origin. This virtual reality of connectivity is evoked and thus turned present in ritual song. In it we recognise the important Amerindian cosmological figure of potential affinity.<sup>21</sup>

In myth we learn that the art of design and much other exogenous knowledge is the result of secret love affairs with beings situated either ‘too far’ from or ‘too close’ to ego. Design is about trying to find equilibrium between the ruling symmetry of woven patterns and the systematic disturbance of this symmetry by the introduction of an aesthetically much appreciated asymmetry. It is the asymmetric detail in a pattern that connects it to another pattern, thus engendering smooth transformations from one design into another. Asymmetry stands for the dangerous but productive transgression of the appropriate distances between people, nonhuman beings and locations. Transgressions of this kind are constitutive of the initiation in the art of weaving with design, mastered only by a few women.

To be able to conceive and produce complex patterns, a woman has to pass the ordeal of the ritual killing of a boa constrictor and the subsequent incorporation of its *xinan*, thought-spirit, during the period of her apprenticeship. ‘To know’ means to partially become what is known; to become one with the one who knows and transfers his knowledge. The art of weaving with design involves an initiation ritual and reclusion that resembles in every respect the initiation of men in shamanism. A master of design (*ainbu keneya*) becomes two in one: a human with the power of vision of the boa snake. During the period of seclusion she also has the voice of the boa, with the power to kill. This excessive identification, through consubstantiation, is dangerous and only lasts as long as the girl is secluded.<sup>22</sup>

The presence of design marks not only humans, but also certain animals and plants with patterns on their skin, as well as inhabitants of the water world and the sky. All these beings possess the power of metamorphosis. Design does not only cover the bodies with its maze or net, closing them off or opening them to outside influences, but, most importantly, traces connections between bodies and different topographies. From ritual song, we learn that the inhabitants of the sky are connected to those who live on earth by means of the rainbow, called the path of the dead, *nawan bai*. This was one of the first designs to appear in the world when the ancestor Yube became the moon and received from his mother her cotton strings of different colours to climb up into the sky. The stripes that cross a patterned surface in woven fabric refer to this rainbow motif. Labyrinthine patterns can act as maps

21 Viveiros de Castro 2001. On the relevance of this relational concept for the Pehuenche of Southern Chile Bonelli 2019, 67 notes “Potential affinity indexes a relational domain that exceeds interspecies borders and involves intensive and transformative relations between humans and animals, plants and spirits”.

22 Lagrou 1998 and 2007; Keifenheim 1998.

for the mental eye lost in a world of images, but also as a trap, when the eye cannot find its way out of the maze that separates the worlds of the living and the dead, two sides of a same world, invisible to one another.

If the living and the dead have different perspectives on almost everything, what connects them is design. The most important characteristic of Huni Kuin patterns, the kinetic instability of the relation between figure and counter figure, makes visible the relativity of perspective. Thus, although human and spirit are supposed to see as figure what is ground to the other, when looking at a labyrinthine design, it is impossible to keep the two perspectives separated. Thus design establishes the path from one side to the other. To see and to be looked at are interrelated processes in the Amazonian universe. For this reason, when mourning or in reclusion, having to hide from the view of spirit beings, people cover themselves in black genipa paint, to become invisible for them. For the same reason people who are very ill will avoid sleeping in hammocks with design.

Most myths related to the origin of design refer to the transformations of the ancestor Yube who, in one event, became the moon after having been marked with design by his sister; while, in another, he became the anaconda. As we saw, the anaconda was engendered by the combination of Yube with his wife Sidika, when they were lying in their hammock with design and the great deluge covered and transformed them. The anaconda is therefore a double, androgynous being. Thus we understand why the agency of design consists in attracting. Sexual attraction is the prototype of other capturing strategies, used in hunting and war.

An important diacritic in the naming of motifs in a woven fabric is the difference between lines that touch (which are *detxia*, or *xantima*) and others that remain open (*medasua*). When painted, the patterns on the skin are composed of parallel lines that should be kept separate, while following the asymmetrical curves of body and face; these lines are connected to other lines “that should touch”. “No lines should be left open”, a woman explained to me. The art in composing a labyrinth of lines, to be closed only at the end, is to connect the right lines. If not you destroy the kinetic effect of the pattern.

