

# KNOWLEDGE TRANSMISSION AND CHANGE IN KAIABI (TUPI-GUARANI) BASKETWORK, SOUTHERN AMAZONIAN REGION, BRAZIL



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MSc in ETHNOBOTANY



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In association with:

- THE DURRELL INSTITUTE OF CONSERVATION AND ECOLOGY - DICE
- THE ROYAL BOTANIC GARDENS, KEW



Canterbury, England

September, 2003

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“...sem isso a gente não é nada... não adianta a luta política. Se a gente perder o nosso conhecimento, se os nossos filhos não souberem trançar uma peneira, a gente não vale nada...”

“...without this we are nothing... there is no point for the political struggle. If we lose our knowledge, if our kids won't know how to weave a basket, we worth nothing...”

Mairawê Kaiabi, President of ATIX  
Posto Indígena Diauarum, Xingu Indigenous Land  
July, 2002

*This work is dedicated to the Kaiabi  
People for their struggle to maintain  
their culture and identity alive.*

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## ABSTRACT

This project represents a continuation of work that has been carried out in the last five years at Xingu Indigenous Park, southern Amazonian region, Brazil. It was developed in collaboration with the project “Development of Sustainable Economic Activities and Management of Natural Resources” of Xingu Park Program, Instituto Socioambiental (ISA, Brazilian NGO), in partnership with Xingu Indigenous Land Association (ATIX). It involves the Kaiabi people, speakers of a Tupi-Guarani language. They have been transferred from their ancestral territory to Xingu Park between 1950 and 1966. Xingu Park’s cultural and environmental characteristics are different from those of their ancestral land. Kaiabi men weave beautiful baskets, which have graphic patterns with symbolic meanings. As a result of concern about the loss of the knowledge associated with their basketry, Kaiabi representatives, in collaboration with ISA’s team, have been developing activities for cultural rescue and management of natural resources used in the basketry production. The main objective of this work was to analyse the past and present mechanisms of knowledge transmission in relation to basketry weaving amongst the Kaiabi society. This research will help to identify and implement participatory strategies for conservation of this knowledge. The methods applied included participant observation, collection of myths and stories and semi-structured interviews with all the male population over 15 years old in two villages: Capivara and Tuiarare. The study included 45 participants, 25 in Tuiarare village and 20 in Capivara. Amongst them, 20 people weave baskets. There is only one expert, living in Capivara village, who weaves and knows the names for most of the Kaiabi repertory of graphic designs. In Tuiarare, fewer people weave baskets, but they use different graphic motifs. In Capivara, more people weave, but they weave simpler baskets. The main changes that have been happening in Kaiabi basketry weaving dynamics are: 1) they are beginning to learn later than they used to do in the past; 2) there was a shift in the social factors leading to the apprenticeship of basketry weaving; 3) the main factors leading to basketry learning today are related to the reinforcement of cultural identity and the possibility to commercialise the baskets for the external market; 4) there is a tendency to simplify the diversity of patterns woven; 5) there is a tendency to simplify or generalise the names given to the basketry designs; 6) there is a critical lack of natural resources used to produce the baskets, mainly the arumã (*Ischnosiphon gracilis*, Marantaceae), which occurred in the ancestral land and is scarce within the Xingu Park region. Shamanism seems to play an important role in knowledge creation and on the deeply cosmological meanings of basketry designs encoded in language. Nowadays, Kaiabi people are implementing new ways of perpetuating their knowledge on basketry weaving through community-based projects, participatory management of natural resources, workshops and special educational projects linked to the local indigenous schools. A strategy for the continuation of this work would be to accompany and evaluate these initiatives in order to document and subsidise alternative directions for the conservation of a cultural patrimony which is critical for the maintenance of their own cosmology and identity.

# 1. INTRODUCTION

## 1.1 TRANSMISSION OF INDIGENOUS KNOWLEDGE IN TIMES OF SOCIAL AND ENVIRONMENTAL CHANGE

In recent decades, scholars, politicians and activists have emphasized the necessity of recognizing, documenting and valorizing indigenous knowledge systems for the sustainability of both cultural and environmental heritage. According to Zent (2001), in the last 50 years the study of indigenous knowledge has gone through several distinct developmental phases, defined by research foci, methods and objectives.

Zent identifies one of these stages as “processual studies of indigenous knowledge”. Concerned with the rapid erosion of indigenous knowledge systems everywhere, researchers have begun to focus on the “dynamic or processual” aspects of indigenous knowledge systems: *their “creation, transmission, transformation, conservation and erosion or loss”* (Zent, 2001 : 12). Hunn (2002) affirms that the production and reproduction of indigenous knowledge systems need to be understood if conserving these bodies of knowledge is considered a critical resource for human sustainability.

The cultural transmission of knowledge in indigenous societies happens in an informal way outside school, in the reproduction of daily life. Learning is a process where information is shared by direct experiential and observation (Zarger, 2002, based on various authors). We could say then that environmental and technical knowledge in traditional societies is not “taught” in a western sense. The use of words or oral transmission is not so important as practice and experience. It is the concept of “learning by doing”. We could also add “learning by living”, to highlight the importance that the social life has in the acquisition and transmission of indigenous knowledge (Crickmay, 2002).

Stross (1969), mentioned in Zarger (2002), affirms that children’s acquisition of knowledge begins very early, concurrent with language learning. By the age of 12-14, one person is expected to possess a significant body of knowledge that will show his or her adult competency in traditional environmental knowledge (TEK). Hunn (2002), elaborating on this assertion, states that if acquisition of environmental knowledge is

like first language learning, the deprivation of this acquisition at a critical age may last throughout adulthood.

Below, I summarized the main issues involved in indigenous knowledge dynamics and transmission based on various authors (Guglielmino *et al.*, 1995; Donald, 1998; Crickmay, 2002; Nabhan and St. Antoine, 1993; Zent, 1999, 2001; Hunn, 2002; Ross, 2002; Zarger, 2002; Wilbert, 2002; Wyndham, 2002):

- The primary modes of information transmission are informal, experiential and based on observation (“learning by doing”);
- Since culture is mimetic in its origins, non-verbal cognition and communication, besides language, are important factors in knowledge transmission;
- Knowledge is acquired in early stages of childhood, concurrent with language acquisition;
- Knowledge is acquired through participation or apprenticeship in daily activities;
- Knowledge is transmitted within the same family in a vertical way (parent or grandparent to child) or horizontally, between socially-related groups or more distant relatives (sibling or relative to child);
- Children’s plays often imitate adult roles and hence have an important effect on knowledge acquisition during childhood;
- Indigenous knowledge systems are dynamic and changeable according to changes in the social, cultural and environmental spheres;
- The availability of natural resources and the time spent in nature, as well as the spiritual linkage with the land, are crucial in processes of learning and transmission of TEK;
- Spiritual and religious values are embedded in environmental knowledge and play important roles in environmental decision-making processes;
- Shamanism plays an important role in knowledge creation and reproduction, as well as in the link between community and the spiritual domain;
- Knowledge is not distributed uniformly within the community. Psychological traits and the inherent facility to learn, as well as social incentives, vary from individual to individual;
- There must be innate predispositions to acquire technical and environmental knowledge by indigenous peoples;

- Mnemonic devices, demand and reinforcement of skills related to the environment or to artefact production are important factors related to the maintenance of indigenous knowledge systems (“use it or lose it”);
- There is a sharp distinction in tasks and skills learned by men and women, according to their social role in the community.
- Girls and boys tend to learn tasks from parents, siblings and grandparents of the same gender.

Processes related to displacement of indigenous peoples from their traditional territories or to changes in land tenure systems or geographical occupation can lead to significant changes in the social and environmental systems and in the dynamics of indigenous knowledge systems (Chatty and Colchester, 2002). However, the effects of geographical displacement (which often brings sudden and significant social and environmental changes) on the social structure and on knowledge transmission amongst indigenous societies are still poorly understood and accompanied through time.

According to Zarger (2002), there is much more information available on what indigenous children and adults know than how they come to know it. While many educational programs that include appropriate curricula and claim to be culturally and environmentally sound are being implemented around the world, there is a huge lack of information on how people learn and transmit their own culture, a critical issue in the design and implementation of any formal schooling and cross-cultural educational program. As he concluded, better understanding of the mechanisms for traditional transmission of knowledge can be used to strengthen pedagogical modes in the traditional education system or “*try to replicate them in more formal education systems if necessary*” (Zarger, 2002:600”).

## **1.2 THIS WORK**

My master’s research represents the continuation of a broader work on education, cultural rescue and commercialisation of indigenous arts and participatory management of natural resources, which began five years ago and in which Kaiabi people are strongly involved. In reality, the communities and I became involved together in a

process of documentation and research on basketry weaving. It was developed in collaboration with the “Development of Sustainable Economic Activities and Management of Natural Resources” project of Xingu Park Program, Instituto Socioambiental (ISA, Brazilian NGO), in partnership with Xingu Indigenous Land Association (ATIX), in which I have been working in the last five years.

The Kaiabi people from Brazilian Amazon have a repertory of baskets made from various natural resources and used for different purposes. The baskets are made by men for women to use in food preparation, cotton spinning and food and object storage. They weave painted baskets made of “arumã” fiber (*Ischnosiphon gracilis*, Marantaceae) using the twill-plaited technique, with a repertory of designs represented, which have both social and cosmological meaning (Ribeiro, 1986; Athayde, 1998).

Today, many Amazonian indigenous groups are concerned with the loss of knowledge associated with the environment and with artefact production. As a consequence, they<sup>1</sup> have been implementing new ways to rescue, conserve and, above all, ensure that this knowledge is transmitted to the younger generations. These initiatives, most of them developed through community-based projects, have been poorly documented and discussed.

Some critical issues related to basketry production amongst many indigenous societies today are the problem of knowledge loss due to changes in the ways in which technological, environmental and spiritual knowledge systems are transmitted. If knowledge of a technique is lost, a more subtle and hidden part of the culture goes together as well, for technique, symbolism and cosmology are interwoven, as in a basket.

In this work, I focus on knowledge transmission related to Kaiabi basketwork, specifically to the twill-plaited painted baskets. I analyse the ways in which Kaiabi men learn to weave baskets and the social context in which this apprenticeship takes place. My analysis is comparative, in which I try to reconstruct the past reality before the transfer of the group to Xingu Park and to compare this with what is happening in the villages today. As a result, I discuss which were the possible effects of the geographical displacement of Kaiabi people in their social organisation and in the present patterns of knowledge transmission and distribution. I also consider the present initiatives of Kaiabi

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<sup>1</sup> With external advising and supporting, in lesser or greater extent.

people<sup>2</sup> for the “cultural rescue” of their knowledge of material culture, such as through specific projects, indigenous schools, didactic books and workshops. This research will contribute to the great debate on the best ways to promote the conservation<sup>3</sup> “in situ” of indigenous knowledge systems using a participatory approach.

The main questions I intend to answer in this study are:

- 1) What are the effects of geographical displacement on knowledge transmission amongst indigenous societies?
- 2) What are the past and present mechanisms of learning and transmission of knowledge associated with basketry weaving in Kaiabi indigenous society?

General aim:

- To contribute to the understanding of the dynamics of indigenous technical knowledge generation and transmission in an Amazonian indigenous group.

Specific objectives:

- To analyze the ways in which the geographical displacement of Kaiabi people from their ancestral land has produced impacts in their social organization, access to natural resources, and consequently, in patterns of knowledge transmission;
- To identify the ways in which the knowledge associated with Kaiabi basketry has been generated, distributed and transmitted between two Kaiabi communities;
- To contribute to the process of cultural rescue of the knowledge associated with Kaiabi basketry.

The results of this research will be applied in Kaiabi educational activities and community workshops for cultural rescue and knowledge conservation. Teaching manuals, both in the native language and in Portuguese, are being produced to be used in village indigenous schools.

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<sup>2</sup> With the support of ATIX, their local organisation and of ISA, a Brazilian NGO, both described in the next section.

<sup>3</sup> Understanding the word “conservation” not as something static, but as a dynamic process subject to changes and reorientation, in the same context as biodiversity conservation.

## 2. ETHNOGRAPHIC BACKGROUND

### 2.1 THE KAIABI PEOPLE AND THEIR ANCESTRAL LAND

The Kaiabi<sup>4</sup> people speak a language of Tupi linguistic stock, in the Tupi-guarani family. Their ancestral land comprised a vast territory (nearly 3 million ha) located at the northwestern portion of the Tapajós River watershed. Before contact with the Portuguese and Brazilian non-indigenous societies, they had been organised in two main groups, according to the region occupied along the Tapajós' tributaries: one in the Teles Pires, Paranatinga or São Manuel (*Wyrasing'y*, in Kaiabi, which means white heron river) and the other living in the Rio dos Peixes (or in Kaiabi *Tatuy*). These two groups had kinship and economic links, but lived more or less separated by a small mountain chain<sup>5</sup>, in which there was a path leading from one side to the other (Grünberg, 1970).

The Kaiabi ancestral region is environmentally diverse, with a mosaic of different ecosystems represented: from tropical rainforest with Brazil nut<sup>6</sup> trees to savannas in different structural physiognomies and gallery forests.

The social organisation before the 1950's, was based on nuclear and extended families living in small villages in which a great chief, often an old man<sup>7</sup>, was the central authority (Grünberg, 1970). The Kaiabi, as with many other Tupi-guarani groups, have an uxorilocal post-marital residential system, which reinforces the affinity between fathers-in-law and sons-in-law (Senra, 1999).

The economy relied mainly on agriculture, fishing and forest extraction. The Kaiabi have a sophisticated polycultural agriculture including varieties of manioc, peanuts, yams, maize, sweet potatoes, bananas and other crops (Silva, 2002).

As with many Amazonian indigenous groups, warfare was an important component in the Kaiabi social system prior to "pacification" and to the displacement

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<sup>4</sup> Also called Kayabi, Kajabi, Caiabi, Cayabi. The name, that does not possess a special meaning, seems to be a denomination given by the Apiaka people to the Kaiabi in the past. The French traveller Francis de Castelnau mentioned for the first time the name "Cajahi" in one of his reports, based on a conversation with one of his Apiaka informants (Castelnau, 1850, cited by Grünberg, 1970).

<sup>5</sup> Known as "Serra dos Caiabis".

<sup>6</sup> *Bertholletia excelsa*, LECYTHIDACEAE.

<sup>7</sup> This person was named "*wyriat*" (literally, the one who takes care of the place).

from their original land<sup>8</sup>. The main Kaiabi festival, “Jawotsi”, is related to war, where enemy skulls were used as trophies by men to celebrate war victories (Travassos, 1984).

According to Senra (1999:15) “...the Kaiabi conceive the cosmos as divided in different superposed layers, inhabited by an infinity of supernatural beings or spirits”. There are the lords or owners of the animals, the dangerous “anyang” and “mama’e”, who can cause diseases and steal people’s souls and the “ma’it”, the shamans who live in the heaven. There are also the ancestral mythical heroes, who taught the Kaiabi everything they know.

Shamanism is a fundamental aspect of Kaiabi culture. They are the intermediates between the natural and the supernatural world. The Kaiabi shamans can be men or women, but the most powerful are men<sup>9</sup>.

Kaiabi material culture has been changing over time due to the transfer from their ancestral land to Xingu Park and to the contact with other indigenous peoples and with the non-indigenous society (Athayde, 1998; 2000). Friedl and Georg Grünberg (1967) wrote a comprehensive paper on Kaiabi material culture based on fieldwork carried out by Georg Grünberg in 1966 between the Kaiabi who lived at Rio dos Peixes.

## 2.2 THE TRANSFER TO XINGU PARK

According to Grünberg (1970), in 1922 the Brazilian agency for indigenous peoples<sup>10</sup> (SPI) established the first indigenous post, called Pedro Dantas, for the pacification and protection of Kaiabi people in the Teles Pires river region. In 1941, another post was constructed on the right margin of the Teles Pires<sup>11</sup>. The Kaiabi, less aggressive at that time than during the first contacts, began to maintain relationships with the post and in 1942 a group of Kaiabi moved to live near by.

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<sup>8</sup> The main groups with whom the Kaiabi used to fight were the Bakairi, the Munduruku and the Apiaka (Grünberg, 1970).

<sup>9</sup> The last great shaman was Prepori, a leader who participated in the Kaiabi transfer to Xingu Park and who died in 2000.

<sup>10</sup> At that time called SPI, Service for Protection of Indigenous Peoples, now FUNAI, National Foundation for the Indigenous Peoples in Brazil.

<sup>11</sup> First called Teles Pires indigenous post, afterwards called Caiabi indigenous post.

At the end of the 19<sup>th</sup> century and at the beginning of the 20<sup>th</sup>, rubber<sup>12</sup> extraction was the main economic system at the Tapajós' watershed<sup>13</sup>. The conflicts between the Kaiabi and the rubber tappers happened between 1899 until approximately 1927. In 1942, world politics stimulated again rubber exploitation in the Amazonian region. From 1955 until the almost total transfer of the Kaiabi to Xingu Park, many Kaiabi men worked in the rubber tapping industry (Grünberg, 1970).

In 1943, the “Fundação Brasil Central”/FBC (Central Brazilian Foundation) was created by the government to colonise the region comprised by the upper courses of Araguaia, Xingu and Tapajós rivers. The FBC expedition known by “Roncador-Xingu”, commanded by the Villas-Bôas brothers<sup>14</sup>, met the Kaiabi people in 1949. At that time the Kaiabi were in a very difficult conflict situation, with their land being increasingly invaded and occupied by the rubber tappers. The SPI was incapable of ensuring the cultural survival of Kaiabi people, and many times collaborated with the rubber tapping industries in the recruitment of the indians to work for them (Senra, 1999).

The Villas-Bôas brothers presented an alternative to the Kaiabi people of moving out from their ancestral land to the Xingu Indigenous Park. Grünberg (1970:53) identifies three decisive factors which led to the Kaiabi migration eastwards:

1. the strong pressure and hostile contacts with the rubber tappers, which got worse through the malfunctioning of the governmental institution for the indigenous peoples “protection”;
2. the previous consent given by the Kaiabi people to move into a new area;
3. the leadership of Prepori Kaiabi on one hand and the strong personality of Cláudio Villas-Bôas on the other, who established the organisational bases for the transfer of the group.

The transference to Xingu Indigenous Park occurred gradually from 1950 to 1966: the Kaiabi families travelled by boat, by foot and in 1966, the last group went from Teles Pires and Rio dos Peixes by plane.

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<sup>12</sup> *Hevea brasiliensis*, EUPHORBIACEAE.

<sup>13</sup> In 1861, Chandless, a French traveller, observed the first rubber tappers at the mouth of Teles Pires in the Juruena river (Grünberg, 1970).

<sup>14</sup> The Villas-Bôas brothers, Leonardo, Cláudio and Orlando, became nationally famous for the “pacification” of various indigenous groups and were responsible for the creation of the Xingu Indigenous Park. Orlando Villas-Bôas was the last brother to die, in 2002.

### 2.3 NEW LIFE AT XINGU PARK AND THE OTHER KAIABI LANDS TODAY

The Xingu Indigenous Park was created in 1961 by the Brazilian government. It has an area of 2.642.003 ha, on the Xingu River watershed in a transition zone between the savannas and the Amazonian tropical forest. Fourteen indigenous groups live within the Park's limits, totalling 3.705 people in 1999 (Ricardo, 2000). There are three FUNAI' indigenous posts that concentrate the health, political and educational services and provide support for the villages: Leonardo (upper Xingu); Pavuru (middle Park region) and Diauarum (north portion).

The cultural and environmental characteristics of Xingu Park differ strongly from those of Kaiabi ancestral land in the Tapajós' watershed. In comparison with the climate in Kaiabi ancestral land, in Xingu Park there is a pronounced dry season, which goes from April until September. There is also an important climatic line which is located near the 11°S parallel, dividing the Park from the typical Amazonian tropical climate to the northwest (RadamBrasil, 1981).

In Xingu Park, the vegetation reflects the climatic conditions, where to the south there is predominance of savannas, and to the north, of dried or deciduous forests. Typical Amazonian species<sup>15</sup> do not occur within Xingu Park and many important species for the Kaiabi cannot be found there<sup>16</sup> (Silva *et al.*, 2000).

After the transfer, a group of Kaiabi has remained in the Rio dos Peixes region, which today constitutes Kaiabi-APIAKA indigenous land. Other small groups remained and/or went to other regions near Teles Pires River, constituting another Kaiabi indigenous land<sup>17</sup>, commonly known as "Kururuzinho" (small frog). Nowadays, according to Ricardo (2000), the Kaiabi people total nearly 1.000<sup>18</sup> divided into three indigenous lands (Figure 1):

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<sup>15</sup> For example, the rubber tree, Brazil nut (*Bertholletia excelsa*) and mahogany (*Swietenia macrophylla*).

