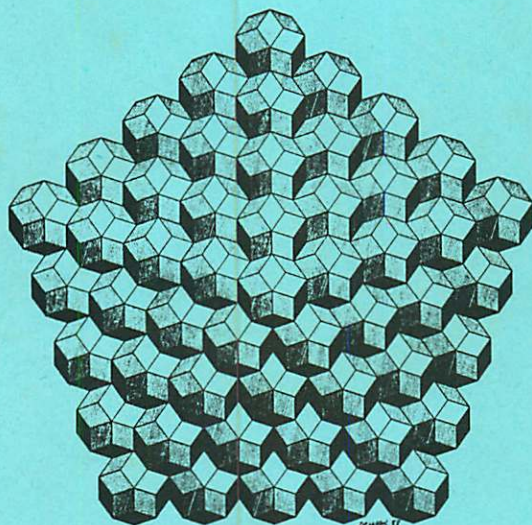


Symmetry of STRUCTURE

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Abstracts

I.



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Symmetry as a Cultural Expression in Some Brazilian Indian Tribes

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Introduction

Brazil counts nowadays with about 200.000 indians divided in 150 different tribes. Each tribe with its own culture and many of them with no contact among themselves. They are very rich in handicraft and corporal paintings, that is where symmetry appears with strong characteristics as part of the esthetic sense.

I chose three of these tribes to show this symmetry: Tapirapé, Kaxinawá and Kadiwéu.

The handicraft is done normally of straw braid wood, feather, painting, pottery, cotton weaving, etc. The corporal painting is basically and almost always done with two colors: the "urucum" red and the green "genipapo" black. The drawings are well elaborated and done in the body with a bamboo stiletto. This job is always done by the oldest women.

I am going to use an international notation to characterize the symmetry: translation, rotation, reflection and "glisso" reflection.^[3,4]

1. Tapirapé

The Tapirapé tribe, in our days, has got only one village with 270 indians and is localized in central Brazil, alongside the Tapirapé river, affluent of the Araguaia, in Mato Grosso state. They are former indians, that is, not warriors, and have their survival based on agriculture and fishing. Their culture is rich in feather, strawbraid and brazilwood handicraft. All the time symmetry is found in these manifestations, but only the reflection. The importance of the duality makes reflection to be a strong reason of esthetic. We can see that in the corporal

paintings¹⁶.

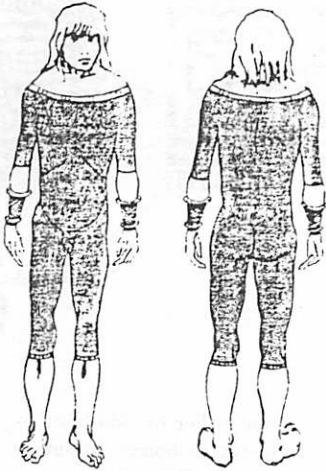


FIG. 2 — Pintura de corpo masculino ruaplani.

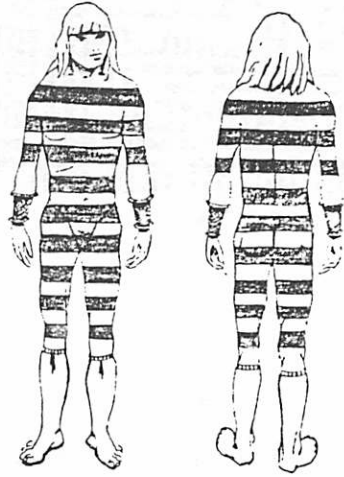


FIG. 3 — Pintura do corpo masculino spibausa.

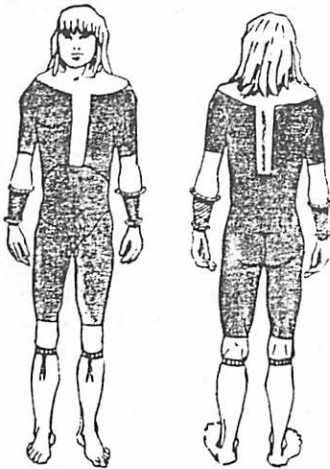


FIG. 5 — Pintura de corpo masculino konaschaki.

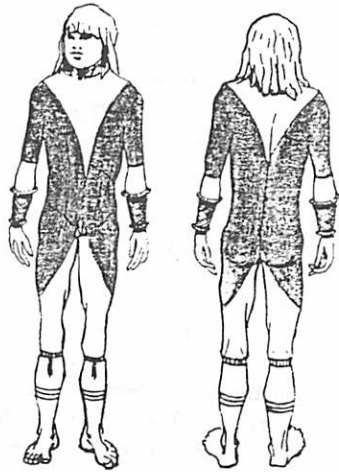
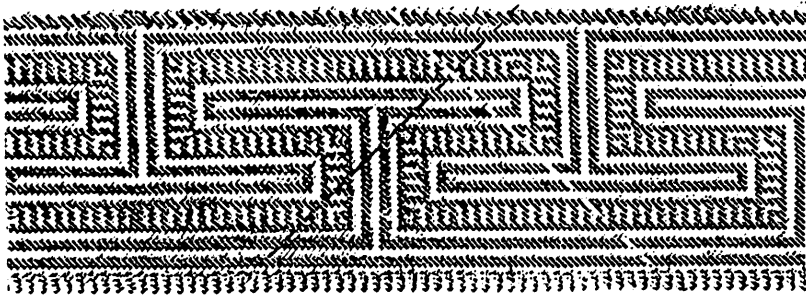