The lines that touch hint at this dual character of Yube, where the connecting line means the encounter of male and female. The combination of the *xantima* (to touch) motif with *xamantin* (to contain), an important weaving pattern, was described to me on several occasions as referring to sexual intercourse: “to place on the legs, to join”. In the fabric reproduced below the enveloping motif with the big path that encompasses the smaller path is called *xamantin*. The fill-in lines of *xantima*, *to touch*, refer to the sexual encounter.

When, during my fieldwork in the 90s, I asked them for the name of a pattern, women specialists would systematically answer me with a long sentence; teaching

my unaccustomed eye to follow the pathways and multiple relations of which their geometric designs are composed. People frequently disagreed over the appropriate name or description of a pattern, because of the varying number of meanders, angles of 90 degrees, and the possibility to enter the pattern following different paths – such as the ‘path of the white eyed parrot’, or that of the ‘crocodile tail’, of the ‘tail of the scorpion’, or the ‘foreigner’s path’, ‘the path of the esperai vine’ etc. The possibility of entering the design from different perspectives thus transforms a name into a narrative of the movements of the eye in the labyrinth of lines that compose the patterned space. Pattern does not depict forms but relations.

Most of the patterns are composed of rectangular meanders with different numbers of turnings, called *tabaxu*. The number of angels of these spirals and the varied relations of translation and inversion between them, generates an apparently infinite number of motifs. The more turnings a meander has, the more complex and difficult becomes a design. *Xunu kene*, the design of the big and beautifully round shaped lupuna tree, with its big crown of leaves, is considered to be the most complex of them all. The lupuna tree is the tree of life and has several names: ‘tree of design’ (*kenen hi*), ‘tree of knowledge’ (*xinan hi*), ‘tree of Yube’ (*Yuben hi*). From its roots the fathers and grandfathers sculpt the stools for the rite of passage of their children, while mother and/or grandmothers paint them.

The relation between symmetry and asymmetry; the engendering of movement and the perception of profundity inside the patterned surface, through the interplay of encompassing and encompassed patterns; and the intertwined and reversible character of interior and exterior, are geometrical movements that lead us to the mathematical formula of the Möbius string or Klein bottle, both images of the canonical formula of Lévi-Strauss.<sup>23</sup>

This oscillating dualism implies the possibility of different forms to transform into each other. The movement of other-becoming, as expressed in the shamanistic songs that accompany visionary experience, is to systematically point towards the in-betweenness of all being, related to processes of becoming. Shamanistic song and graphic patterns point in the same direction. That which has been ingested will ingest its ‘predator’ in turn. That which has been encompassed will encompass and back again. There is a movement of inversion between inside and outside, between what was ingested and what ingests, the enunciator and ‘that which is said’, producing a complex figure of unfolding, multiplication and other-becoming, and the undoing of this process, for the duration of the experience. We find ourselves in an Amazonian shamanic universe where to see and to know means to partially ‘become

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23 Lévi-Strauss 1958; Lévi-Strauss 1985.

other'.<sup>24</sup> The idea that the point of view is located in the body implies that vision is understood as a tactile engagement between seeing and being seen. The eye touches and is encompassed by the surfaces it explores.

The logic of visualizing pattern in this universe, a pattern in constant and kaleidoscopic movement of metamorphosis, where spirals unfold between encompassing and encompassed patterns, brings us to the principle of the bottle of Klein, where, through an alternating inversion between figure and counter-figure, and a systematic folding and unfolding of positions, the separation between interior and exterior is suspended.<sup>25</sup>

If we read the myths of origin of design in this key, we come to the surprising conclusion that they can be read along the same twisted lines of the canonical formula of Lévi-Strauss as we proposed for the graphic style and the ritual songs. Lack of space will oblige us to be short, but the formula can be stated as follows:

$$F_x(a) : F_y(a) :: F_y(b) : F_b^{-1}(x)$$

a = marriage, sexual relation  
 b = lack of reciprocity, undoing of the alliance  
 x = too close  
 y = too distant

The formula reads as follows: The function 'too close' (x) in the choice of a sexual partner (a) is to the function 'too distant' (y) in the choice of a sexual partner (a); as the function 'too distant' (y) is in the 'undoing of marriage alliance' (b) in relation to the function 'travestism' (excess of reciprocity) (b<sup>-1</sup>) of the one who is 'too close' (x).