<sup>16</sup> Such as the Brazil nut, the arumã (*Ischnosiphon* spp, Marantaceae), used in basketry production, a bamboo (*Guadua* sp, Poaceae) used to make arrows, and the siriva (*Bactris macana*), a palm used to make bows and other wooden objects (Silva *et al.*, 2000).

<sup>17</sup> Both areas are considerably smaller than Xingu Park.

<sup>18</sup> Only for Xingu Park a proper census has been carried out. For the other areas, there are no data available on the exact number of Kaiabi people, as on Kaiabi-APIAKA indigenous land they are mixed with other indigenous groups.

- 1) Xingu Indigenous Park, where they constitute the larger population, totaling approximately 756 people in 1999 (UNIFESP-DMP, 1997).
- 2) Kayabi-APIAKA indigenous land, in northwestern Mato Grosso State (encompassing part of Kaiabi ancestral land), with 109.245 ha, created in 1991.
- 3) Kayabi indigenous land, between Mato Grosso (Apiacás municipality) and Pará (Jacareacanga municipality) states, with 1.408.000 ha (in process of official publication).

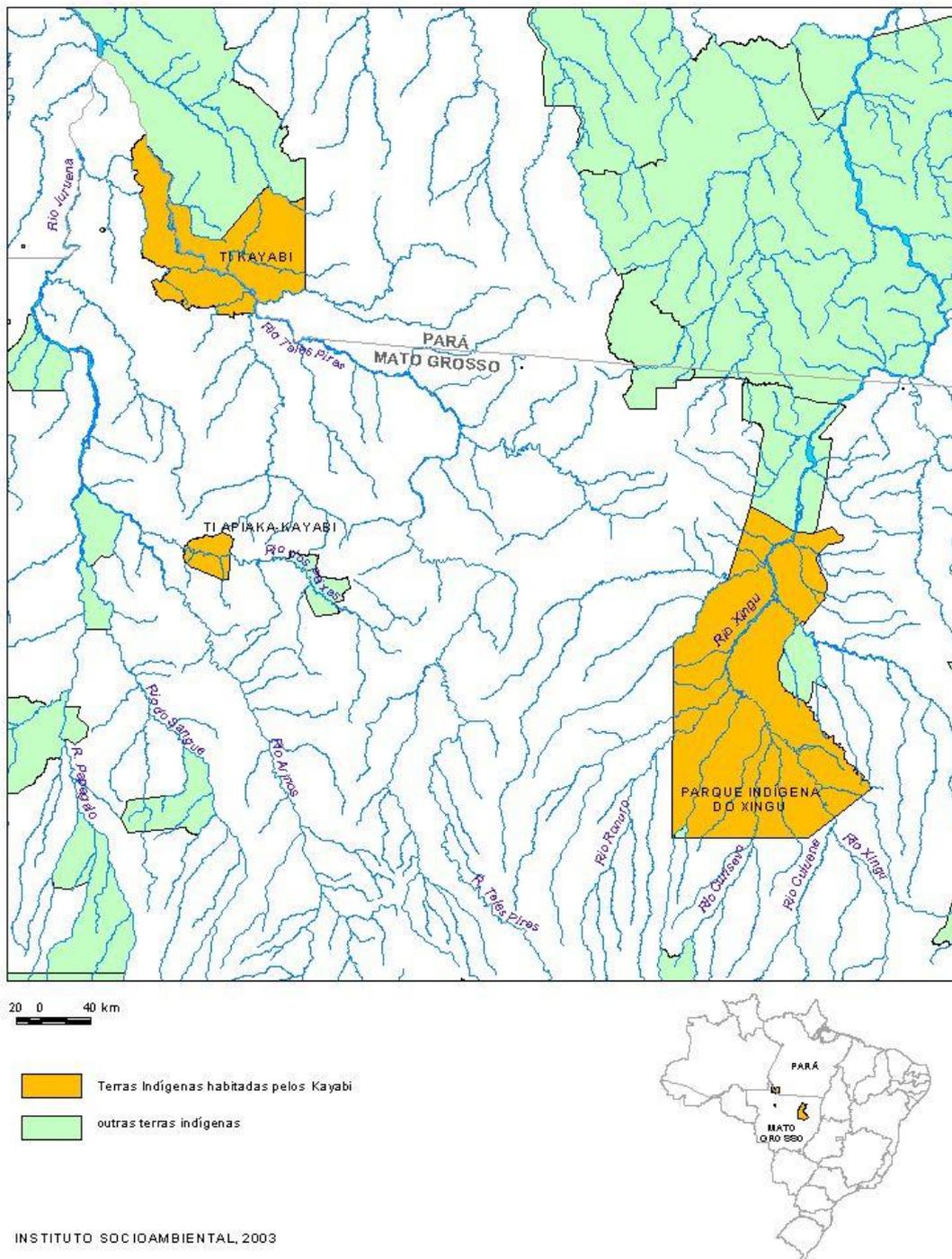


Figure 1. Location of Kaiabi indigenous lands and of Xingu Indigenous Park (in yellow) in Mato Grosso and Pará states, in the southern Brazilian Amazon. The green patches are other indigenous lands in the region.

The situation in the other Kaiabi lands is no better than it is in Xingu. In 1999, we visited the Kaiabi village at Rio dos Peixes, which is located only two hours from the nearest city. Most Kaiabi persons there, who still maintain kinship and some economic links with their relatives at Xingu, do not speak the native language anymore. They became increasingly dependent on industrialized food and some of them are involved in waged labor in the city. Only one man still remembered how to weave a basket, in spite of the availability of raw materials there in comparison with Xingu region. They plant only a few varieties of manioc and other crops. Their political organization is weak, some have alcohol addiction and some of them are selling mahogany wood to loggers.

After a period of “adaptation” to the new environmental and cultural conditions at Xingu Park, the Kaiabi survived and still maintain the use of the native language in the villages and the ability to produce many artifacts that constitute their material culture.

But, like many indigenous peoples in Brazil today, they are also facing problems in perpetuating their cultural and natural heritage. They cannot count anymore on the paternalist model of administration carried out for a long time by the Brazilian government. The indigenous lands are becoming islands of forest and natural vegetation in the middle of farms, logging companies, settlements and cities. The rivers, on which many indigenous peoples depend for physical survival, have been polluted by trash from the nearby cities and by agrottoxics from the farms.

After the transfer, initially the Kaiabi maintained a traditional pattern of occupation and dispersion: small familiar units grouped around a chief (“wyriat”). Later on, they began to constitute bigger villages with mixed families in a pattern encouraged by the Park’s administrators to provide easier access and better health services in the villages (Senra, 1999). As a result, Kaiabi villages are becoming fixed and the people sedentary. The natural resources that receive a greater pressure near the villages are diminishing. Worse, the fertile soils<sup>19</sup> that they use to plant their crops are also becoming overexploited, and some more demanding plant species and varieties, like peanuts and maize, are becoming endangered (Silva, 2002).

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<sup>19</sup> In Xingu Park there are special fertile soils called “black earth” which are of anthropogenic/archaeological origin. These soils are dispersed in spots in the landscape and are becoming poor near the villages due to intensive use for agriculture by the Kaiabi and Yudja peoples.

Worried by these and other problems, the Kaiabi and other indigenous groups from Xingu Park began to organize themselves to fight for their social, cultural and environmental sustainability. The Kaiabi became active politically, and today they occupy a great area in the northern portion of Xingu Park, with 9 villages. In 1995, a group of Kaiabi, Yudja and Suyá peoples<sup>20</sup> created the Xingu Indigenous Land Association (ATIX), to fight for their rights, organize the communities and develop projects of common interest. ATIX has a council in which the 14 indigenous peoples from the Park are represented.

Today, the Kaiabi are involved in projects related to education (training of indigenous teachers), economic alternatives, territorial monitoring, cultural rescue and environmental management and conservation, developed mainly by the Instituto Socioambiental<sup>21</sup> in partnership with other institutions and with the local indigenous organizations, principally ATIX.

In the villages, some people are involved with waged works, like the indigenous teachers and the health agents. Others, work for the community and receive a symbolic payment for their work, as the beekeepers and the agents for management of natural resources<sup>22</sup>. The entrance of money in the villages' daily routines was an unavoidable fact, which is strongly affecting the Kaiabi social organization.

The first project written and developed by ATIX was called "Kumana"<sup>23</sup>, for the cultural rescue of traditional arts and stories, which begun in 1997<sup>24</sup> and included two other groups who live in the northern portion of the Park<sup>25</sup>. Houses were built in the bigger villages, to function as schools, for the elderly to tell stories and to teach the

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<sup>20</sup> The Yudja and Suyá also lived in the northern portion at Xingu Park. Today, the Suyá moved to their ancestral land in the southwest portion of the Park.

<sup>21</sup> Brazilian NGO, [www.socioambiental.org](http://www.socioambiental.org).

<sup>22</sup> There is a project which has been developed since 2000, in a partnership between ISA and ATIX, for training young people to work with natural resources management and conservation. In 2002, it included the Kaiabi, Suyá, Yudja and Ikpeng peoples, comprising 27 agents working in 16 villages.

<sup>23</sup> Which is the name of a type of bean.

<sup>24</sup> This project was sponsored by the UNIFESP (Federal University of Sao Paulo State), through the health division, which is providing health assistance for Xingu Park' indigenous peoples since the end of the 1960's.

<sup>25</sup> The Yudja and the Suyá.

youngsters how to make traditional artefacts. They planned to sell the objects produced in these schools in order to make possible the continuity of the project.

Under the “Kumana” project, workshops for teaching basketry weaving and other crafts were promoted in some Kaiabi villages, with the advice of elders and other participants. The success of this initiative varied from village to village. At Kururu and Capivara, for instance, some young men began to learn to weave baskets at these events. The project led to the implementation of a project for commercialization of handicrafts produced by Kaiabi, Suyá and Yudja peoples through ATIX.

Through some workshops realized under the “Kumana” and resulting from another educational program called “Ecology, Economy and Culture”<sup>26</sup> I perceived that in some villages, people used Berta Ribeiro’s article to weave the basketry designs drawn by Friedl and Georg Grünberg and by Ribeiro herself in the paper (F. and G. Grünberg, 1967; Ribeiro, 1986). It was possible for them to copy the designs from a sheet of paper, so I began to document and photograph all the designs I found in the villages, and later on, in Brazilian ethnographic museums. This was the basis for the production of a bilingual book on Kaiabi basketry, which is still in preparation. The book, “Yrupema re je mu’e” (The book of Kaiabi basketry) was distributed for teachers and elders at Kaiabi villages, as a working book, in which they could take notes and complete the names and meanings of the designs. Some experienced weavers say that they have learned some designs “from the book”.

## **2.4 CAPIVARA AND TUIARARE VILLAGES**

The two villages included in this study are located in the northern portion of Xingu Indigenous Park (Figure 2). The Capivara<sup>27</sup> village is placed in the right riverbank of Xingu River, about 20 minutes by boat to the north of Diauarum Post. It was created in 1974, comprising the extended family linked to the great chief Temeioni (now deceased), who lived at Rio dos Peixes and died at Xingu Park. His older son, Kupeap, is one of the oldest Kaiabi man still alive and is very

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<sup>26</sup> Which lasted from 1999 until 2002 and was developed by my husband and I, involving Kaiabi and Yudja communities, under the project “Development of Economic Alternatives and Management of Natural Resources” developed in a partnership between ISA and ATIX.

<sup>27</sup> Since the 1980’s, the village has been studied by three anthropologists: Elisabeth Travassos, who studied music and shamanism between the Kaiabi (Travassos, 1984), Arlindo Rodrigues, who studied soil and agroforestry management (Rodrigues, 1993) and Klinton Senra, who worked as an advisor for ISA and studied the social organization related to traditional economic activities (Senra, 1996).

knowledgeable about Kaiabi culture. There are nearly 80 people living at Capivara village now. The head of the village is Jefuka (Temeioni's grandson), who is also a health agent and a political leader.

The village has one motorboat, a combined radio and health unit building, a school, public toilets and a beekeeper's office. There are two teachers, Awatat and Jemy.

Tuiarare is on the right riverbank of the Xingu, southwards to Diauarum Post, nearly one and a half hours by boat. It was created in 1987, with a population of 130 people.

In the beginning, Tuiarare was a small village comprising Masia's (one of the elders) family, who came from Teles Pires River to Xingu. Afterwards, other families decided to join them and to build a big village. The chief is Oscar Kaiabi, son of a man (André) who grew up outside Xingu Park, in Cuiabá (Mato Grosso State capital). Their sons studied outside Xingu Park in public schools in the nearby cities.

The village has a school, a combined radio and health unit building, two motorboats, public toilets and a beekeeper's office. There are two indigenous teachers, Aturi (older) and Pikuruk. There is one agent for management of natural resources, Tamakari, Aturi's son. Aturi is a very active person and is involved in the coordination of a project for the rescue of Kaiabi basketry and textiles.

In both villages, the main economic activities are fishing and hunting, almost exclusively done by men and agriculture, carried out by men and women, with familiar and some communal agricultural plots. Handicrafts production also plays an important role in the familiar economy.

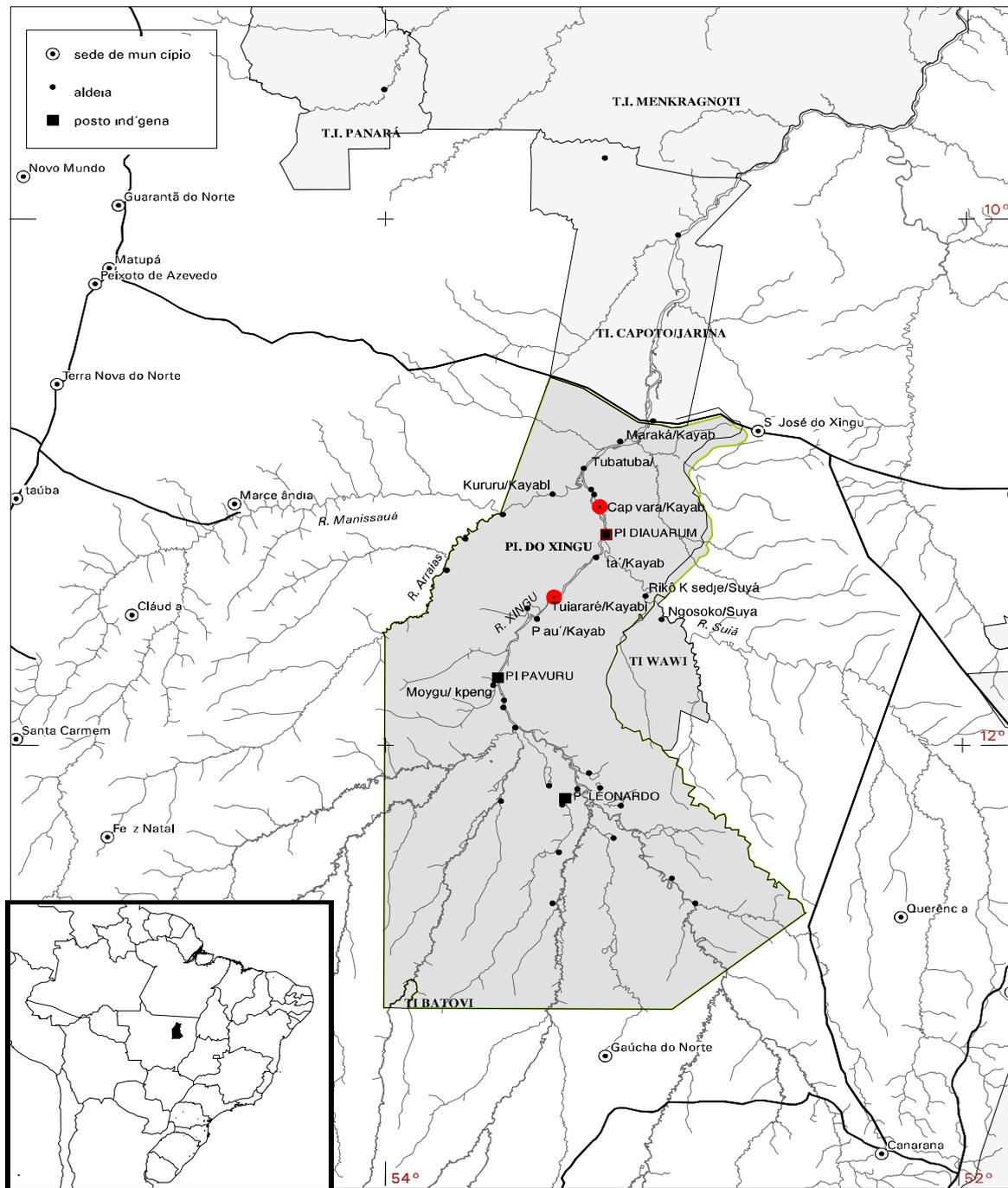


Figure 2 – Location of Capivara and Tuiarare villages (red dots) at Xingu Park.

### 3. METHODOLOGY

#### 3.1 SPECIFIC RESEARCH QUESTIONS

In this dissertation I use unpublished data that I have been collecting over the last five years in different Kaiabi villages. I have also carried out intensive fieldwork during two periods: May, June and July of 2002 and May and June of 2003. The specific questions I have sought to answer through the field and laboratory methods I have used are:

##### Basketwork technology

1. How is technological knowledge of basketry weaving transmitted amongst the Kaiabi male population?
2. What are the different stages of weaving a basket?
3. What are the different names given to the graphic patterns?
4. Which graphic patterns are in danger of disappearing?

##### Knowledge transmission, distribution and loss

5. How is knowledge about basketry weaving and graphic designs distributed between two Kaiabi villages?
6. Is the level of knowledge about basketry weaving restricted to some specific families?
7. Is knowledge of the graphic designs related to differences in ancestral territory (as between Capivara and Tuiarare villages)?
8. In which ways might the displacement of Kaiabi people from their ancestral land have affected the transmission and distribution of technological knowledge of basketry weaving?
9. Are there alternative and innovative ways of transmitting knowledge or learning to weave baskets been developed by Kaiabi communities?

##### Use and management of natural resources

10. What are the natural resources used for basket making and which might present problems of availability within the Xingu Park area?

### 3.2 FIELDWORK

#### Previous fieldwork

During the first years of fieldwork, from June 1997 until May, 2002, I reviewed secondary data on Kaiabi ethnography and ecology. I have also been recording myths and stories related to basketry or the natural resources used to make them, as well as data on the collection, preparation and transformation of the natural resources into different kinds of baskets. These data have been obtained using: a) participant observation in the villages; b) through training courses and workshops; c) and through field walks in different kinds of vegetation to survey the natural resources.

As part of my work as a researcher for the Instituto Socioambiental, I have been photographing different kinds of baskets in the villages and in three Brazilian ethnographic museums located in São Paulo and Rio de Janeiro<sup>28</sup>. I also got photographs of baskets taken by Georg Grünberg<sup>29</sup> at Rio dos Peixes in 1966. The material resulting from this photographic documentation has been used to organise a didactic book for the Kaiabi people (Athayde, 1999), which allowed me to produce a fairly complete catalog of almost all graphic designs woven on the painted baskets.

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<sup>28</sup> The Museum of Archaeology and Ethnology of University of São Paulo (Museu de Arqueologia e Etnologia da Universidade de São Paulo - MAE/USP). Klinton Senra, an anthropologist who collaborated with me in this museum survey and who also works with Kaiabi people, carried out surveys at the National Museum (Museu Nacional) and Indian Museum (Museu do Índio) in Rio de Janeiro (Senra, 1997).

<sup>29</sup> An anthropologist who worked with the Kaiabi in Rio dos Peixes in 1966 and who wrote a dissertation and other articles on Kaiabi ethnography (F. and G. Grünberg, 1967; Grünberg, 1970).

### Fieldwork carried out in 2002 and 2003

As a result of this earlier work, some Kaiabi men and I decided to carry out a survey to investigate varying knowledge of baskets and graphic designs between different villages and families. This work was done between May and July of 2002 and continued in May and June of 2003. Indigenous teachers, elders and representatives of the group of indigenous agents for management of natural resources have been participating both in the question schedule design and in the interviewing process. We then structured a questionnaire to carry out semi-structured and structured interviews with every men aged fifteen years old and over in nine Kaiabi villages and in the Diauarum Indigenous Post. This questionnaire is presented in Appendix 1.

For the purpose of this dissertation, I selected two villages for comparison, Tuiarare and the Capivara. These are the biggest Kaiabi villages in the Xingu Park and the people who live there used to inhabit two different places located on their ancestral land before the transfer to Xingu.