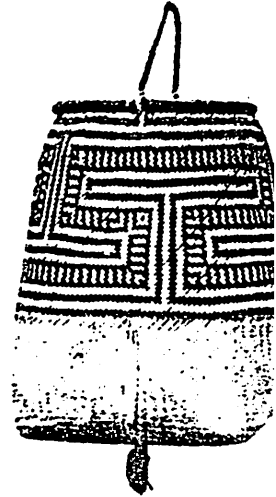
FIG. 4 — Pintura do corpo masculino chankoska.

reflection

That are done to some commemorations as man and woman initiation, birth of a children the parents paint themselves), death, etc. The duality is also found in basket manufacturing



translation, reflection and rotation - band



and also in games as the string games. This game is done either by adults or by children mainly in rainy days, when they are obliged to stay at home. About 60 different figures were registered, all symmetric by reflection^[1]. The reflection axis can be vertical or horizontal. When braiding the string, the person, knowing. The kind of axis the figure has to have, repeats with one hand what was done by the other in the case of vertical axis, and in the case of horizontal axis what was done by the two back fingers must be repeated by the two front fingers.

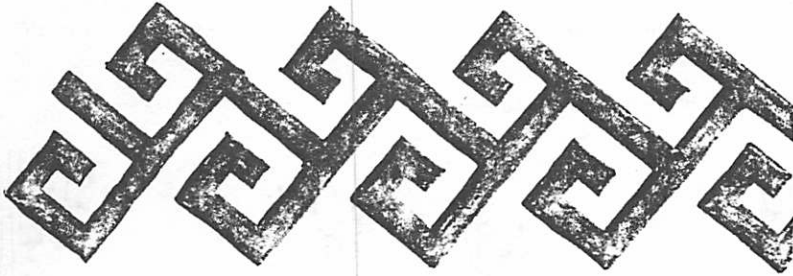
The string game appears in many Brazilian tribes that supposedly had never had any contact.

2. Kaxinawá

The Kaxinawá indians live in Acre State and Amazonas State by the Peruvian border. Their population is of 2,500 indians, divided in 11 villages. Their economy is based in rubber extraction and Brazil nuts collection. This economy is the result of the contact with the whites, who led them to develop this economy for their survival. Their most significant handicraft is the cotton weaving with strings colored with roots, "urucum" or "genipapo".

The handicraft pictured is from the Kaxinawá village of the Jordão River

which holds 800 indians. The looms are done of more than two-meter high pieces of wood. It is an exclusively feminine job, taking a long time to make each piece. As symmetry, only the reflection appears, but there is also a double reflection. Because of the proximity with Peru we find in their drawings a very large *Inca* influence:



reflection and rotation - band

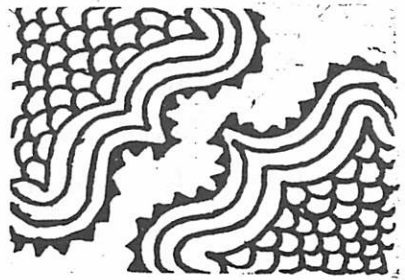
3. Kadiwéu

(In collaboration with Prof. Rodyney C. Bassanezi)

The Kadinawéu are indians who inhabit one only village in Mato Grosso do Sul State by the Paraguayan border. They have got a population of 1.100 indians in an extense territory delimited by the government as a reserve. They were warriors, but nowadays they have a reaveful contact with the white population. What calls attention is their very elaborated corporal painting, that has appeared in ethnological books since 1.540. The contrast between their painting, also done with Green "genipapo" and the ones of other indians is that the Kadiwév prefer curved lines to straight lines.



reflection with perpendicular axis - Pmm



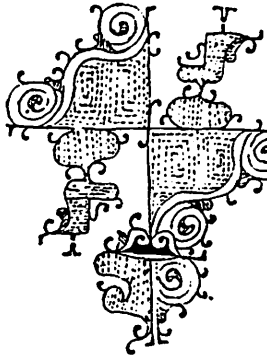
band-translation and "glisso" reflexion

The symmetry is more elaborated, appearing all the kinds. and the corporal drawing has a pure esthetical finality. They are done by the oldest women and do not have a figurative representaion. The fact that only the women are responsible for the corporal paintings appear very early as the anthropologist Darcy Ribeiro^[2] proved in a set of drawings done by children of both sexes which shows that the boys make figurative drawings and the girls non figuratuve ones. The richest drawings are the ones of the face where normally appears a reflection on the mouth

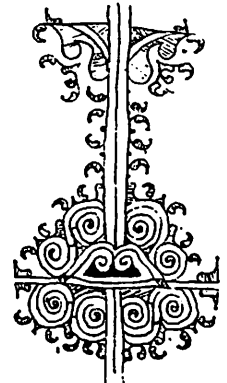
are and 180° rotation on the nose region



rotation



rotation



reflection and rotation

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