The myths or parts of myths of origin of design presented here are:

1. Yube the moon
2. Muka and the origin of design
3. The deluge: revenge of the fish people (when Yube was originated)
4. Napu ainbu, the man-woman

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<sup>24</sup> Taussig 1993.

<sup>25</sup> For a similar phenomenon, among the Piro of Eastern Peru, see Gow 1999, 237.



### 1. Yube the moon:

Too close, incestuous brother dies

The first myth about the origin of the moon counts how the sister of Yube, to discover the identity of her nightly visitor, used genipap to mark his face. The founding relation in this version of the classic Amerindian myth of the origin of the moon is that between brother and sister, who, because of having been too close, are at the origin of celestial temporality, the phases of the moon, and the periodicity of menstruation. The sister of moon is responsible for having made visible the rules that govern reproduction. Once she marks the face of her nightly visitor with genipap paint, impossible to be washed off, a hidden relation has been revealed and thus been made impossible. Ashamed, Yube decides to die. The marks on the face of the moon can be considered to be the first design.

### 2. Muka and the origin of design:

Too distant, animal lover is killed

This is one of the existing versions of the myth of origin of how women learned the art of design. The ancestor Muka would go to her garden every late afternoon. There she would meet the boa, in her eyes, a beautiful young man. He would wrap himself around her body and, with his tongue close to her face, teach her the secrets of design. When her husband discovers the affair, he kills his rival.

### 3. The great deluge:

Revenge of the fish people

Too distant, fish people take revenge

In this myth, the fish people produce the great deluge to take revenge against the humans. The ancestor Ixan had given in to the calling of the song of a toad at nightfall and went to life with the fish people. His abandoned wife was brokenhearted. When the fish people allowed him to visit his kin, his former wife caught him and didn't let him go any more. The fish people were received without food or drink. When back home they produced the great deluge. Many artifacts were transformed into animals and a couple lying down in their hammock with design became transformed in the anaconda.

#### 4. Napu ainbu:

Excess of reciprocity with what is too close

The ancestor Muka bukanku had learned the art of weaving with design from Sidika, the boa constrictor Sidika, whom she addressed as 'sister in law'. Every late afternoon she would go to her garden where she set down with the boa and learned to weave. But she lived alone with her son and had no daughters to teach her art to. Thus she decided to teach her son, whose name became Napu ainbu, Napu woman. When she died and he went to look for his distant kin, they took him for a woman, because he was covered in design and dressed as a woman. As a transvestite, he accepted sex with a man who fell in love with him. He became pregnant but died because he had no birth channel. His body had not been prepared to give birth.

The myths of the origin of design are related to each other by means of transformations and inversions around the theme of appropriate and inappropriate distances between kin, between humans and non-humans and between the living and the dead. They are a comment on the meta-communicative, iconic language of the art of patterning that constitutes a relational topography, showing how proper distances should be kept and created, while showing, at the same time, how these distances collapse during the transformational processes of other-becoming that characterize the becoming of all personal biographies of human beings in the Amerindian relational ontology under study that posits a profound transformation of identity when a person dies.

In the case of the Huni Kuin, the 'thinking body', with its capacity of sensuous agency and cognition, will start to lose its souls and its agentive and cognitive abilities, one by one, in the process of illness. A body only releases souls when sleeping or when ill. Death is the conclusion of this process of other-becoming, a process during which, after losing its animating souls, the body will disintegrate and transform into earthworms while the souls will disperse and adopt different forms. One of the souls, the one living in both the eyes and the heart, will go to live with and marry the Inka cannibal Gods. He himself will become an Inka God after having been devoured by them. Other souls will wander for a while on earth as long as the body and memories exist. The paths drawn by design prefigure the journey of body and soul during and after life.

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