In Tuiarare village, four Kaiabi men participated in the elaboration of the questionnaire and in the interviews:

- Aturi Kaiabi, the teacher of Tuiarare village and coordinator of a project for basketry cultural rescue;
- Tamakari Kaiabi, Aturi's son and agent for management of natural resources who works and lives at Tuiarare village;
- Pirapy Kaiabi, agent for the management of natural resources who works and lives at Barranco Alto village;
- Kway'wu Kaiabi (his Portuguese name is Osmar), agent for the management of natural resources who works and lives at 3 irmãos village.

In Capivara, the teacher Jemy Kaiabi helped me with the translation of all the interviews. In each village, I selected the household as the basic unit of analysis. In every household, I interviewed the chief or the head of the household and all other men who lived in the same house: sons, sons-in-law, nephews, brothers-in-law etc.

I collected basic social data about each person, specific data on basketry weaving and data on natural resources use and management. I recorded all the interviews using a tape recorder. The data included:

1. **Social data** - place of birth; age; social position in the village (village chief, health monitor, teacher, boat driver etc); brief life history and kinship (father, mother, other relatives);
2. **Knowledge transmission, weaving techniques and trading** – if the person was known to weave or not; how he learned; if he had taught somebody; at what age had he learned; if he counts when he weaves; what patterns he actually uses; which names are used for the patterns; and what the baskets are used for (exchanges, sale, gifts, family use).
3. **Natural resource use and management** –natural resources used for basketry weaving; the ecological zones in which they occur, where they obtain them; and the availability of these resources in Xingu Park region.

In the second stage, I showed sheets containing photographs of different graphic designs in a random order and I asked people to say which design a particular person was known to weave. I assigned a code to each graphic design presented to the interviewed people. For other designs which people were known not to weave, I asked if they knew the names and then recorded the answers according to the codes.

For some specific persons, like shamans, elders or very good weavers, I asked additional questions relating to cosmological and spiritual aspects of basket weaving (Appendix 1).

During May and June of 2003, I went back to some Kaiabi villages to fill in some gaps related to kinship and knowledge of basket graphic designs. I worked in Tuiarare, Capivara and Sobradinho and I also worked with Aturi Kaiabi on the correct Kaiabi orthography and on the translation of each graphic pattern name.

### 3.3 DATA SYSTEMATISATION AND ANALYSIS

To organise my quantitative and qualitative data, I used a Microsoft Access 2000 database. I carried out some basic statistics to analyse the comparative results for Tuiarare and Capivara villages: number of people interviewed, precedence, place of birth, age, kinship. I also used Microsoft Excell to run the statistical analysis, as well as SPSS for Windows, to run the Anova linear regression analysis to relate uses and names of basketry designs to ages of participants. I used Anthropac software to run specific statistical analysis like consensus, MDS scaling and cluster, related to the use of graphic designs, the names given to them and the sequence of learning.

Linear regression - Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables, that best predict the value of the dependent variable. I used linear regression to test if there is a statistically significant relationship between uses and names of basketry designs (dependent variables) and age (independent variable).

Analysis of Variance or ANOVA – According to Bernard (1994), this is a statistical technique that applies to a set of averages. When there is one dependent variable and one independent variable, a one-way analysis of variance is needed. I used ANOVA to test the extent to age (independent variable) and knowledge on basketry designs (dependent variable) are significantly correlated.

MDS – Multidimensional scaling is a multivariate reduction data technique. It is used to tease out underlying relationships among a set of observation<sup>30</sup>. To use MDS, you start with a similarity matrix, and then MDS produces a set of coordinates and a graph grouping the informants based on their similarity. I run a non-metric MDS analysis to identify similar groups among the participants, in relation to their ability to weave the basketry designs and the name they gave to them.

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<sup>30</sup> As Bernard (1994) noted, most attitude and cognitive data are non-metric, they are not grounded in well-understood units of measurement.

Cluster analysis – Like MDS, cluster analysis is a descriptive technique for exploring relations among items in a matrix. It tells you “*which items go together and in which order*” (Bernard, 1994:505). To run a cluster analysis, you start with a similarity matrix, and then Anthropac produces a Johnson’s hierarchical clustering “tree” or “phenogram”, grouping the informants based on their similarity. I used hierarchical cluster analysis for the same purpose that I used MDS.

Consensus analysis – consensus analysis is a technique developed in cognitive anthropology for the analysis of structured interviews. According to Caulkins and Hyatt (1999:5), consensus analysis produces three main results:

- a) a measure of the degree of agreement between informants about a domain of knowledge, belief or practice;
- b) the “culturally correct” information about a domain according to the pooled answers of the informants;
- c) a score for each informant representing that person’s knowledge of the domain.

I run a consensus analysis to compare the participants from the two villages on the designs they were known to weave and on the names they gave for the different designs. I also could identify the designs that were in danger of disappearing, the most frequent and the variability in the names given to them.



Figure 3 – Interview with Tare’i Kaiabi in Tuiarare village. Participation of Pirapy (crouching) and Tamakari (standing), agents for the management of natural resources, in the interviews.

## 4 RESULTS AND DISCUSSION

### 4.1 BASKETWORK TECHNOLOGY

The Kaiabi have different designations for plaited baskets used by women for everyday work and the painted baskets used mainly for spinning cotton. The simple baskets used by women to sieve cassava flour and some beverages are called “*iparupit*” and the painted baskets in which different graphic designs are woven are named “*araa*”. It takes 10 to 15 days to make a medium sized painted basket.

Another kind of basket is the “panakũ” basket, a kind of “backpack” which they use to carry hammocks during travels. The “panakũ” is also painted and contains graphic designs. The Kaiabi clubs have woven handles, in which some designs woven in the baskets are also represented. The technology is the same, but instead of pure “*arumã*” strands, they use “*arumã*” and cotton to produce the design.

#### **Stages of weaving a painted basket (Figure 5):**

**Harvesting the natural resources** – The natural resources used to make baskets occur in different ecological zones. It can take time to collect the main fiber “*arumã*”, or its substitutes, the dye used for painting and the vine used for the rim of the baskets. The way the Kaiabi harvest and manage these resources is described in the section on natural resources.

**Preparation of fiber strands** – After arriving home, it is important to separate the stems and pith (removing the inner soft part) as soon as possible. With a knife, they prepare the stems and put them to dry in the sun. They leave them to dry for one day. Then it is time to measure the strands and divide them. They do it with the help of hands and mouth, trying to keep all the strands in same width. Then they prepare a bunch of strands in order to begin to weave. The rest, the strands of worst quality, mainly the thicker ones, are used to make other kinds of baskets, such as “*yrapemeauu*” (a basket used to sieve cassava flour).

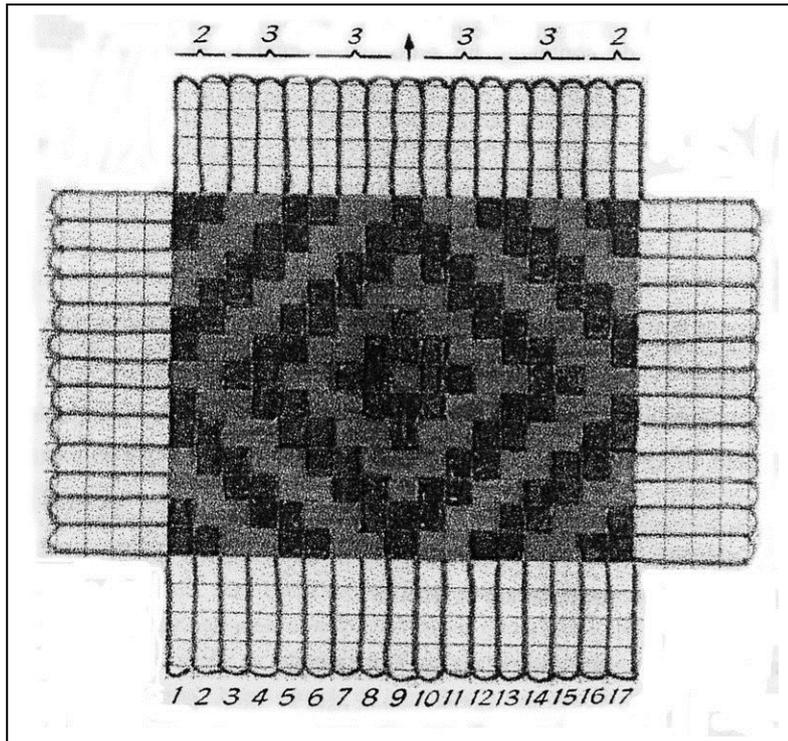
**Beginning to weave** – Before beginning to weave, one person needs to decide which design is going to be created, to initiate the counting. The beginning of the basket, or initial point is called “*i’ypyrungap*” or “*i’yp*”, which means a “way or a path to follow”. “*i’yp*” is also the name for a basket design woven in the simple unpainted baskets.

The weft is arranged, composed by a group of strands with the rough side up and other with the smooth side up. When the square is done, some pieces go out in different sizes. So, they measure and cut off the tips. Then they can begin to weave the rim.

The Kaiabi counting system is based on grouping numbers. They count up to five, then they group the numbers they know. For example,  $8=4+4$ ;  $10=5+5$ . Mendes (2001), in a study on the ethnomathematics of the Xingu indigenous peoples, referred to the practice of counting by grouping elements in the process of weaving a design in a basket. Through conversations with Aturi Kaiabi, she realized that in basketry weaving, the counting follows a group order, coming from a symmetric division. This way of counting, which can encompass a huge amount of different combinations, producing different designs, is what we can call Kaiabi mathematics. The designs also represent “numbers” for the Kaiabi. For example, to weave the design “*i’yp*”, one of the first designs they learn, they use 17 strands in the vertical position. From the center of the design, or first point, they weave two groups of three and one group of two strands for each side of the weaving square, as shown in Figure 4.

**Tying up the rims** – Basket makers need to seek good vines in order to prepare the rim. They use a double rim. The upper part must be shorter and the lower part bigger. These two parts are tied with “*arumã*”. One part of the basket enters into the rim to make the concavity. Then the four corners of the basket are tied with the rest of the rim. After everything is ready, they tie it with cotton. It takes about two days to tie a big basket.

**Painting the basket** – A reddish dye is applied to the surface of the basket using the hands. Four or five layers of dye are applied, so that it fully adheres to the basket. Baskets are then put out to dry in the sun for one entire day. The dye does not adhere on the outer side of the strands, but to the inner or smooth side.



**Figure 4** – Kaiabi mathematics: counting, grouping and design structure. The design woven in the center of the basket square is the “I’yp” pattern (Mendes, 2001).

**Finishing** – To remove the dye, they use a wooden stick or a brush and scratch the basket, getting it off from the rough stems, to which it does not stick, revealing the finished design.

Ribeiro (1980), researching a collection of 960 baskets from different Brazilian indigenous groups, found that the painting technique used by the Kaiabi is shared only by two other indigenous groups: the Tapirape and the Paresi. This technique is called posterior painting or “scraped” painting. The more common technique is to paint the strands before weaving. She suggests that the sharing of these technical styles and of some designs is an indication of historical contact between the groups, as well as of the possibility that they could have learned some techniques from each other. Some Kaiabi design patterns are also present in Bakairi indian baskets.



1



2



3



4



5



6

**Figure 5** - Stages of basket weaving. 1. “Arumã” strands prepared. 2. Mairajup (Sobradinho village) depithing “arumã” fiber. 3. Beginning to weave. 4. Weaving the body of the basket. 5. Pi’u (Sobradinho village) tying up the rim. 6. Kawinta’ii (Kururu village) painting. Photographs by Simone Athayde.

## 4.2 NATURAL RESOURCE USE AND MANAGEMENT

Nowadays, the Kaiabi use a total of 14 species in basketry weaving (see Appendix 2). Eight of them are used to make the basket body and the others are used for the rims and handles. The activity of collecting and preparing the plants for use can take days, because sometimes they need to go to distant places, far from the village, to get the materials they need.

The Kaiabi people used to live in a region with different environmental conditions from the Xingu Park. As a result of their relocation to Xingu Park, they lost access to many important plant species, including those used for weaving baskets.

The most problematic resource is the *uruyp kuruk* or “arumã” (*Ischnosiphon gracilis*, MARANTACEAE), the main fiber used for the basket body (Athayde, 2000). This species is restricted to the Amazonian region. It occurs in swampy and periodically flooded areas. It is represented by herbs that grow up to four meters height. A subterranean rhizome is present, from which generally grow a group of stems constituting a clump. The main reproductive strategy is vegetative propagation through the rhizomes (Andersson, 1977; 1984).

The fiber from different *Ischnosiphon* species is extracted from the external surface of the stems. It is a malleable fiber, used for basketry production by indigenous peoples; “caboclos” and communities living near the rivers throughout the Amazonian region<sup>31</sup>. Amongst the objects produced both for subsistence and for commercialization are: baskets, mats, club adornments, sieves, bracelets and headdresses.

*Ischnosiphon gracilis* occurs in very scattered and small populations within the Xingu Park, concentrated in its northwest region, where the weather and the environmental conditions begin to change. But to harvest the species, it is necessary

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<sup>31</sup> In Brazil, some NGO'S have been developing fair trade projects for the commercialisation of arumã basketry involving indigenous and rural communities, in partnership with local organisations. These projects aim to achieve political empowerment and autonomy, income generation, cultural valorisation and management of natural resources by the communities involved. Some successful initiatives in Brazil include the Baniwa Art Project, involving *arumã* indigenous basketry from the Rio Negro region; and the Fibrarte Project, with *arumã* basketry from rural communities that live around the Jau National Park in the Anavilhanas region, near Manaus, the capital of Amazonas state. For more information on these projects, you can visit the Instituto Socioambiental webpage at <http://www.socioambiental.org/website/baniwa/fonte.htm>.

to travel long distances, sometimes 6 to 7 hours by boat, and there is no guarantee of success for these enterprises. In their ancestral area, by contrast, there are large “arumã” populations, that are not restricted to special types of habitats, and which, as they affirm, “can be found virtually anywhere”. There is also another kind of “arumã” which they call *uruyp ete* (meaning truly arumã), which does not exist in the Xingu Park, but only in their ancestral area. They say this is the “arumã” of best quality for the baskets, and the *uruyp kuruk* is classified a second class resource.

The Kaiabi are reluctant to assume that they need to use other species as “arumã” substitutes in order to maintain the knowledge of weaving baskets. Many people said during the interviews that the main reason they are losing their knowledge about baskets is due to lack of “arumã” availability. Some of them say that the other species which can be used as substitutes are not of good quality, and they serve only as a way of learning, as baskets made from these do not last long. Anyway, they (even though they sometimes do not admit it) use at least six substitutes for “arumã” (Appendix 2) to make the painted baskets. Some substitutes, like the “*wywa*” (cana-brava, *Gynerium sagittatum*) are extremely weak and the dye does not stick well to the basket surface, so after a while it begins to flake off.

This reluctance to use species other than “arumã” may be linked to religious and cosmological reasons. In the myth of creation of Kaiabi people, the ancestral hero Tuiarare, who was a great shaman, used to spend hours weaving baskets in his hammock. Behind his hammock, there was an accumulation of discarded “arumã”, making a pile. There was a kind of larvae or worm who used to live under this pile. During the night, this larva transformed itself into a beautiful woman, Tuiarare’s wife (Athayde, 2001). Some elders interviewed said that this larva is the “owner” of the “arumã” plant, which has taken care of the plant until now. There is also a graphic design called “worm” or “larvae”, which is probably related to this myth.

“Arumã” species have also a mythical meaning for other Amazonian indigenous groups. According to Van Velthem (2001), the plant has the most symbolic associations of any of the raw materials used by the Wayana, Baniwa, Yekuana and Aparai to weave plaited baskets. The Wayana<sup>32</sup> view that these different species of arumã possess features of a human-like covering material. The property of the material enables it to reproduce “skins”, either the overall skin of primordial humans or

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<sup>32</sup> A Carib-speaking group of northern Pará state.

that of the basic supernatural beings, thus permitting their expression in material form. She also states that when the Wayana weave a basket to sell, they don't use the best arumã varieties. The better quality arumã fibers are reserved for the production of artifacts for their own use.

To harvest the "arumã" stems, the men have to decide which plants are ready to be harvested. They can tell it by the thickness, height and color of the stems. If the plant is not mature, the stems get soft and brake. Most of the time they collect the stems above the first node for the plant to sprout. They cut the stems with a machete, the leaves are removed and the stalks are bundled and fastened.

A project for the sustainable management of *Ischnosiphon gracilis* is being developed involving the Kaiabi communities (Figure 6). Since 1999, participatory surveys of natural population dynamics have been carried out, using techniques derived from forest ecology. At the same time, ethnobotanical research and training on harvesting techniques and intensity, plant characteristics and mythical aspects are being developed with Kaiabi communities and young men who are participating in the coordination of the activities. In 2001, the first management experiment was established, with the planting of 200 "arumã" seedlings in different ecosystems at Sobradinho village. The village community gave strong lead in identifying areas for transplanting and in the monitoring of the experiments. In Box 1, I present a translated text written by young natural resources "managers" concerning "arumã" management.

Box 1. The management of arumã. Text written by Pirapy and Tamakari Kaiabi.

### THE MANAGEMENT OF ARUMÃ

**Authors:** Pirapy Kaiabi and Tamakari Kaiabi

Indigenous agents for natural resource management (AIMAREN), Xingu Indigenous Park, Brazil.

*The natural resources managers wish to talk and explain the meaning of management to the community. They would explain how we can use the arumã, how we can manage it and how we can harvest without exhausting it.*

*The community needs to collaborate and plan the cultivation of this resource, the arumã, for the future. The community also needs to talk to us, so we can work together. Without the help of the community will not be able to continue the work.*

*We need to research the environment to know how much arumã there is. We need to find out the characteristics of this plant in order to manage it. We need to try to plant it, verify if it grows well, and the people need to stop using it until the population increases. When they are going to collect it, they need to choose which one is good to harvest. They should not cut all the stems from the same clump, to avoid weakening the plant.*

Other important species that presents a low availability within the Park is “jemore’yp” (jequitibá, *Cariniana* sp, LECYTHIDACEAE). This tree occurs in the forests along the small rivers, mainly in Capivara and Kururu villages. Kaiabi extract the resin present in the bark of this tree to dye the baskets, by first hitting the tree many times with an axe to loosen the bark. Then they remove it with the help of a machete and axe until the amount of bark needed is released from the tree. They cut the fiber and squeeze it into rolls in a container. The dye is then stored and ready to use.

The Kaiabi need a large amount of dye in order to decorate some baskets, because they require four to five layers of application for each basket. To obtain two litres of dye, they have to extract at least three meters of bark. When the bark is removed from the entire circumference of the tree, it may die. Even when it does not, it can take almost five years for the tree to recover the bark. The Kaiabi use a substitute for “jemore’yp”, called “ujupe” (*Myrcia deflexa*, MYRTACEAE) which is the same dye that the women use to make calabashes impermeable. Again, they say that the quality is not so good as the “jequitiba” dye, but it is an option for villages where “jequitiba” does not occur. To make the rim of the baskets, the Kaiabi use two species of vine, both called “yrupepepyta” (which literally means “rim of the basket”). The vine is harvested by measuring the amount needed. The extracted part of the vine is brought to the village and the outer part removed using a knife. It is dried in the sun for one day, and is then ready for use.



1



2



3



4



5

Figure 6 - Natural resources used in Kaiabi basketry. *Ischnosiphon gracilis*. 1. Drawing of an *Ischnosiphon* plant by Myaiup Kaiabi. 2. “Arumã” flower. 3. “Arumã” clumps in swampy habitat. 4. Jewyt Kaiabi surveying natural “arumã” populations. 5. Tawayku Kaiabi Yudja separating saplings to plant. Photographs 2-4, Simone Athayde. 5 – Geraldo Silva.

### 4.3 LEARNING TO WEAVE: KNOWLEDGE TRANSMISSION AND DISTRIBUTION IN TWO KAIABI VILLAGES

I have analysed data on basketwork knowledge in two Kaiabi villages, Capivara and Tuiarare. I interviewed 25 people in Tuiarare and 20 in Capivara, totalling 45 participants. Amongst them, 20 (44%) individuals know how to weave baskets, either simple or painted baskets: 12 from Capivara (60%) and 8 from Tuiarare (32%). Of the 20 weavers, 16 are chiefs or heads of a house, three are sons and one is a son in law of a chief. In each of these last cases, two have fathers who weave and one has a father who does not weave.

The number of households included was 12 in Capivara and 15 in Tuiarare. The age range was between 15 and 76 years old, with fewer people over forty. Figure 7 illustrates the percentage of people interviewed in each age class, and within each class, the proportion of people who know how to weave a basket.

The results reflect the actual Kaiabi demographic pyramid, in which there are few elders and middle-aged people and more younger people. So, despite having interviewed more people under 26 (44% of the total), only 20% of these actually knew how to weave a basket. On the other hand, in the age class from 26 to 35, fewer people were interviewed (16%), though 86% of these knew how to weave. The same trend happens in the upper ages classes: although only 9% of the people interviewed were between 66 and 76 years, of these, 75% knew how to weave. These results indicate: a) that Kaiabi men are learning to weave later than they used to in the past; b) that older men weave more than younger men; and c) that, in general, the practice of weaving is being maintained through the generations. This, of course, does not refer to level of expertise, which we will analyse later, based on the knowledge associated with the designs.

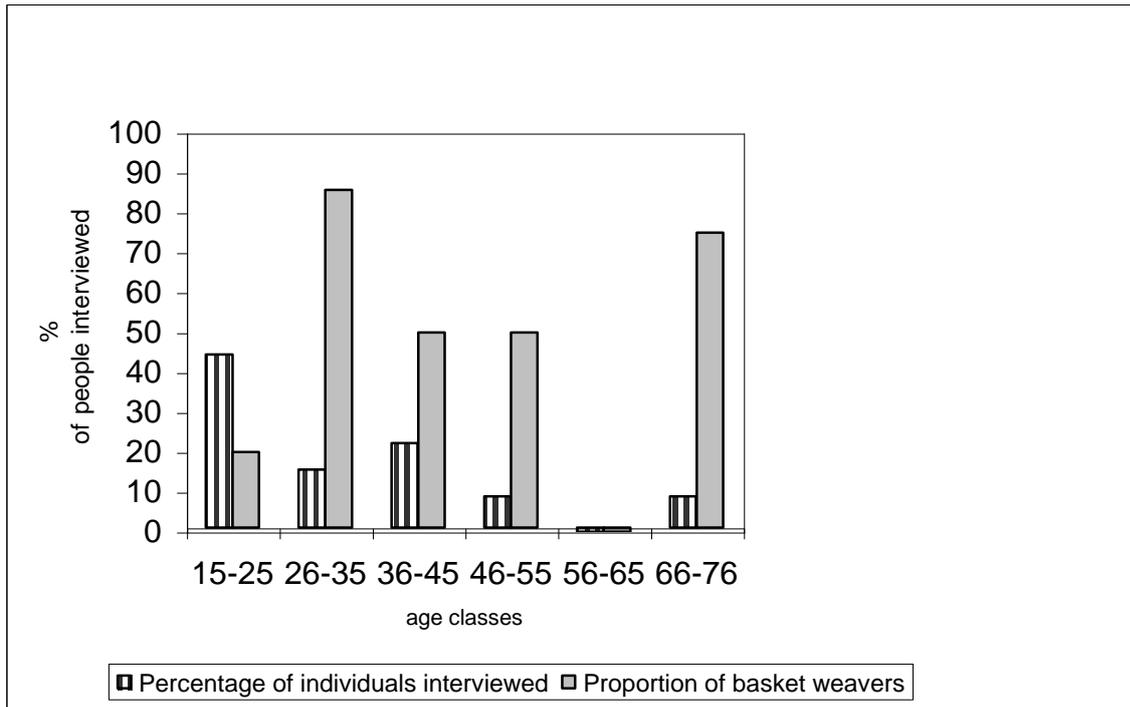


Figure 7 – Percentage of people interviewed by age class and proportion of basket weavers according to age class.

The people interviewed were born in five different places, but the majority was born in the Xingu Indigenous Park. Appendix 3 contains tables with the names, place of birth, codes and kinship data for each person interviewed in both villages.

In both villages, the kin relationships are mainly through the older men, reflecting the structure of traditional social organisation, in which the villages are defined in terms of the presence of a chief or a family leader. In Capivara, most people are related to the great chief Temeioni, who died in the village in the 1980's. Kupeap is Temeioni's son. The other families in Capivara came from Rio dos Peixes and are somehow linked to Temeioni's former village there. In Tuiarare, where people came from Rio Teles Pires, there are two main family groups: Masia's group, one of the elders of the village, and Xupe's group. There are also other families with minor kinship links to these two main groups.

Kaiabi people used to begin to learn to weave very early, when they were between 10 and 12 years old. From the weavers interviewed, 55% learned between 10 and 15 years old, 45% learned between 17 and 27 years old and only one man learned later, at 35 years.

When asked how they learned to weave, 30% of the weavers said that they have learned alone, observing others and then weaving by themselves, by trial and error. Family transmission seems to play a central role in knowledge transmission, for 30% of the weavers answered that they have learned through their fathers, 10% through the brothers and 5% through either uncles or grandparents (Figure 8).

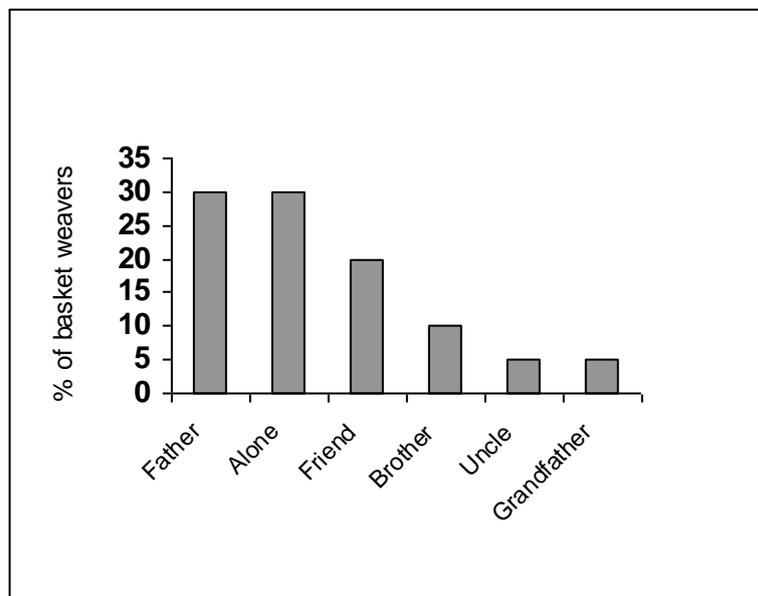


Figure 8 – People from whom the participants have learned to weave baskets.

There is a general tendency amongst the participants, to say that they have learned to weave “alone”, nobody taught them. In fact, much of the work a weaver does is learned by copying and counting on a ready basket. So, even if you begin to learn with somebody else, much knowledge comes from your own interest and ability. If you come from a family of weavers, of course you will have more opportunities to learn and observe ready-made baskets than if you do not. If there are no weavers in your family, you will have to make a greater effort to learn, as they say, through your own interest.

Very few people said that their fathers or grandfathers asked them to learn to weave a basket. I believe that it used to be part of the knowledge a Kaiabi man needed to have in order to live in his community. If for some reason they did not show any interest in learning, nobody would punish them. As they say, “nobody pushes nobody” to do or learn things.

### Use of Basketry Designs

By using consensus analysis, it was possible to compare people who weave baskets in the two villages, according to which designs they know how to weave. For the designs they did not weave, I asked them to give the names they knew. From the similarity analysis, using Johnson’s hierarchical clustering phenogram, we can identify four groups of people according to the use they make of basketry designs:

1. **People who know very few designs.** These are mostly those who weave simple baskets, which are not painted. These people belong to Capivara village, with the exception of Masia from Tuiarare, the elder man who know a lot of names, but uses only few designs. Pan, Jywapan, Kupeianim, Jawut and Masia belong to this group. Most of these people know only the “i’yp” pattern, generally the first to be learned.
2. **People who know few designs.** In this group, again, people from Capivara predominate. The trend is very close to the group one, they also weave the “i’yp” pattern. But they also know a few more patterns, including some of the easiest designs applied on the painted baskets, like the “awasiayj” (maize seed). Only Xupe, from Tuiarare, is part of this group. The others, from Capivara, are Jefuka, Perun, Tuwikang and Takaperun.

3. **People who use more designs on painted baskets.** In this group, there are two people from Capivara and two from Tuiarare. They weave few designs, but these designs are woven on painted baskets. Also, they do not weave the “*ta’agap*” related patterns, considered more difficult than the others. Towaju’i and Tarea (youngsters from Capivara) and Jepyk and Tymain (middle aged weavers from Tuiarare) are placed in this group.
4. **Experts.** This group is composed mainly of people from Tuiarare, who know how to weave different designs applied both to simple and painted baskets, excepting Kupeap from Capivara. This group is composed of one young man, Tare’i, and three other middle aged men from Tuiarare: Myaui, Aturi and Miracaja.

From the analysis, we can perceive the first big difference between the two villages: while Capivara has a greater proportion of weavers than Tuiarare, most people there know only simple designs. One exception is Kupeap, who is able to weave the 30 patterns that comprise the photographic collection used for the interviews. In Tuiarare, there are few weavers, but the diversity of patterns used is greater. Most of the more knowledgeable people are middle-aged men, excepting Tare’i, a 24-year-old man who learned many basketry designs “on his own”.

Figure 9 shows a graphic representation of the non-metric multidimensional scaling for the use of basket designs, where people with similar characteristics are placed near or together. On the left side of the graph are people who know few designs, mostly for simple baskets. On the right side, below the “0” line, the experts are grouped together: Aturi, Myaui, Tare’i and Kupeap.

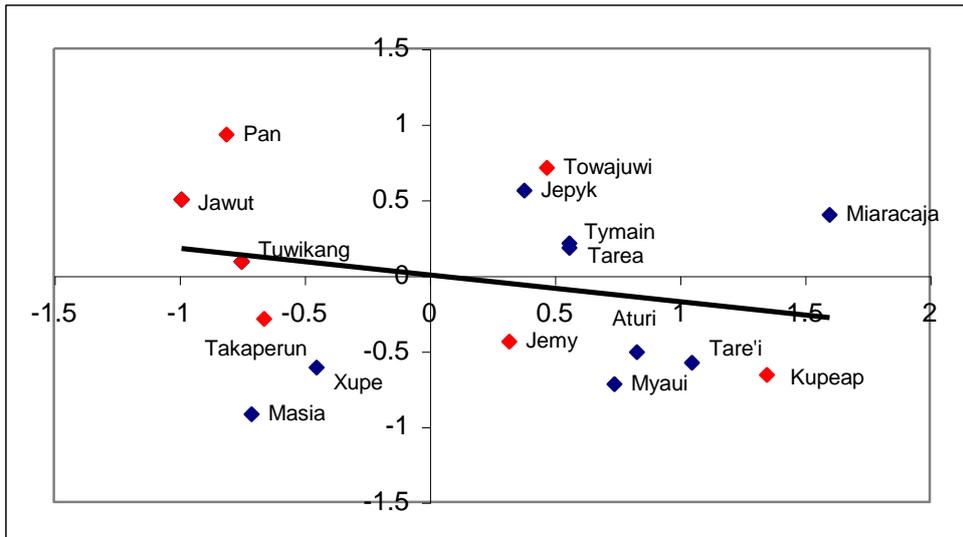


Figure 9 – Similarity between people from Capiwara (red) and Tuiarare (blue) villages in terms of the use of basketry designs. Non-metric multidimensional scaling analysis of similarity.

In the consensus analysis, the pseudo-reliability index was 0,950. In reality, this index is high because most weavers agree on one point: they do not know how to weave most of the basket designs. In the consensus analysis, the zeros are considered as an answer too, so zero was the most expected answer for the question about use of the designs. Therefore, for the experts, the level of expertise is inverse: they are placed near or below the “0” on the X axis of a “level of expertise” graph, as Figure 10 illustrates.

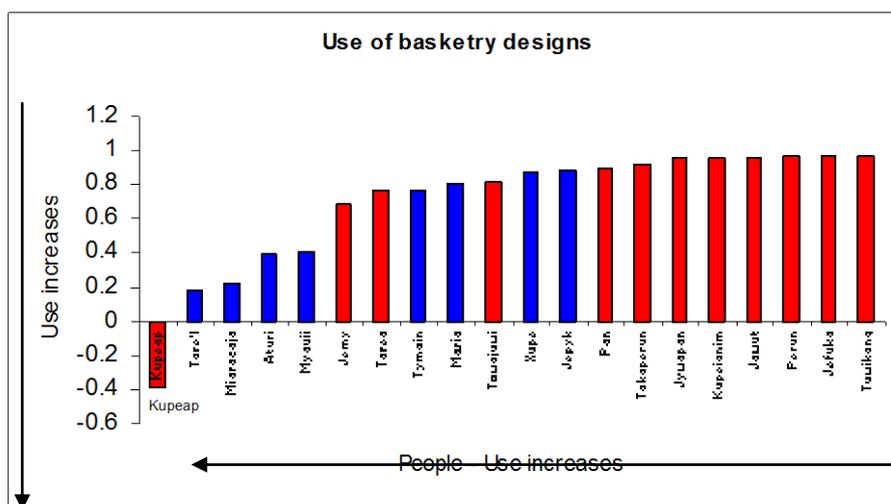


Figure 10 – Hierarchical representation of level of expertise in terms of the use of basketry designs.

According to Figure 10, Kupeap uses more designs than Tare'i, the youngster from Tuiarare, in second place, and so on, while those nearest to the “1” value, don't weave many of the designs showed in the interviews.

We would expect that the older men are those who use most designs. There is a tendency in this direction, but from the linear regression analysis, we can see that the relationship between age and use, or “knowledge” is not as strong as it could be. The Rsq index for the relationship between age and use of designs was 0.0483. This means that it is not statistically significant, or that the use of the designs is not correlated to age (Figure 11). Whereas in Capivara, excepting for Kupeap (the “outlier” red point in the upper right), most people know few designs and some younger people know more than older people; in Tuiarare some middle aged men and one young man (Tare'i) know more designs than the older people.

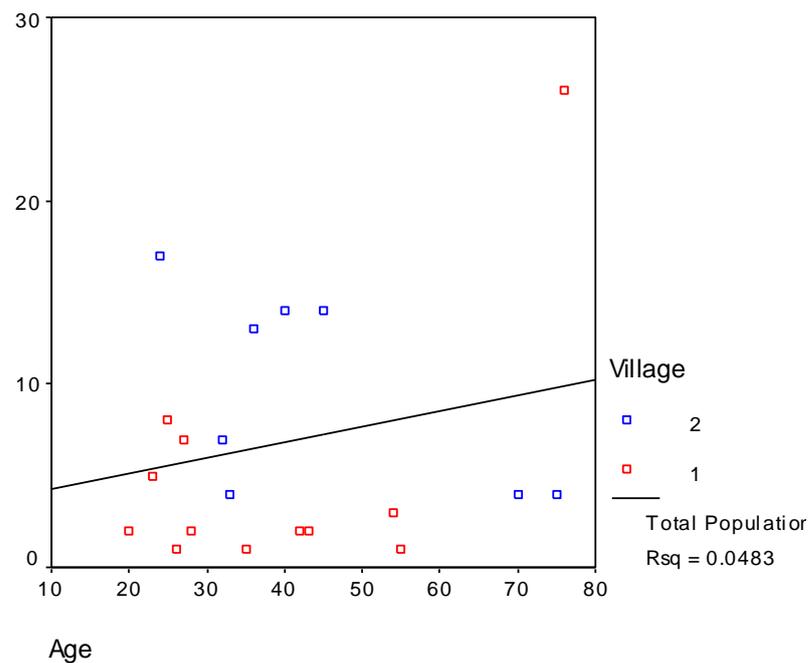


Figure 11 – Linear regression showing the relationship between age and use of basketry designs between Capivara (village 1, red) and Tuiarare (village 2, blue).

In relation to the designs used, only one design is shared by all people interviewed (100%): the “i’yp” pattern, applied to non-painted baskets. For the “jarukang” or “ipirien” pattern, also used in simple non-painted baskets, the percentage of people who use it is 60%. Most of the patterns are used by one or two persons only, with 5% and 10% of mentions respectively. Appendix 4 contains a gallery of photographs, names and meanings for the different basketry designs.

From the results we can see which patterns are “endangered”, because few people know to use them. It is also possible to confirm the differences between the two villages: in Capivara, people know fewer patterns than in Tuiarare, excepting Kupeap. They also know fewer names for the patterns. Of course, there is a close relationship between using the design and knowing its name.

Some patterns are used by very few people. This is the case with the panakū (“backpack” basket) patterns PA4 and PA5, and the tray basket patterns PE8 and PE12, the last one a composed design, and PE25. All of these were only mentioned by Kupeap (5%). Then, there are 15 designs mentioned by two people (10%). Among these, it is possible to identify most of the “*ta’agap*” designs, which are dominated by few people (Figure 12).

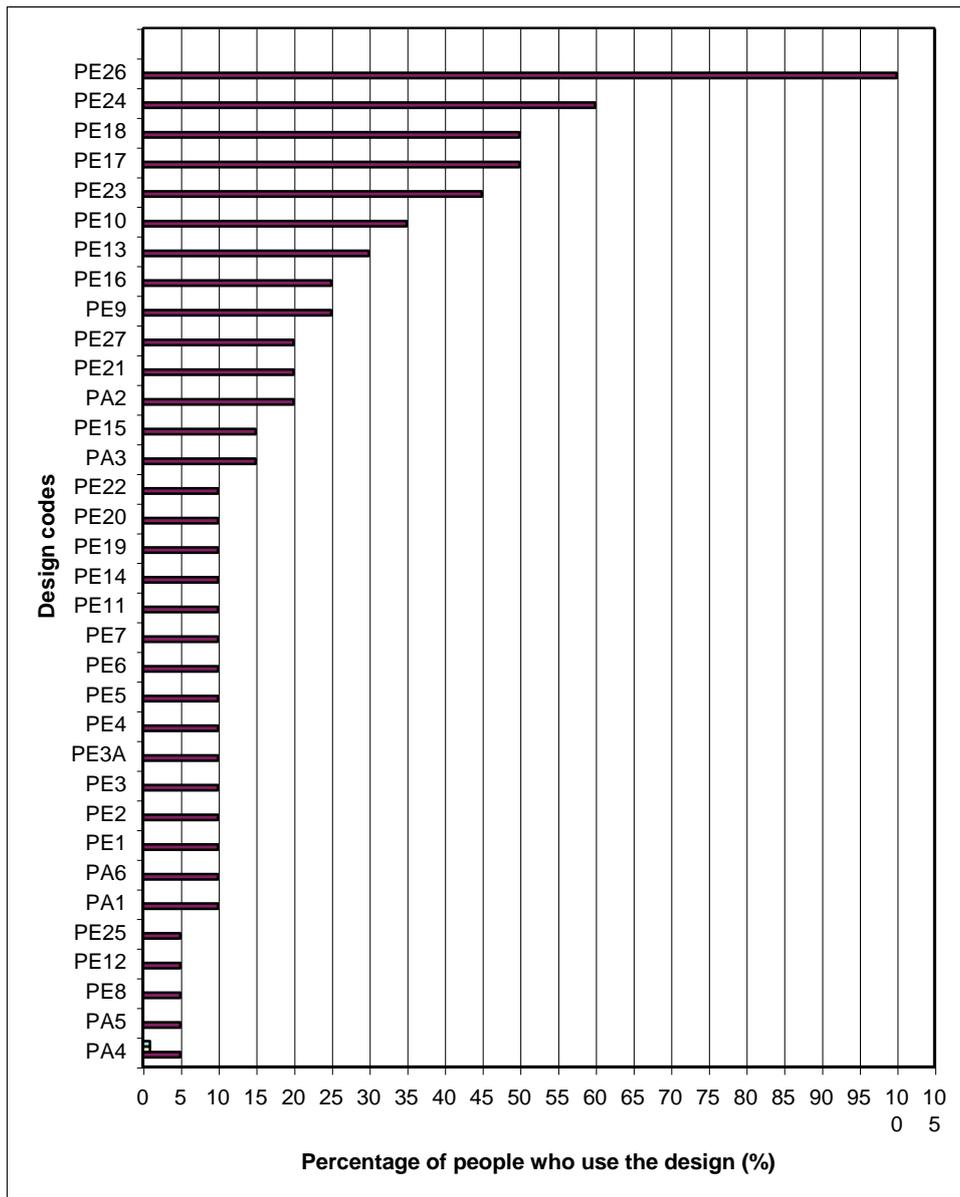


Figure 12 – Percentage of weavers that use each basketry design.

## Names for Basketry Designs

The analysis of the names given for the basket designs followed a slightly different trajectory than the analysis of the use of the designs. Here, people were grouped on the basis of the names provided, independently of the use they make of them. Nevertheless, the “expert” group appear together again, as we can see in Figure 13. Kupeap, Myauui, Tare’i, Aturi and Miracaja are on the right side of the graphic representation for the non-metric multidimensional scaling coordinates, along with most people from Tuiarare. Some older men who do not weave many designs, but do know the names for them, like Xupe and Masia from Tuiarare and Takaperun from Capivara for example, are placed with the other experts. Many people from Capivara are placed on the left side of the graph, which means that they don’t know many design names.

Again, the difference between the two villages is evident: in Capivara, the majority of men do not use and cannot name most basket designs; in Tuiarare, there are few weavers, but the diversity of patterns and the knowledge of names associated with them is greater.

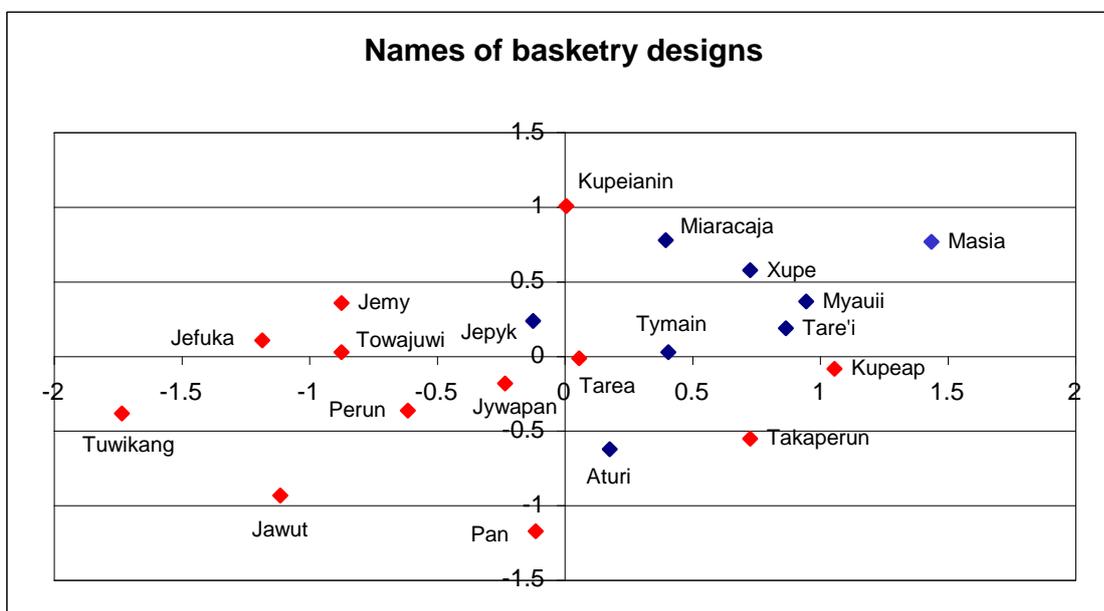


Figure 13 – Similarity between people from Capivara (red) and Tuiarare (blue) based on the names given for the basketry designs. Non-metric multidimensional scaling analysis of similarity.

The level of expertise for baskets design names is more related to age than the use of the designs. This means that if the man is a basket weaver, though he may not learn to weave a lot of designs, he will still be able to name them or will learn the names for the designs as he gets older. The linear regression relating age and names given for the baskets show this trend (Figure 14). Compared to the use of basketry designs, the Rsq index here was high and significant (0,5446), which means that there is 54% of probability for this relationship between age and knowledge of baskets names. The level of significance for the ANOVA linear regression was  $p < 0,01$  and the equation of the line is “ $y = 0,404x - 2,7222$ ”.

There are two experts, Kupeap (Cativara, upper red point in the right) and Myaui (blue point below Kupeap), and then Masia (oldest man in Tuiarare village), who said that he does not know how to weave anymore, but he knew in the past. In spite of the fact that he forgot to use the designs, he still remembers the names for them.

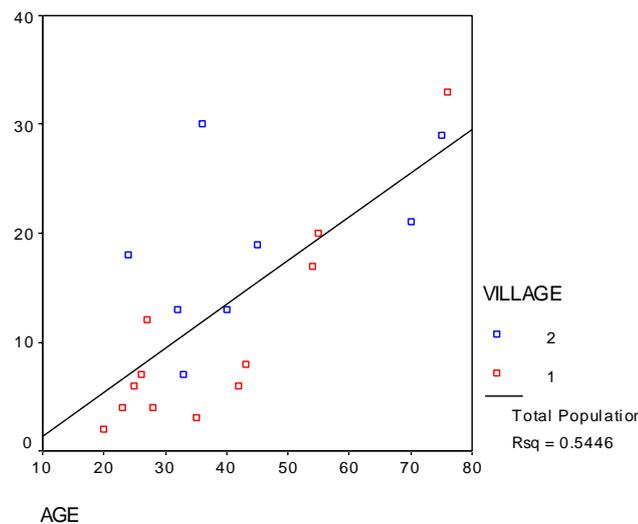


Figure 14 – Linear regression showing the relationship between age and the naming of basketry designs between Capivara (village 1, red) and Tuiarare (village 2, blue).

This difference between capacity to weave and to name the designs according to age can be explained by two hypotheses: 1) the first hypothesis is that there is a general ability to learn and name things, independent of use. We name more than we can recognise or use; 2) the second hypothesis is that the size of the sample, of only 20 weavers, is not big enough to show that there is also a strong correlation between the use of designs and age. We would expect that the number of people knowing how

to use the designs would grow proportionally with age, as happens with the names of the designs.

Of the different names given to the designs, few were mentioned by more than 5 people (25% of the participants). Tables showing the frequency of mentions for the names of each basket design are provided in Appendix 5. There is more consensus on the designs considered “easier”, the same designs which more people know how to weave as well. The highest consensus was for the design called “awasiayj” (PE17), which 85% of the people mentioned. For the “i’yp” design (PE26), 80% of the people gave the same name. The kururu’i (PE 16, little frog) pattern was also popular, mentioned by 60% of the people. Other designs with higher scores were the “awara pypot” (wild dog footprint) from the “panakũ” basket (PA6, 40%), the “kwasiapiayj” (PE19, 45%) and the “iwirapyj” (vine, PE11, 35%). For the others, specially the “*ta’agap*” types of designs, there is less than 30% of mention of names, and more variability in the names cited as well.

Let me provide an example of this. For the pattern PE1, photographed by Georg Grünberg at Rio dos Peixes village in 1966, seven different names were mentioned. Two persons gave the general name for painted baskets, or for “*ta’agap*” like designs: “Araa”. In this case, and for other “*ta’agap*” designs, some names are more general (like only “araa” or “*ta’agap*”) and some are more specific, but it is really difficult (and maybe impossible) to know which one is the “correct” one, if any. If we, or the Kaiabi people, decide to keep the “correct” names for the baskets based on consensus, there is a risk of over simplification and lost of diversity for the basketry names.

When I asked the people in the villages who could give the “correct” names for the designs, they replied saying “go and talk to the old man”, Kupeap. But are we going to consider Kupeap’s answers as correct, and the others as wrong? There could be variation between villages, families and people living in different regions, leading to a bigger diversity in the names given for the designs. Another problem is that there are few elders now, and knowledge on basketry design names has been lost and will be lost through the next generations. I think the best approach would be to present the actual situation to the Kaiabi communities and ask them what we should do. A contribution towards this might be the didactic book containing the photographs of the designs that has already been produced.

In the Appendix 5, Table 6 contains the names mentioned by two persons ore more for each design, and the names mentioned by Kupeap Kaiabi, the expert from Capivara.



Drawing: Matari Kaiabi

## Sequence of Learning

When asked about the sequence in which they learned the names for basketry designs, most people who could weave a lot of designs were quite sure about which ones they learned first, but towards the end, they sometimes got confused about which pattern succeeded the other.

From the statistical analysis, it is possible to construct a “model” for the sequence of learning the designs based on what people answered, but after the fifth design, is quite difficult to organise a logical order. Most people, representing 65% of the basket weavers, begin by learning the “i’yp” design. It is also the most popular design for the participants in this work, the only design that is made by all the people.

Figure 15 shows the similarity between the participants, based on the non-metric multidimensional scaling analysis. Most people are very close or actually superposed in the graph, which means that they have learned the designs in a similar way. Others, like Kupeap, did not learn in a similar way. Indeed, Kupeap told me that he first began to learn difficult patterns, like “ta’agap” related patterns, then he learned the easier ones later.

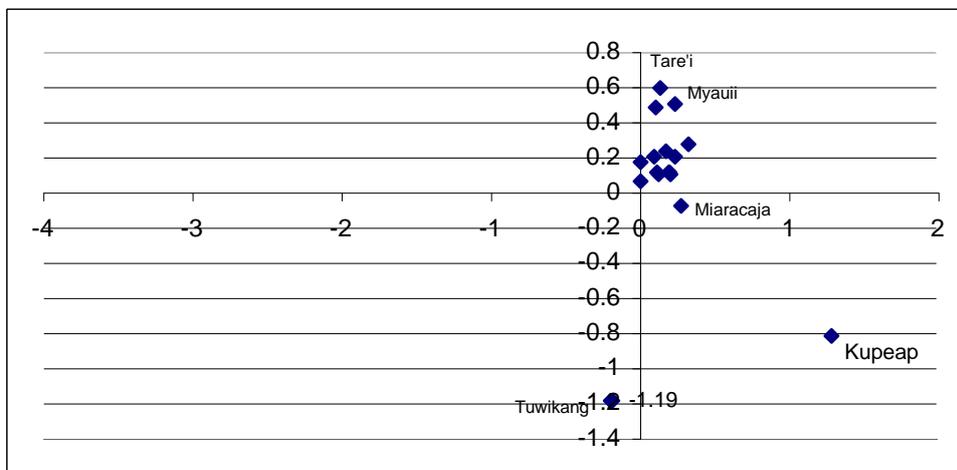


Figure 15 – Similarity between the participants in terms of sequence of learning basketry designs. Non-metric multidimensional scaling analysis of similarity.

It is worthy to mention that some men only learned the “i’yp” design, woven in non-painted baskets. After they learn the i’yp, they normally go through the other simpler designs, now woven in painted baskets, like the “awasiayj” related designs, and the “awarapypot”, which is a combination of 4 maize seeds that comes from the “awasiayj”. The next one would be the “jarukang/ipirien” motif, also woven in simple baskets. The only “ta’agap” related design which appears in this sequence or model is the “kururu’l”, composed of small “ta’agap” figures with four “eyes”, surrounded by a frame. The fifth design which appears in this model is the “inimoeta”, also considered “easy” and woven both in painted and simple baskets. Figure 16 shows the model for learning the basketry designs mentioned by two ore more people interviewed (10%). After the fifth position, the level on consensus decreases and there is no ordination possible.

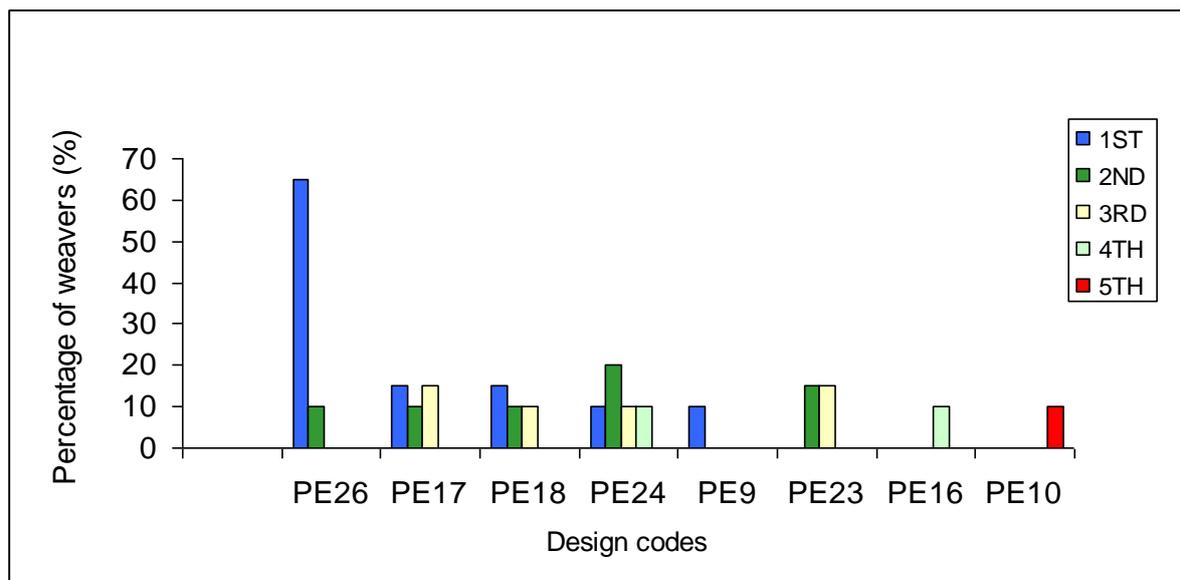


Figure 16 – Model for sequence of learning basket designs between the Kaiabi from Capivara and Tuiarare, showing the percentage of weavers who ordered the designs in the same sequence.

#### 4.4 SOCIAL AND COSMOLOGICAL ASPECTS OF BASKETRY KNOWLEDGE AMONGST KAIABI PEOPLE

Many Kaiabi people said that in past times weaving baskets was a requirement to get married. A man who did not know how to weave would not get married easily. They used to learn early, around twelve years old, so when they were fifteen or sixteen, regarded as the proper age to get married, they would already know how to weave, at least the simpler baskets for day-to-day use. As Rivière (1992:156) has pointed out, ...*"the ability to weave is regarded throughout the Amazonian region as a competence that signifies a proper man"*. In general, the manufacture of basketwork items is a duty that the young men owe to their parents-in-law in the early days of marriage.

A Kaiabi man who did not know how to weave a basket for his wife was cause of jokes in the village, and his wife would have to borrow baskets from the other houses to produce food and beverages. This was shaming for the family.

According to Guss (1989), in the Yekuana society, a Venezuelan indigenous group, basketry production plays an initiatory role when a man becomes a husband. To properly support a wife, one must be able to make the baskets that enable her to work. An individual's skill as a basketmaker is used as a general indicator of his competence and maturity.

For a young Kaiabi man, basketry apprenticeship was part of other daily activities undertaken when accompanying his father, brothers, brothers-in-law, uncles and cousins. A youngster would learn how to harvest the "arumã", how to prepare the strands for weaving and the process of counting and weaving itself. He would probably learn first of all the easiest designs for simple baskets, like the "i'yp", the "ipirien/jarukang" and the "inimo eta" patterns. Then, after he was able to weave the simple baskets for his wife and mother-in-law, he could follow up the apprenticeship for the most complex painted baskets.

Once, Aturi Kaiabi told me that basketry learning for the Kaiabi people is like school studying for westerners. He said that one man can go through many levels of apprenticeship and expertise, until he becomes a professional. A basketry professional is admired for his ability in the community.

The art of basket weaving and the ability to weave many different graphic patterns is not for everybody, though. The same fact happens in the western school system, where post-graduate studies are not for everybody, but for a restricted percentage of the population. Therefore, we cannot expect that every Kaiabi man is going to be able to weave many designs. Besides the social framework for learning, there are also the psychological and physical individual conditions determining a person's ability to do things, learn art or play instruments.

It seems that in past times, knowledge of basketry weaving was transmitted mainly within the family, in a horizontal way. If a young man came from a family of weavers, it would be easier for him to begin to learn with his father, uncle or grandfather. It would be easier for him to improve his apprenticeship, because a lot of baskets would be available for copying, hanging from the ceiling of the house. There was no commercialisation at that time, so the baskets were kept at home for a longer period of time, compared to nowadays. This pattern of intergenerational learning is somehow being maintained until now, but in a weaker way.

Some young experts from Tuiarare, participants in this analysis, do not come from families of professional weavers. This is the case of Aturi, whose father, Xupe, weaves only simple baskets and Tare'i, the young expert whose father, Pasi, does not weave any basket at all. On the other hand, the majority of Masia's sons<sup>33</sup> learned to weave and can produce painted baskets, while Masia himself only weaves simple baskets. In Capivara, Kupeap is the only great expert, but his son, Pan, learned only the "i'yp" pattern. Tare'a, a youngster who is learning more designs and is very interested in basketry weaving, does not come from a family of weavers. His father, Jawari, does not weave baskets.

In past times, the baskets were woven to be used by the nuclear and extended family of the weaver, mainly for the wife and for the mother-in-law. Sometimes, they could pay for a shaman's work with a basket, if asked to do so. Today, there are four main paths for basket exchange or commercialisation among the Kaiabi;

1. Baskets are given as gifts for women in the family (wife, mother-in-law, aunt, mother, grandmother, sister);
2. Baskets are given as payment for shaman's healing services;

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<sup>33</sup> Among Masia's sons who are basket weavers, only Tymain lives in Tuiarare. The others, Moiawe and Makupa, live at Diauarum indigenous post.

3. Baskets are exchanged for industrial products and indigenous products, with Kaiabi people or with other indigenous peoples from Xingu Park;

4. Baskets are sold commercially to non-Indians who live and/or work at Xingu Park; to the local organisation ATIX and to shops placed in the cities.

Nowadays, basketry weaving is no longer a requirement to get married for the Kaiabi. They say that today, people get married anyway, and the youngsters who come from a “rich” family have the possibility of choosing their wives. FUNAI employment, health agents, teachers and other waged labour activities are seen as of great value, for these workers can properly support a family with money.

Many houses that I visited did not have any baskets on display or being used by women to prepare food. When asked which basket they use in order to prepare food, the women said that they get baskets from their relatives. Even if this is not a shaming as it used to be in past times, they still make jokes about this situation. Sometimes we could see that the older men are “suppliers” of baskets for all the family, and the baskets are used in many houses, on a rotating system within the village. This only occurs with simple baskets, because the painted ones are almost exclusively destined for the commerce or exchange with non-Indians.

Due to their beauty and rarity, Kaiabi baskets can reach good prices in the Brazilian crafts market. One medium-sized painted basket of good quality can be sold for nearly US\$ 30,00 or £20,00 at specialized shops in São Paulo.

It seems that other forces are influencing the basketwork apprenticeship among the Kaiabi, mainly: a) the possibility to commercialise the basket production for the non-Indigenous people who work at the park or for specialized shops located in bigger Brazilian urban centres (like Brasília or São Paulo); b) the status associated with basketwork expertise within the community; c) and the perceived importance of basketwork and of the symbols woven in baskets and represented in other objects of material culture in the maintenance of Kaiabi cultural identity.

The Kaiabi have been representing the basketry designs in other objects also, as well as in body painting, and ultimately, in wooden benches produced for sale. These represent important and sometimes innovative ways of conserving the knowledge related to the basketry designs. The Kaiabi clubs have also woven handles using the same technique used for the baskets. The sculpted gourds and some Kaiabi tattoos using basketry designs were done since ancient times (Schmidt, 1942).

Kaiabi women have begun to weave hammocks using a different technique at Xingu Park, learned from the Yudja women. But they say that, in spite learning the technique from the Yudja, the designs they represent in the hammocks are copied from the basketry graphic motifs. Today, Kaiabi women weave many designs from the basketry in the hammocks.

According to some Kaiabi, the Apiaka<sup>34</sup> were basket weavers as well, and used to weave painted baskets. They were enemies, and during periods of war, the Kaiabi kept some Apiaka children and women in their villages. In these wars, they exchanged many aspects of their culture, as the material objects. Some Kaiabi men affirmed that the “*ta’agap*” pattern, one of the stronger symbols of Kaiabi identity, was “copied” or “taken” from the Apiaka. This fact was also registered by Friedl and Georg Grunberg (1967) and by Ribeiro (1986).

Ribeiro (1980) presents evidence of exchange of symbols and artefact use and techniques between the Tapirape, Bakairi, Kaiabi and Paresi indigenous groups. The exchange of technologies also may lead to a diversification and sophistication of the objects, and in Kaiabi society, to the diversity of graphic patterns that have been developed in basketry weaving.

These ways or paths of learning from the enemy are a common feature of Tupi-guarani and also of other Amazonian groups cosmology. The cannibalism of one “other” culture or essence, which becomes part of yourself, the possibility of fighting and at the same time learning and teaching the foreigners, the skin or the piece of basket of the primeval snake, are aspects shared by many Tupi-guarani Amazonian groups (Viveiros de Castro, 1992).

Even for other non-Tupi groups, shamanism, warfare and intercultural exchanges have played a central role in the development of knowledge systems related to artefacts production. For instance, the Yekuana people (Carib-speaking), led mainly by shamans, succeeded in obtaining the objects necessary for culture by either waging war or deceiving those who already possessed them (Guss, 1989:93).

Learning and creating, in Kaiabi society, is related to shamanism, as the great weaver, Tuiarare<sup>35</sup>, was also a great shaman and, according to a myth, learned to

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<sup>34</sup> Another Tupi-guarani group who lived near the Kaiabi ancestral territory.

<sup>35</sup> The great ancestral hero, creator of Kaiabi people. There is a myth in which Tuiarare went on an expedition to Xingu river (Wywa’y) to collect a kind of bamboo (*cana-brava*, *Gynerium sagitatum*) in order to make arrows. He walked around a lot, and he discovered many natural resources important for

weave painted baskets stealing a piece of basket from the house of a snake (Athayde, 1999). The acts of creation, discovery or dreaming are intimately linked to symbol development; creation of new design or painting patterns and naming beings. Kupeap said that the design called “*jowosiape*” (turtle shell) came to the Kaiabi from a dream some person (probably a shaman, he does not know) had about the body of a spirit from the water (*karauat*), with a painting similar to a turtle shell. They then began to weave this pattern and somebody named it.

Ribeiro (1986), in her article on the symbolism of Kaiabi basketry designs, shows how the set of graphic motifs represented in the painted baskets work as an iconography and thus as a symbolic language which helps to construct and to reinforce the group’s identity. She affirmed that some motifs like the “*ta’agap*” and the “*kururu*” might represent supernatural beings present in Kaiabi mythology and cosmology, sometimes with human and/or animal attributes at the same time.

The relationship between basketry and shamanism has been shown by ethnographers such as David Guss (1989) and Johannes Wilbert (1975), the former among the Yekuana and the latter among the Warao, both Venezuelan groups. Wilbert describes the process by which a master basket maker is transformed into a shaman through the practice of his art. In this case, the craftman acquired shamanic powers strictly for personal advancement rather than for practicing shamanism.

We can realize how much shamanism and cross-cultural exchanges can change, produce or destroy the paths of knowledge transmission and exchange in indigenous societies. The cosmological world intertwines with life in the villages, keeping the society’s structure and identity. Today, the enemy is “western” society, in a relationship which has been producing replacement of values and knowledge.

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the Kaiabi people during this travel. In the way back to his home, he arrived in a village, it was the “snake” village. After discussing with the snake for one entire night, he spoke the name of a great hawk known as a snake eater, and then he left the house carrying a piece of painted basket, from which he learnt how to weave baskets and transmitted to the Kaiabi people (Athayde, 1999).

## 5. CONCLUSION

This analysis of knowledge transmission and distribution related to basketry production amongst the Kaiabi has helped us to understand the dynamics of indigenous knowledge systems in response to the social and environmental changes that have been occurring since contact with “westerners”. It has showed as well that the displacement of the majority of the group from their ancestral land and the new conditions they have faced at Xingu Park has led, at the same time, to knowledge change, loss and to the rise of innovative ways of transmitting and maintaining their cultural inheritance.

It is important to recall that the Kaiabi who live at Xingu Park, in spite of all the changes they have been facing in the last 40 years after the transfer (for instance, the critical lack of the main raw material, the arumã), still maintain a great part of their basketry designs. On the other hand, the Kaiabi living today at two other indigenous lands at Rio dos Peixes and Rio Teles Pires, both in the ancestral land, lost almost all the knowledge associated with basketry weaving and other craft production. Why? Firstly, there are fewer people in the ancestral area. Kaiabi population at Xingu Park is increasing fast, and they are now the biggest Xingu tribe. Secondly, the other Kaiabi areas are smaller than Xingu Park, and nearer to the cities. The political panorama at Xingu also helps to reinforce people’s identity and self-esteem. A Kaiabi leader governs today’s most powerful indigenous association there. And at Xingu there is more financial support, health assistance and community-based development projects.

This does not mean that knowledge of basketry production is not endangered at Xingu Park as well. Through the quantitative survey of knowledge distribution in the two villages, I have discovered that many young men in the age class in which they were supposed to know how to weave baskets, even the simpler ones, actually did not learn it. It feels like a link was broken or missing in the chain, due to significant demographic and social changes following the transfer.

There are few elders, and among these, very few experts like Kupeap, our knowledgeable “basket man”. Of course, we have to consider that expertise is not for everyone: paraphrasing what Aturi, the Tuiarare’s teacher said, “a PhD is not for

everyone". There are inner psychological and artistic capabilities, reinforced by social conditions that play an important role in expertise development of both manual and intellectual skills. But even considering this, in the villages analysed, few youngsters are learning the basics of basketry weaving. In both villages, in spite of the differences, we can identify at least five different groups:

1) Few elders, who are knowledgeable in basketry designs names and myths, but not in the capacity of weaving a diverse range of patterns (with the exception of Kupeap from Capivara village);

2) Middle aged men, married, still learning and interested in improving their skills in the repertory of designs;

3) Middle aged men who stopped to learn but who weave simple baskets in order to support their family;

4) Young men, married, some learning out of their own interest;

5) Young men (15 years old and over), singles, did not learn or did not begin to learn.

In Tuiarare, fewer people weave baskets, but they know different graphic motifs. In Capivara village, more people weave, but they weave simpler baskets. But in order to verify if there are significant differences between people coming from different ancestral regions (Rio dos Peixes and Rio Teles Pires) it would be necessary to carry out additional surveys, including the other villages from Xingu Park.

Based on the results of this survey, it seems that there has been a shift in the age in which a Kaiabi man begin to learn to weave baskets. They are learning later now, mainly after 18 years old, while before they used to learn at a younger age, sometimes by the age of 12 to 15, by observing their relatives, mainly father and/or grandfather. Maybe this is not because they are getting married later now, it has to do with the social demand for basketry production also. In the past times, a man should know how to produce a set of objects to support his wife before getting married. Now, the requirements to get married have changed in many families, and "riches" for them is increasingly associated with money, more than with level of "knowledge" and labor capability. For instance, people who work in waged related works, like health agents or teachers get married easier than experts in basketry weaving.

In spite of these social changes, basketry weaving is still a symbol of status and power among the Kaiabi. It is shameful for a married man if he does not know how to

weave a basket for his wife. But in many houses visited in the villages, even if the husband knew how to weave painted baskets, the simpler baskets used by women in routine food preparation tasks were borrowed from some elder man's family (usually a relative). Most of the times, men produce painted baskets more for sale than for their wives to use.

This is another shift in the motivation to learn and to produce beautiful baskets: the possibility to commercialise the baskets for the non-indigenous society seems to be more important than to weave for the family. But the commercialization has contradictory consequences. While it can be good as a means of income generation, it also places extra pressure on the natural resources used as raw materials.

Here, let me note a critical point related to the sustainability of basketry production among the Kaiabi today: the lack of "arumã" (*Ischnosiphon gracilis*) fiber. The displacement of Kaiabi from their ancestral land restricted access to this important resource. As the Kaiabi acknowledge, the unique short-term solution to this problem is the use of plant substitutes. But none of the substitutes found in Xingu Park region have the quality of "arumã". This is a problem in relation to food production by women as well, since they need the simpler "arumã" baskets in order to prepare some beverages and flours. The long-term complementary solution would be to increase and improve the arumã management initiatives in Kaiabi villages within Xingu, through the participation of the indigenous agents for management of natural resources and the communities.

The sale or exchange of "every" painted basket produced has also an effect in the maintenance of the knowledge associated with basketry designs. As in the myth of Tuiarare, who stole the painted basket from the snake and later copied it, they need to see the baskets hanging on the house's ceilings in order to learn new designs and to exchange knowledge from one house or even one village to another. This is a mnemonic aspect of knowledge transmission affected by the economic shift, from subsistence to market oriented.

All these factors together have simplified the diversity of basketry designs known by the Kaiabi with an expected loss of knowledge associated with more complex designs. The "ta'agap" related designs are the more complex ones, and there is a greater variation in the names given to the set of designs encompassed by this general name. I suggest that this loss of knowledge is reflected in the simplification of

the names given for the designs, shifting from more elaborated and complex names to generic ones.

The importance of shamanism as a creative force to reinforce and maintain knowledge of basketry weaving has been highlighted by other authors who have worked with Amazonian groups (Wilbert, 1975; Guss, 1989). Nowadays there are very few Kaiabi shamans, none of them possessing the power of the ancient shamans. Few people in the villages know the myths related to Kaiabi basketry and the deeper meaning of the designs is being forgotten.

In spite of all the problems and limitations on basketry knowledge transmission and perpetuation, the basketry designs still represent strong symbols of Kaiabi identity and power, acknowledged by younger and older generations. To represent their group in the ATIX project on crafts commercialization, they chose a drawing done by a young student depicting a “ta’agap” motif.

The means by which knowledge has been transmitted is also changing from a mainly vertical oriented mechanism (father or grandfather to son) to horizontal patterns, in which men can learn from their nearer or distant kin groups, sometimes learning by observing a friend, an uncle or even an unrelated person.

The workshops and the community-based projects for cultural rescue are other new mechanisms of horizontal knowledge transmission. Most of the middle-aged generations are aware and concerned about knowledge loss, and are willing to do something new and creative to cope with the challenges.

The extension of the analyses of knowledge distribution undertaken here to the other Kaiabi villages, as well as the analysis of the impact of their projects of knowledge creation, distribution and maintenance are central issues for the further development of the present work.

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## APPENDIX I

Questionnaire used for the interviews on basketry knowledge transmission, designed with Aturi, teacher in Tuiarare village indigenous school and Pirapy, Kway'wu and Tamakari, agents for the management of natural resources, June, 2002.

### Men above 15 years old:

1. Name of the chief of the house
2. Name of interviewed person, kinship, place of birth/ brief life history
3. Estimated age
4. Single/married
5. Do you weave baskets? Simple (for daily use) and painted?
6. How did you learn? When?
7. Which designs do you know and what are the names for them (and for the others he does not know how to weave)
8. Can you state in the order in which you learned?
9. What are the baskets used for?
10. Have you ever sold baskets? To whom? Have you ever give it as a present? Have you ever exchanged it? To whom/with whom?
11. Which natural materials do you use for weave a basket? From where do you get them?
12. Is it possible to plant *arumã*?
13. Do you think Kaiabi men are continuing to learn how to weave baskets?
14. If you think knowledge is being lost, do you have any suggestions to solve this problem?

## COMPLEMENTARY QUESTIONS FOR OLDER PEOPLE AND FOR THE SHAMANS

- How did Kaiabi people learn about the graphic patterns represented in the baskets?
- Is there any time in which a man cannot weave (taboos)?
- Do the baskets have "owners" (spirits)?
- Are the baskets used in shaman's work? How?
- How did the basket exchange work between the families and villages in the past? And now?

## APPENDIX II

### PLANT SPECIES USED IN KAIABI BASKETRY

Table 1. Plant species used in Kaiabi basketry.

Kaiabi name	Portuguese name	Family	Species	Habitat	Availability	Uses
Uruyp kuruk	Arumã	Marantaceae	<i>Ischnosyphon gracilis</i>	Swampy forest, black earth forests and riverside forests	Very low, scattered populations in the Xingu Park western region	Main species from which the epidermis of the stems is used for the plaited baskets (simple and painted) and for the “panakũ” (a kind of backpack basket).
Pokop	Banana-brava	Heliconiaceae	<i>Heliconia</i> sp	Swampy forests, non-flooded forests and riverside forests	Medium, relatively big populations can be found in specific places	The leaves are used as a substitute for “arumã” for the body of the baskets and for the “panakũ”.
Myricipe'yp	Buriti	Arecaceae	<i>Mauritia flexuosa</i>	In special dense populations called “buritizais”	Good, the species is well represented in the area	The petiole of the leaf is used for some baskets, mainly not painted.
Panakũwa	Jacitara	Arecaceae	<i>Desmoncus</i> sp	Riverside forests	Medium to low	The stems are used as an arumã substitute and for the “panakũ”.
Takwasing	Taquara	NI	NI	Non-flooded forests and riverside forests	Medium to low	The stems are used for the body of the basket as a substitute for “arumã”.
Tukumã'yp	Tucumã	Arecaceae	<i>Astrocaryum aculeatum</i>	Secondary succession stages of non-flooded forests (“capoeiras”) and of black earth forests	Relatively low, populations are concentrated in some regions within the Park	The young leaves are used for baskets in general and fans.

Continuation.

Kaiabi name	Portuguese name	Family	Species	Habitat	Availability	Uses
Kwasingewi	Taquarinha	NI	NI	Non-flooded forests, in the headings of small river courses	Medium to low	The stems are used as an “arumã” substitute for smaller baskets.
Wywa	Cana-brava	Poaceae	<i>Gynerium sagittatum</i>	Planted in the agricultural plot	High	The stems are used for the baskets, but the quality is bad.
Jemore'yp	Jequitibá	Lecythidaceae	<i>Cariniana</i> sp	Present in very specific places in riverside (small rivers) forests near some villages	Low	From the bark they extract a reddish dye used to decorate the baskets.
Ujupe	-	Myrtaceae	<i>Myrcia deflexa</i>	It occurs in river islands and in secondary succession stages of non-flooded forests	Medium	From the bark of this tree they extract a dye used for gourd impregnation and sometimes (if <i>jemore'yp</i> is not available near the village) to decorate the baskets.
Yrupepepoyta	Cipó	Hippocrateaceae	<i>Salacia</i> cf <i>impressifolia</i> and <i>Pristimera tenuiflora</i>	It is relatively common in non-flooded forests	High	Vine used to make the rim of the baskets.
Panakūap	Cipó	Rubiaceae	<i>Uncaria guianensis</i>	It occurs in some specific regions, in non-flooded forests	Medium to low	Vine used to make the rim of the <i>panakū</i> basket.
Amyneju	Algodão	Malvaceae	<i>Gossypium barbadense</i>	Planted by each family in farm plots	Medium, but some varieties are endangered	Used for the handle of baskets in general.

NI – not identified.

## APPENDIX III

Table 1. General characteristics of people interviewed in the two villages. Codes beginning with “CA” refer to Capivara village, whereas codes beginning with “TU” refer to Tuiarare village.

Code	Name	Age	Place of birth	Kinship and social relations	Weave baskets?
CA011	Jywapan	26	PIX	Temeioni's grandson	No
CA031	Pan	43	Rio dos Peixes	Kupeap's son	Yes
CA032	Towajuwi	23	PIX - Capivara	Pan's son	Yes
CA041	Perun	42	Rio dos peixes	Married to Kupeap's daughter	Yes
CA042	Majuri	16	PIX	Perun's son	No
CA043	Kupeap	76	Rio dos peixes	Temeioni's son, one of the oldest Kaiabi man, expert in basketwork	Yes
CA051	Awatat	36	PIX - Diauarum	One of the teacher of the village	No
CA061	Jemy	25	PIX - Diauarum	Kuperianim's son and teacher of the village	Yes
CA062	Tymari	46	Rio dos peixes	Living temporarily with his granddaughter, Jemy's wife	No
CA071	Kupeianim	55	Rio dos Peixes	Temeioni's son, Kupeap's brother	Yes
CA072	Sirakup	20	PIX	Kupeianim's son and teacher	No
CA081	Jefuka	28	PIX	Kupeianim's son, chief of the village and health agent	Yes
CA101	Jawari	43	Rio dos peixes	vice-chief	No
CA102	Tarea	27	PIX- Diauarum	Jawari's son	Yes
CA111	Takaperun	54	Rio dos peixes	Older man	Yes
CA112	Augusto	24	Rio dos peixes	Takaperun's son in law, came from Rio dos Peixes to live in Xingu recently	No
CA122	Tuwikang	20	PIX - Diauarum	Kanisio's (ex-chief) son , married to Myaokatu's daughter	Yes
CA131	Jawut	35	Teles Pires	Health agent	Yes
CA132	Sirejup	16	Goiania	Jawut's son	No
CA141	Funai	37	Rio dos peixes	Takaperun's son	No
TU011	Myaui	36	Teles Pires	Their parents died, he came from Teles Pires when he was already married	Yes

Code	Name	Age	Place of birth	Kinship and social relations	Weave baskets?
TU012	Jywa	16	PIX	Myuaii's son	No
TU021	Masia	75	Teles Pires	Older man	Yes
TU022	Mairi	19	PIX	Masia's son	No
TU031	Xupe	70	Teles Pires	Older man	Yes
TU032	Jepyk	33	Teles Pires	Xupe's son	Yes
TU041	Maikatu	40	Teles Pires	Son of Masia's first wife	No
TU042	Piraete	15	PIX	Maikatu's son	No
TU051	Sirawejup	25	PIX	Lives with his mother, father died	No
TU052	Tu'ã	18	PIX	Sirawejup's brother	No
TU061	Tare'i	24	PIX	Pasi's son, health agent	Yes
TU071	Oscar	30	Cuiabá	André's son	No
TU072	Jari	18	PIX	Pirapy's brother	No
TU081	Tymain	32	PIX	Masia's son, André's son in law	Yes
TU091	Kwapyka (André)	42	Cuiabá	He grew up in Cuiabá and married a Nambikwara woman	No
TU092	Tapi	21	PIX	André's son, studied in the city	No
TU093	Kaku	17	PIX	André's son, studied in the city	No
TU101	Jamanary	24	PIX	Aturi's son	No
TU121	Aturi	40	PIX	Xupé's son, teacher of the village and coordinator of the project for cultural rescue of basketry and textiles	Yes
TU122	Piraju	19	PIX	Aturi's son	No
TU123	Tamakari	16	PIX	Aturi's son	No
TU131	Jurupewi	72	Arinos	Older man	No
TU141	Pasi	50	Rio dos peixes	Kaipa's son	No
TU151	Miaracaja	45	Teles Pires	Father died, Masia's nephew	Yes
TU161	Pikuruk	21	PIX	Teacher, Pasi's son	No

Table 2. Places of birth of the people interviewed in Capivara and Tuiarare expressed as a percentage of the total.

Place of birth	Capivara village	Tuiarare	Total (n=45)
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	<b>(n=20)</b>	<b>village (n=25)</b>	
Xingu Indigenous Park (PIX)	45%	60%	53%
Rio dos Peixes	45%	4%	22%
Rio Teles Pires	5%	28%	18%
Cuiabá	0	8%	5%
Goiânia	5%	0	2%

## APPENDIX IV

### Gallery of designs, names and meanings in Kaiabi basketry

Table showing the Kaiabi names for the graphic designs and the translation of meanings of the names in English. Elaborated with the teacher Aturi at Tuiarare village, June, 2003.

DESIGN NAMES	MEANINGS
Araa	Design, draw, painted draw
Awara pypot	Footprint of a type of wild dog
Awasiayj	Maize grain
Inimo eta	Cotton yarns
Ipirien	Points that cross, scraped design
Iwirafu'a	A vine rolled up
Iwirapyj	A vine or the way of a vine
I'yp	My way, my tree, a way to be followed
Janipap wuu	A big fruit of "genipapo" ( <i>Genipa americana</i> )
Jarukang	Ribs
Jowiterian	Parallel design that goes without stopping
Jowosiape	Turtle shell
Jywa pekangerowat	Arms bent
Kururu'l	Small frog
Kwasiapiayj	Draw of a little finger, a little curve
Kwasiarapat	Kwasiat means design, graphics, a design which is turning for one side and another
Kwasiaruu	A big design or figure
Moiafu'a	Snake rolled up
Panakukupe	Design of the back side of the panaku basket
Ta'agafu'a	Human figure rolled up
Ta'agafu'a ea'em	Human figure without eyes (cf)
Ta'agafu'a tayt	Human figure, the rolled up Ta'agap kid
Ta'agap jojep	Twin human figures, two figures linked
Ta'agap tayt	Human figure, the Ta'agap kid
Ta'agawoku	A long human figure
Ta' agap	Draw, photograph, a human figure
Ta' agap jakunaap	Human figure in the shape of a cross, cross figure
Yogajurat	Larvae of an insect, rolled up or bent
Yogii	Small larvae of an insect
Yok	Larvae of an insect
Yowawat	Larvae of an insect

**Photographs and drawings of the graphic designs  
used in interviews**

**TWILL – PLAITED BASKETS**



**PE 1** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Araa, Ta'agafu'a, Ta'agafu'a tayt, Ta'agap tayt, Ta'agawoku. Name given by Kupeap Kaiabi: Ta'agap tayt.



**PE 1A** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Araa, Ta'agafu'a, Ta'agafu'a tayt, Ta'agap tayt, Ta'agawoku. Name given by Kupeap Kaiabi: Ta'agap tayt.



**PE 2** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Ta'agafu'a, Ta'agafu'a tayt.

Name given by Kupeap Kaiabi: Jywa pekangerowat.



**PE3** – Photograph taken by Simone Athayde, Kururu village, 1999. Artisan: Preajup Kaiabi. Dimensions: 28 cm height, 30 cm width.

Names given by the participants: Ta'agafu'a, Ta'agap.

Name given by Kupeap Kaiabi: Ta'agap jopep.



**PE3A** – Photograph taken by Simone Athayde, Kururu village, 1999. Artisan: Preajup Kaiabi. Dimensions: 26 cm height, 26 cm width.

Names given by the participants: Ta'agafu'a.

Name given by Kupeap Kaiabi: Ta'agap jojep.



**PE 4** – Basket from the collection of the Museum of Archaeology and Ethnology of the University of São Paulo – MAE/ USP. Collected by Georg Grünberg at Rio dos Peixes, MT, 1966. Photograph: Patrícia Di Filippi.

Names given by the participants: Araa, Ta'agap jojep, Ta'agap tayt.

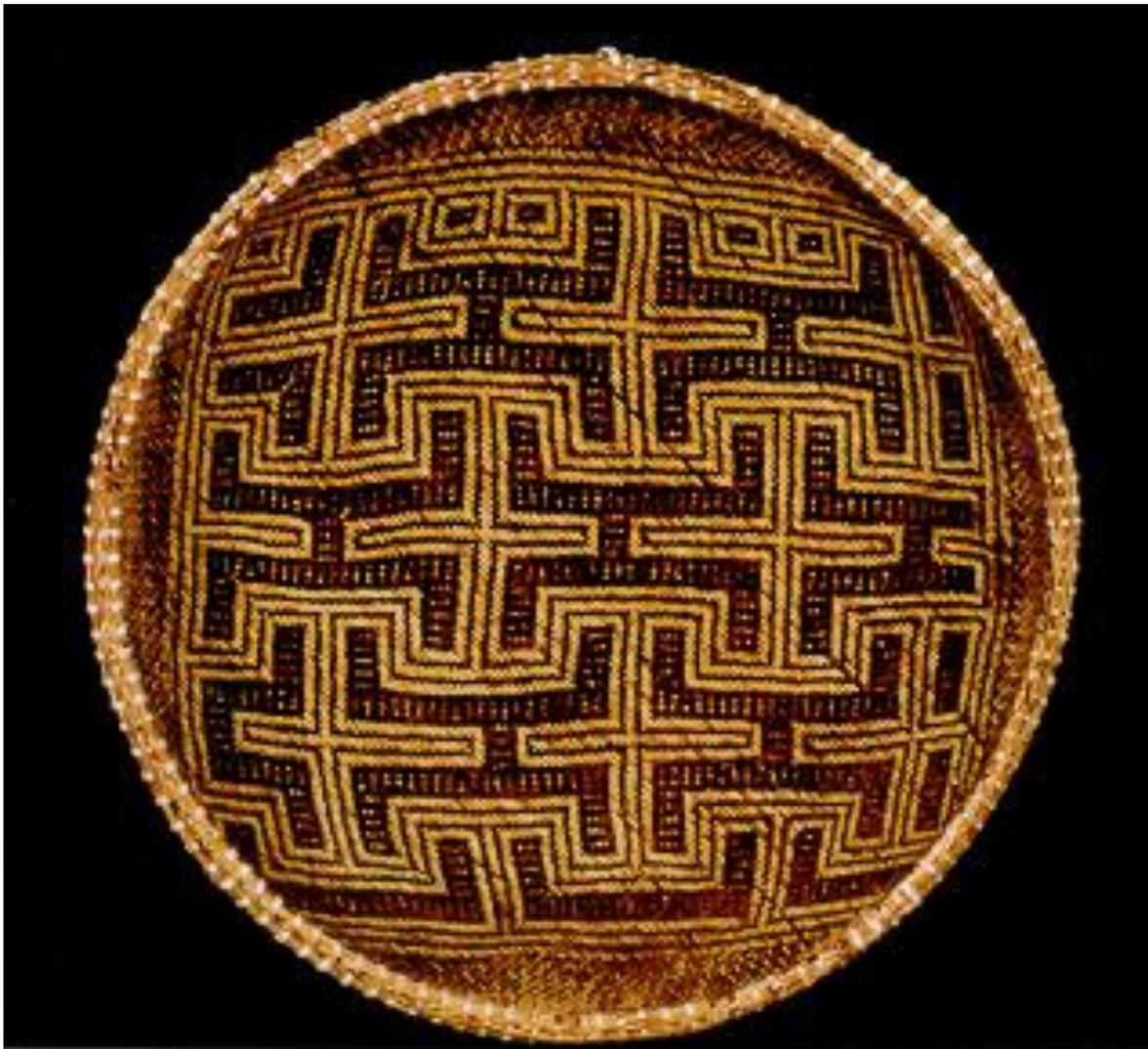
Name given by Kupeap Kaiabi: Ta'agap jojep.



**PE 5** – Basket from the collection of the Museum of Archaeology and Ethnology of the University of São Paulo – MAE/ USP. Collected by Georg Grünberg at Rio dos Peixes, MT, 1966. Photograph: Patrícia Di Filippi.

Names given by the participants: Ta'agafu'a.

Name given by Kupeap Kaiabi: Taangap jakunaap.



**PE 6** – Basket from the private collection of Simone Athayde and Geraldo Silva, 1998. Photograph: Patrícia Di Filippi.

Names given by the participants: Ta'agafu'a.

Name given by Kupeap Kaiabi: Ta'agafu'a.



**PE 7-** Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Ta'agafu'a, Ta'agafu'a ea'em, Ta'agawoku.

Name given by Kupeap Kaiabi: Ta'agafu'a.

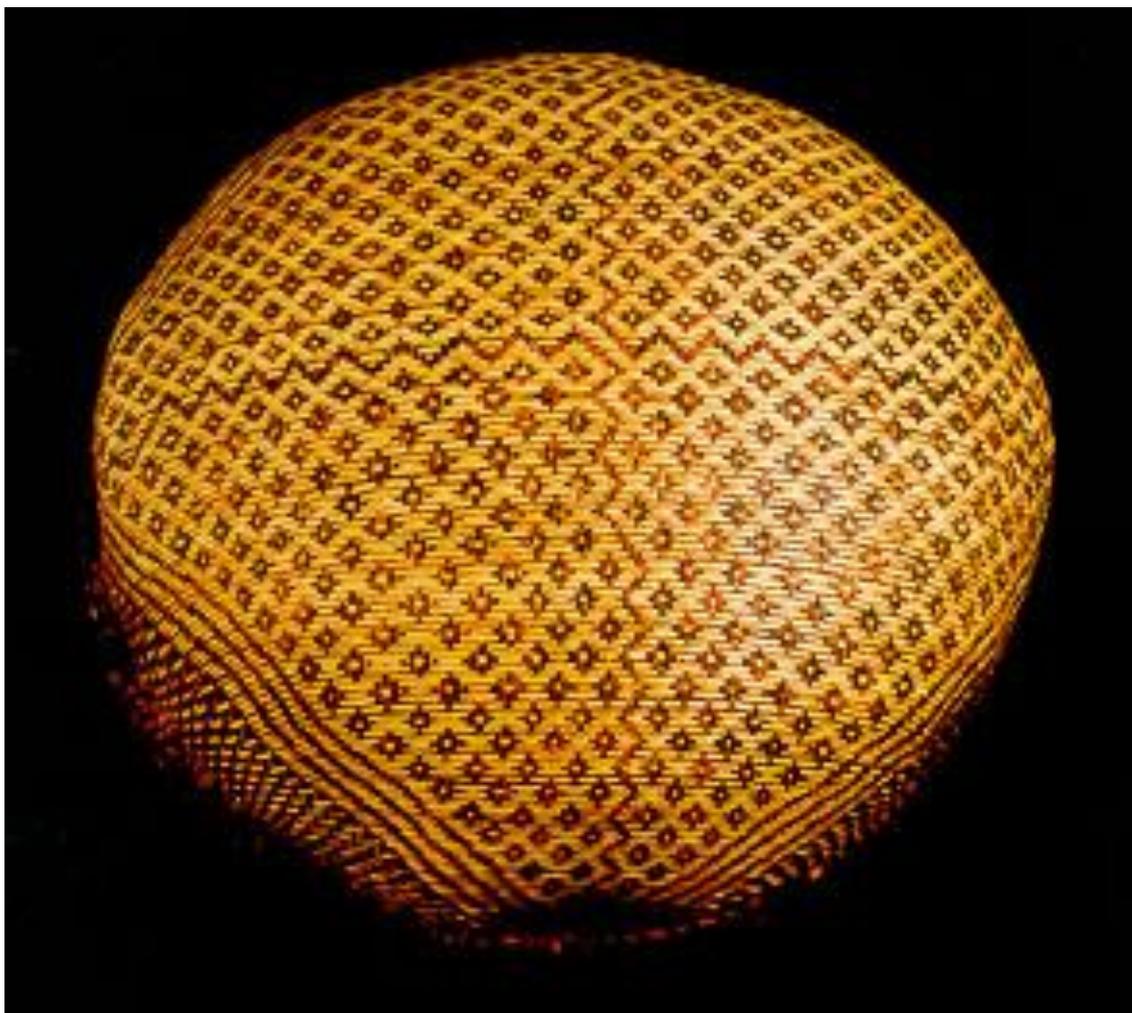


**PE 8** – Basket from the collection of the National Museum at Rio de Janeiro, collected by Berta Ribeiro at Xingu Indigenous Park in 1977. Registered under the number MN 39642. Photograph: Klinton Senra.

Names given by the participants: Kwasiarapat.

Name given by Kupeap Kaiabi: Kwasiarapat.





**PE 9** – Basket from the collection of the Museum of Archaeology and Ethnology of the University of São Paulo – MAE/ USP. Collected by Georg Grünberg at Rio dos Peixes, MT, 1966. Photograph: Patrícia Di Filippi.

Names given by the participants: Awasiayj.

Name given by Kupeap Kaiabi: Awasiayj.

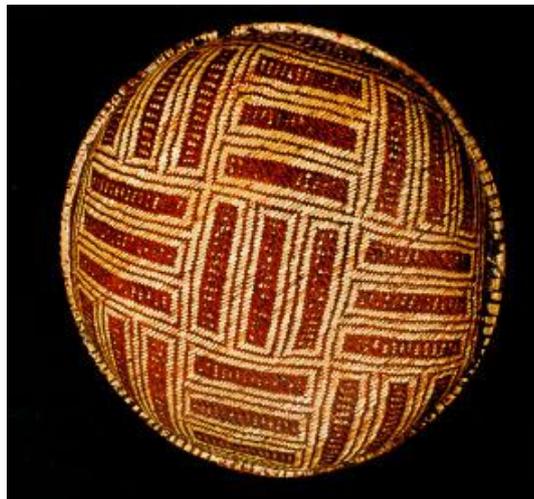


**PE 10** – Above, photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Jowiterian, Inimo eta, Yogajurat, Yok.

Name given by Kupeap Kaiabi: Yogii.

Below, basket made by Kupeap Kaiabi at Capivara village, Xingu Indigenous Park, 1999. Photograph: Patrícia Di Filippi.

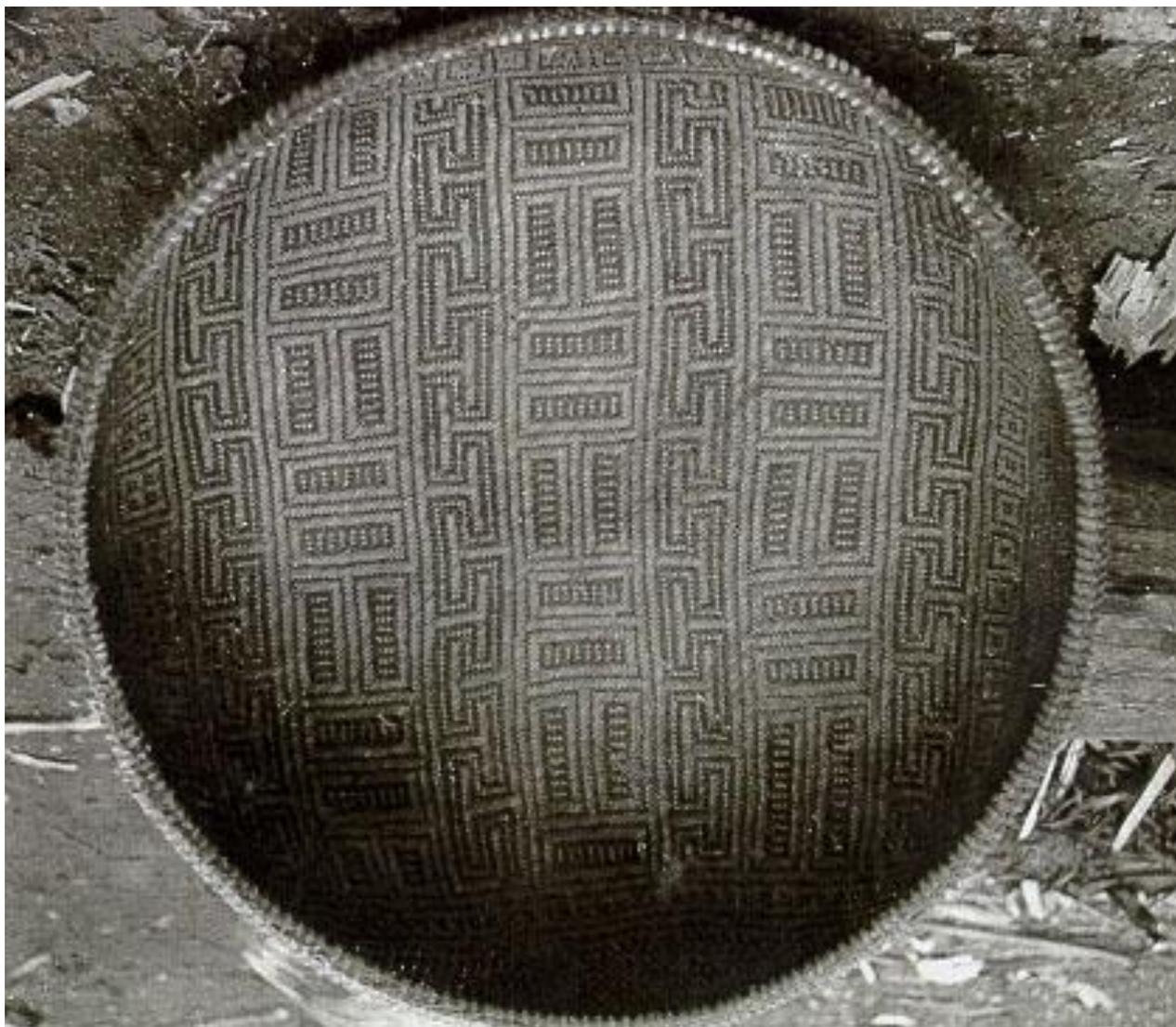




**PE 11** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Iwirapyj.

Name given by Kupeap Kaiabi: Iwirapyj.



**PE 12** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Iwirapyj and inimo eta, Iwirapyj, Iwirapyj and yogajurat, Iwirapyj and Yogii, Jarukang and jowiterian.

Name given by Kupeap Kaiabi: Yogii and iwirapyj.



**PE 12A** – Basket made by Owit Kaiabi (in memoriam) at Maraka village, Xingu Indigenous Park, 1998. Photograph: Simone Athayde.

Names given by the participants: Iwirapyj and inimo eta, Iwirapyj, Iwirapyj and yogajurat, Iwirapyj and Yogii, Jarukang and jowiterian.

Name given by Kupeap Kaiabi: Yogii and iwirapyj.



**PE 13** – Basket from the collection of the National Museum at Rio de Janeiro, collected at Rio Teles Pires in 1957. Not painted. Registered under the number MN 6310. Photograph: Klinton Senra.

Names given by the participants: Jowiterian. Name given by Kupeap Kaiabi: Jowiterian.

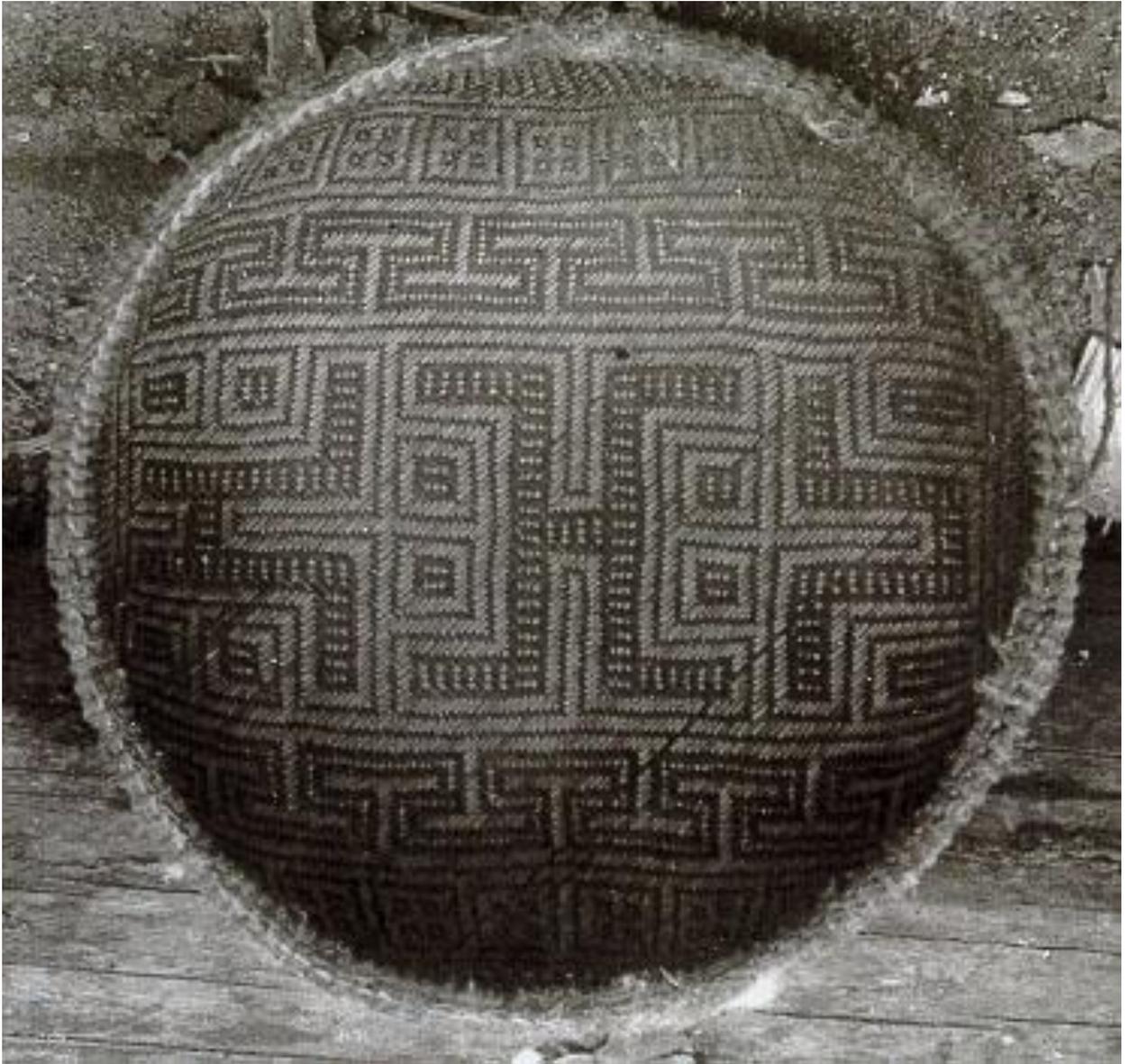




**PE 14-** Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Ta'agafu'a tayt.

Name given by Kupeap Kaiabi: Ta'agap tayt.



**PE 15** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Ta'agafu'a. Name given by Kupeap Kaiabi:  
Ta'agafu'a.



**PE 16** - Basket made by Tari Kaiabi, Kururu village, Xingu Indigenous Park, 1998. The raw material used was “buriti” (*Mauritia vinifera*, ARECACEAE). Dimensions: height 22 cm, width 24 cm. Photograph: Patrícia Di Filippi.

Names given by the participants: Kururu'i. Name given by Kupeap Kaiabi: Kururu'i.



**PE 17** – Basket from the collection of the National Museum at Rio de Janeiro, collected at Rio Teles Pires in 1955. Registered under the number MN 6309. Photograph: Klinton Senra.

Names given by the participants: Awasiayj. Name given by Kupeap Kaiabi: Awasiayj.





**PE 18** – Basket made by Tymari Kaiabi, Kururu village, Xingu Indigenous Park, 1998. The raw material used was “buriti” (*Mauritia vinifera*, ARECACEAE). Photograph: Patrícia Di Filippi.

Names given by the participants: Awasiayj. Name given by Kupeap Kaiabi: Awasiayj.





**PE 19** – Basket made by Miracaja Kaiabi, Tuiarare village, Xingu Indigenous Park, 1997. Photograph: Patrícia Di Filippi.

Names given by the participants: Kwasiapiayj.

Name given by Kupeap Kaiabi: Kwasiapiayj.





**PE 20** – Basket made by Kainã Kaiabi (in memoriam), Capivara village, Xingu Indigenous Park, 1998. The raw material used was “buriti” (*Mauritia vinifera*, ARECACEAE). Photograph: Patrícia Di Filippi.

Names given by the participants: Kwasiarapat.

Name given by Kupeap Kaiabi: Kwasiarapat.



**PE 21** – Basket made by Kawe Kaiabi, Arraias village, Xingu Indigenous Park, 1998. Photograph: Patrícia Di Filippi.

Names given by the participants: Moiafu'a.

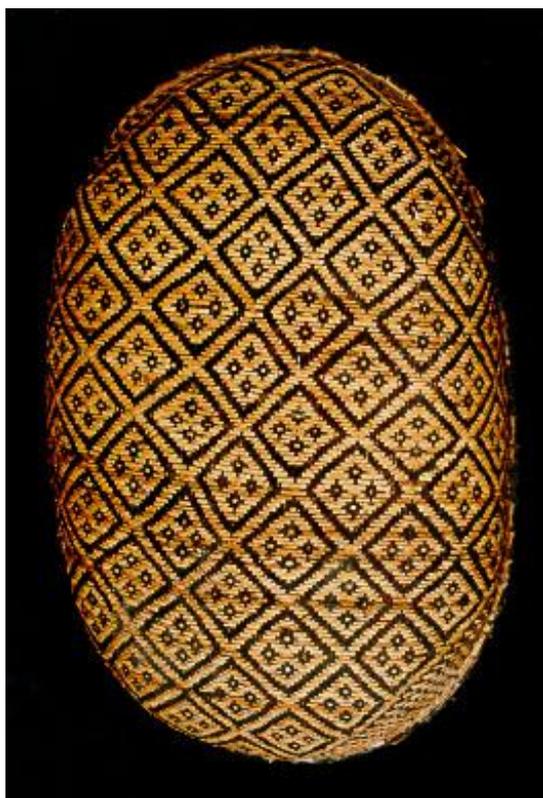
Name given by Kupeap Kaiabi: I'yp.



**PE 22** – Basket made by Kawe Kaiabi, Arraias village, Xingu Indigenous Park, 1998. Photograph: Patrícia Di Filippi.

Names given by the participants: Janipap wuu, Kwasiarapat.

Name given by Kupeap Kaiabi: Janipap wuu.



**PE 23** – Basket from the private collection of Simone Athayde and Geraldo Silva, 1998. Photograph: Patrícia Di Filippi.

Names given by the participants: Awarapypot.

Name given by Kupeap Kaiabi: Awasiayj.





**PE 24** – Basket made by Kawe Kaiabi, Arraias village, Xingu Indigenous Park, 1998. Photograph: Patrícia Di Filippi.

Names given by the participants: Ipirien, Jarukang, Jarukang and Ipirien.

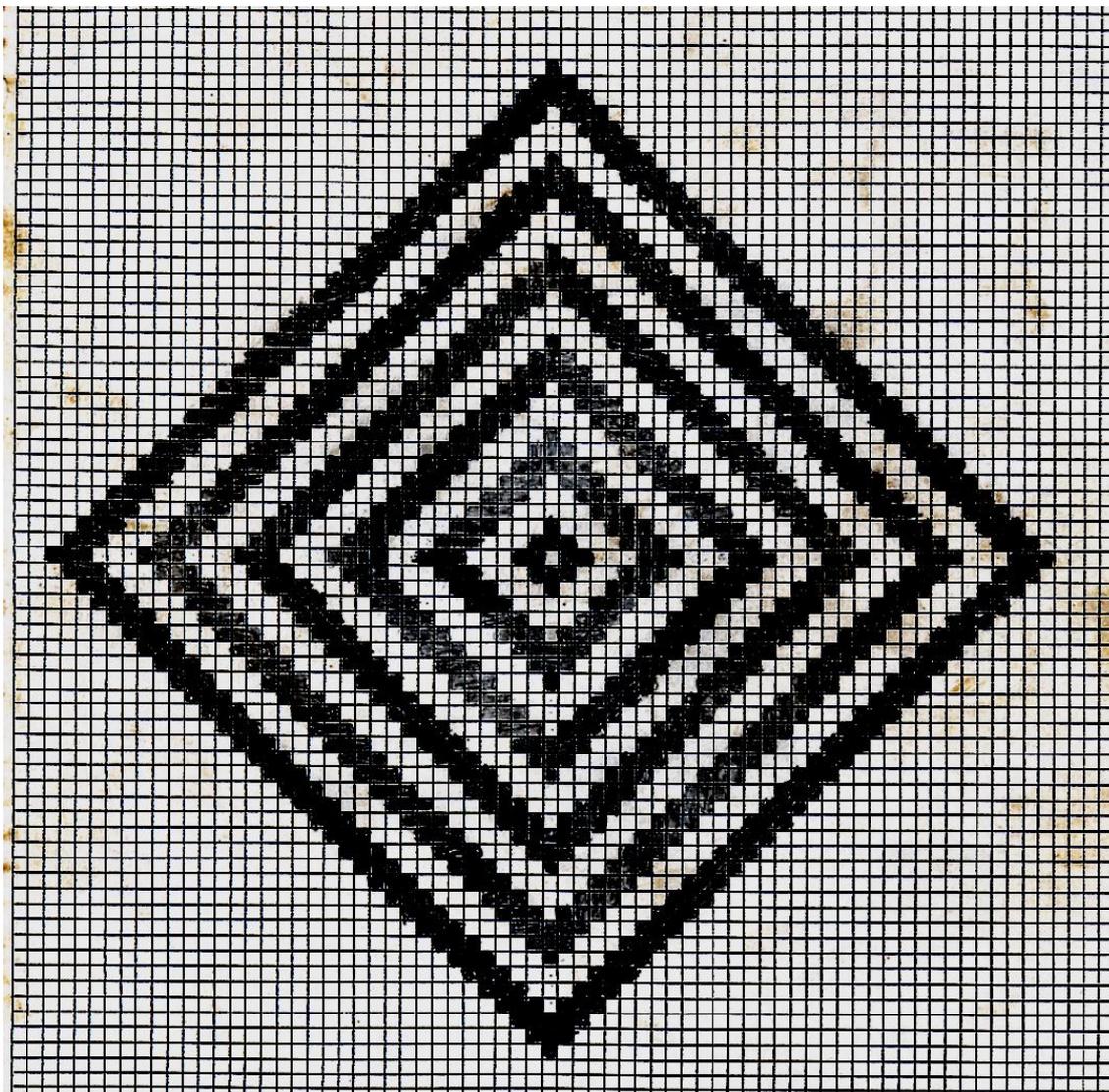
Name given by Kupeap Kaiabi: Jarukang.



**PE 25** – Drawing by Pirapy, Tamakari and Kway'wu Kaiabi, Xingu Indigenous Park, 2001.

Names given by the participants: Jowosiape.

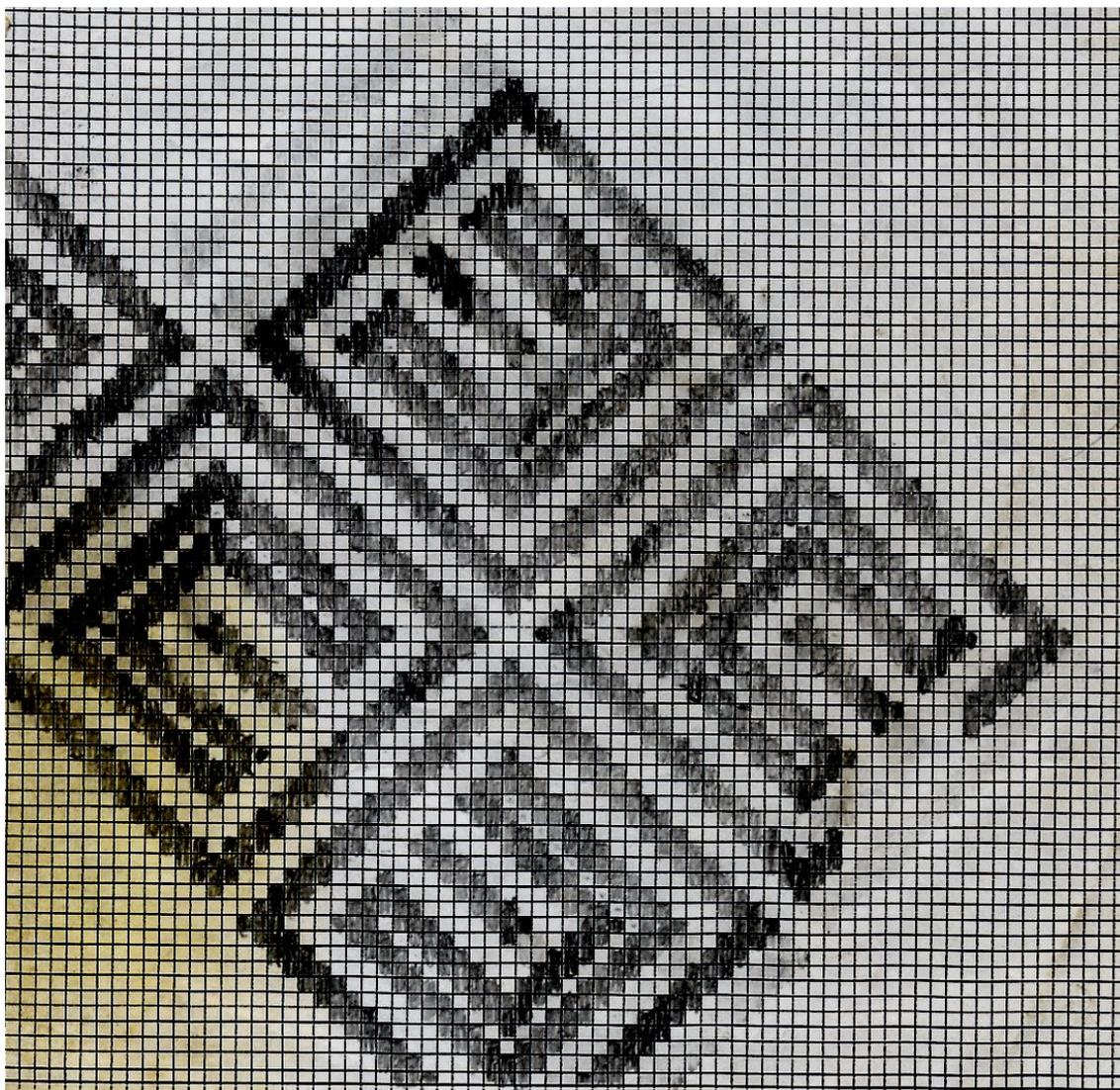
Name given by Kupeap Kaiabi: Jowosiape.



**PE 26** – Drawing by Pirapy, Tamakari and Kway'wu Kaiabi, Xingu Indigenous Park, 2001.

Names given by the participants: l'yp.

Name given by Kupeap Kaiabi: l'yp.



**PE 27** - Drawing by Wareajup Kaiabi, Diauarum Indigenous Post, Xingu Indigenous Park, 2001.

Names given by the participants: Yogajurat.

Name given by Kupeap Kaiabi: Yogajurat.

**PANAKU**  
**TWILL-PLAITED “BACKPACK” BASKET**



**PA1** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Kwasiarapat.

Name given by Kupeap Kaiabi: Kwasiarapat.



**PA1A** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Kwasiarapat.

Name given by Kupeap Kaiabi: Kwasiarapat.



**PA2** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Ipirien and/or Jarukang.

Name given by Kupeap Kaiabi: Ipirien.



**PA3** – Photograph taken by Georg Grünberg at Rio dos Peixes, 1966.

Names given by the participants: Kwasiarapat or Kwasiapiayj.

Name given by Kupeap Kaiabi: Jarukang.



**PA4** – Basket from the collection of the National Museum, Rio de Janeiro, under the register MN 6307. Collected at Rio Teles Pires in 1955. Photograph: Klinton Senra.

Names given by the participants: Kwasiarapat.

Name given by Kupeap Kaiabi: Kwasiarapat.



**PA 5** – Basket from the collection of The National Museum, Rio de Janeiro, under the register MN 6307. Collected at Rio Teles Pires in 1955. Photograph: Klinton Senra.

Names given by the participants: Panakukupe (back part).



**PA 6** - Basket from the collection of the National Museum, Rio de Janeiro, under the register MN 6307. Collected at Rio Teles Pires in 1955. Photograph: Klinton Senra.

Names given by the participants: Awarapypot.

Name given by Kupeap Kaiabi: Awarapypot.

## APPENDIX V

### Statistics related to uses and names of the basketry designs

Table 1. Percentage of weavers who know the names and/or weave each basketry design.

Designs Codes	VILLAGES				Total %	
	Cativara %		Tuiarare %		Name	Weave
	Name	Weave	Name	Weave		
PA1	25.00	8.33	62.50	12.50	40.00	10.00
PA2	25.00	16.67	37.50	25.00	30.00	20.00
PA3	25.00	16.67	37.50	12.50	30.00	15.00
PA4	16.67	0.00	50.00	12.50	30.00	5.00
PA5	8.33	0.00	37.50	12.50	20.00	5.00
PA6	25.00	0.00	62.50	25.00	40.00	10.00
PE1	25.00	8.33	62.50	12.50	40.00	10.00
PE2	8.33	8.33	62.50	12.50	30.00	10.00
PE3	16.67	8.33	50.00	12.50	30.00	10.00
PE3A	16.67	8.33	25.00	12.50	20.00	10.00
PE4	16.67	8.33	25.00	12.50	20.00	10.00
PE5	8.33	8.33	50.00	12.50	25.00	10.00
PE6	25.00	8.33	50.00	12.50	35.00	10.00
PE7	8.33	0.00	25.00	25.00	15.00	10.00
PE8	16.67	0.00	25.00	12.50	20.00	5.00
PE9	33.33	8.33	62.50	50.00	45.00	25.00
PE10	16.67	16.67	50.00	62.50	30.00	35.00
PE11	33.33	8.33	50.00	12.50	40.00	10.00
PE12	33.33	8.33	37.50	0.00	35.00	5.00
PE13	25.00	16.67	50.00	50.00	35.00	30.00
PE14	16.67	8.33	37.50	12.50	25.00	10.00
PE15	16.67	8.33	75.00	25.00	40.00	15.00
PE16	58.33	16.67	100.00	37.50	75.00	25.00
PE17	75.00	33.33	100.00	75.00	85.00	50.00
PE18	66.67	33.33	100.00	75.00	80.00	50.00
PE19	33.33	0.00	87.50	25.00	55.00	10.00
PE20	33.33	16.67	25.00	0.00	30.00	10.00
PE21	16.67	8.33	75.00	37.50	40.00	20.00
PE22	25.00	8.33	62.50	12.50	40.00	10.00
PE23	33.33	25.00	100.00	75.00	60.00	45.00
PE24	66.67	58.33	75.00	62.50	70.00	60.00
PE25	41.67	8.33	0.00	0.00	25.00	5.00
PE26	100	100	100	100	100	100
PE27	25.00	16.67	25.00	25.00	25.00	20.00

## NAMES GIVEN TO BASKETRY DESIGNS

Table 2. Percentage of answers for the names of panakū designs.

DESIGN NAMES	PA1	PA2	PA3	PA4	PA5	PA6
Araa						
Awara pypot				5		40
Awasiayj						
Inimo eta						
Ipirien		10				
Iwirafu'a						
Iwirapyj	5		5			
Iwirapyj, yogajurat						
Iwirapyj, Inimo eta						
I'yp						
Janipap wuu						
Jarukang		15				
Jowiterian						
Jowosiape						
Jywa pekangerowat						
Kururu'i						
Kwasiapiayj	5		10	5		
Kwasiarapat	25		15	15	5	
Kwasiaruu						
Moiafu'a						
Panakukupe					10	
Ta'agafu'a					5	
Ta'agafu'a ea'em						
Ta'agafu'a tayt						
Ta'agap jopep						
Ta'agap tayt				5		
Ta'agawoku	5					
Taangap						
Taangap jakunaap						
Yogajurat						
Yogii						
Yogii, iwirapyj						
Yok						
Yowawat						
Jarukang, ipirien		5				
Jarukang, jowiterian						





Table 5. Percentage of answers for the names of basket designs.  
From PE21 to PE27.

DESIGN NAMES	PE21	PE22	PE23	PE24	PE25	PE26	PE27
Araa		5					
Awara pypot			50				
Awasiayj			10				
Inimo eta							
Ipirien				15			
Iwirafu'a	5						
Iwirapyj	5						
Iwirapyj, yogajurat							
Iwirapyj, Inimo eta							
I'yp	5					80	
Janipap wuu		15		5			
Jarukang				30			
Jowiterian							
Jowosiape					20		
Jywa pekangerowat							
Kururu'i							
Kwasiapiayj		5					
Kwasiarapat		10			5		
Kwasiaruu	5	5					
Moiafu'a	20						
Panakukupe							
Ta'agafu'a							
Ta'agafu'a ea'em							
Ta'agafu'a tayt							
Ta'agap jojep							
Ta'agap tayt							
Ta'agawoku							
Taangap							
Taangap jakunaap							
Yogajurat							20
Yogii							
Yogii, iwirapyj							
Yok							
Yowawat							5
Jarukang, ipirien				20			
Jarukang, jowiterian							

Table 6. Kaiabi names for basketry graphic designs, mentioned by more than one person (minimum 10% percentage of interviewed people), and names given by Kupeap Kaiabi (CA043).

Code	Kaiabi names for the designs	Names given by Kupeap Kaiabi
PA1	Kwasiarapat	Kwasiarapat
PA2	Ipirien and/or Jarukang	Ipirien
PA3	Kwasiarapat or Kwasiapiayj	Jarukang
PA4	Kwasiarapat	Kwasiarapat
PA5	Panakukupe	Awara pypot
PA6	Awarapypot	Awara pypot
PE1	Araa, Ta'agafu'a, Ta'agafu'a tayt Ta'agap tayt, Ta'agawoku	Ta'agap tayt
PE2	Ta'agafu'a, Ta'agafu'a tayt	Jywa pekangerowat
PE3	Ta'agafu'a, Ta'agap	Ta'agap jojep
PE3A	Ta'agafu'a	Ta'agap jojep
PE4	Araa, Ta'agap jojep, Ta'agap tayt	Ta'agap jojep
PE5	Ta'agafu'a	Taangap jakunaap
PE6	Ta'agafu'a	Ta'agafu'a
PE7	Ta'agafu'a, Ta'agafu'a ea'em, Ta'agawoku	Ta'agafu'a
PE8	Kwasiarapat	Kwasiarapat
PE9	Awasiayj	Awasiayj
PE10	Jowiterian, Inimo eta, Yogajurat, Yok	Yogii
PE11	Iwirapyj	Iwirapyj
PE12	Iwirapyj and inimo eta, Iwirapyj, Iwirapyj and yogajurat, Iwirapyj and Yogii, Jarukang and jowiterian	Yogii, iwirapyj
PE13	Jowiterian	Jowiterian
PE14	Ta'agafu'a tayt	Ta'agap tayt
PE15	Ta'agafu'a	Ta'agafu'a
PE16	Kururu'i	Kururu'i
PE17	Awasiayj	Awasiayj
PE18	Awasiayj	Awasiayj
PE19	Kwasiapiayj	Kwasiapiayj
PE20	Kwasiarapat	Kwasiarapat
PE21	Moiafu'a	I'yp
PE22	Janipap wuu, Kwasiarapat	Janipap wuu
PE23	Awara pypot	Awasiayj
PE24	Ipirien, Jarukang, Jarukang and Ipirien	Jarukang
PE25	Jowosiape	Jowosiape
PE26	I'yp	I'yp
PE27	Yogajurat	Yogajurat

Table 7 – Model for sequence of learning basket designs between the Kaiabi from Capivara and Tuiarare.

Design Codes	Names	Sequence of learning (%of weavers)				
		1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	4 <sup>TH</sup>	5 <sup>TH</sup>
PE26	I'yp	65	10			
PE17	Awasiayj	15	10	15		
PE18	Awasiayj	15	10	10		
PE24	Jarukang/ipirien	10	20	10	10	
PE9	Awasiayj	10				
PE23	Awarapypot		15	15		
PE16	Kururu'i				10	
PE10	Inimoeta					10