

## VILLAGE FISSIONING IN AMAZONIA: A CRITIQUE OF MONOCAUSAL DETERMINISM

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**RESUMO:** Esse trabalho faz uma crítica a teorias deterministas que postulam a existência de fatores ambientais limitantes ao desenvolvimento cultural na Amazônia. Dois estudos de caso baseados em dados etnográficos são apresentados para embasar essa crítica. Como alternativa, é sugerida uma hipótese baseada no conceito de “modo de produção doméstico”.

**UNITERMOS:** Determinismo ecológico – Mudança cultural na Amazônia – Modo de produção doméstico.

### Introduction

For almost half a century, the leading Amazonian archaeologists have disagreed on almost everything related to the pre-colonial history of the region. The disagreements ranged from considerations about the poverty of the environment relative to the support of long-term human occupations (Lathrap, 1968a, 1970, 1977; Meggers, 1954, 1970, 1977, 1979, 1982, 1989; Meggers & Evans, 1957, 1983; Meggers *et al.*, 1988); the loci of supposed centers of cultural innovation within or outside Amazonia (Evans & Meggers, 1968; Lathrap, 1970, 1973, 1974, 1977; Meggers & Evans, 1957, 1983); the relative importance of manioc or maize as major food staples for flood plain societies (Lathrap, 1970; Lathrap, Gebhart-Sayer & Mester, 1985; Roosevelt, 1980); the use of linguistic evidence in setting clues to explain the origin and patterns of distribution of pre-colonial societies (Lathrap, 1970, 1972; Meggers, 1977, 1979, 1982);

the role of climatic changes as mechanisms preventing demographic growth (Meggers, 1977, 1979, 1982; Meggers & Danon, 1989), among other topics.

That most of these questions remain unanswered is not surprising in light of the vast size of Amazonia and the logistical and methodological problems related to doing archaeological fieldwork there. It is possible though to identify at least one basic issue that divides the group of scholars outlined above. On one side there are the ones that support a notion of marginality for Amazonia. In this perspective Amazonia is a peripheral area in South America in terms of cultural development, a recipient of populations and cultural innovations originated elsewhere. This general point of view has as its stronger proponent Betty Meggers of the Smithsonian Institution, and her Brazilian colleagues of the PRONAPABA (Programa Nacional de Pesquisas Arqueológicas na Bacia Amazônica). On the other side, the late Donald Lathrap and Anna Roosevelt, although often in disagreement with each other, have similarly maintained priority for Amazonia in terms of various broad innovations in the Americas such as, for instance, the origins

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of food production (Lathrap, 1977) and pottery (Roosevelt *et al.*, 1991).

While Meggers has repeatedly postulated a relatively late and discontinuous peopling of Amazonia (Meggers & Evans, 1983), characterized by settlements of short duration due to soil depletion or drastic climatic changes (Meggers, 1954, 1974, 1985, 1991; Meggers & Danon, 1989); Lathrap and Roosevelt have individually emphasized the long-term occupation of Amazonia, mainly along the floodplains, which they believe would have been continually occupied by semi-sedentary populations at least from the beginning of the Holocene. Such successful long-term adaptation would be guaranteed by an effective exploitation of a combination of riverine and terrestrial resources (Lathrap, 1968b, 1970, 1977; Roosevelt, 1989).

The archaeological data to support either side is still fairly scanty, so one's given perspective remains more a matter of faith than a matter of fact. To counterbalance the lack of data from the ground, archaeologists have turned to ethnographies and early colonial chronicles to support their contending perspectives. Both sets of data have also their own problems, sometimes overlooked by archaeologists too eager to find in them the confirmation of their beliefs. Early chronicles are not numerous and often vague, while late nineteenth century and twentieth centuries ethnographies represent societies that were likely to have been deeply transformed by the European conquest.<sup>1</sup>

In their search for subsidiary arguments to support their contending claims, archaeologists working in Amazonia have also – even if from different perspectives – systematically turned to ecological data. Ecological anthropology has had an important influence on Amazonian archaeology since the 1940s (see for instance Meggers, 1954, 1970, 1982, 1989; Meggers & Evans, 1957, 1983; Lathrap, 1968a, 1968b, 1970, 1977; 1980; Roosevelt, 1989, 1991a, 1991b), partially because of Julian Steward's work as the editor of the "Handbook of South American Indians".<sup>2</sup> The "Handbook" was not only a compilation of the then

available data on native South Americans, but due to Steward's editorship, it was also an attempt to classify Amerindian societies according to a developmental framework based on a combination of geographical and ecological principles. Steward's ideas were clearly appealing to archaeologists working in Amazonia. He presented a developmental sequence that could only be assessed through archaeology and it dealt with a set of phenomena, related to adaptive patterns, that were potentially identifiable in the archaeological record.

Regardless their differences, Meggers, Lathrap and Roosevelt all share a basic assumption derived from the ecological approach: they all emphasize the basic distinction between floodplain – "várzea" – and hinterland – "terra firme" – environments in Amazonia (Lathrap, 1970; Meggers, 1971; Roosevelt, 1980). According to this distinction, populations settled along the major floodplains of the Amazonian whitewater rivers could have a permanent and predictable intake of animal protein and fat through fishing and intensive cultivation of staples like manioc, maize and beans. The densely populated villages the Europeans found along the Amazon and its major tributaries in the sixteenth century or the mounds of Marajó Island would be then supported by these productive activities.

In the hinterlands, on the other side, major ecological constraints would determine the ephemeral existence of the settlements. The poverty of the soils, the scarcity of terrestrial games, and the distance from the major streams would limit hinterland populations in terms of cultivation and fishing. As a consequence, a fragile subsistence strategy developed in these settings, based on slash and burn cultivation of manioc, hunting, gathering and fishing. Because of this productive basis, this adaptation was not able to support large, stable settlements (Lathrap 1970; Meggers, 1971; Roosevelt, 1980). Two major environmental forces would then account for the short duration, small size and low population density of hinterland settlements: a scarcity of predictable and reliable sources of animal protein; and the poor quality of soils for intensive agriculture. The seemingly lack of archaeological evidences for densely populated villages in the hinterlands were taken as a confirmation of this belief. Given the underlying evolutionist background of cultural ecology, constant village movement and fissioning were identified as major obstacles to the development of complex forms of social

(1) This latter point has emphatically been stressed by Myers (1973) and Roosevelt (1989).

(2) Roosevelt (1980) and Hames & Vickers (1983) provide thorough reviews on the influence of cultural ecology on archaeological and ethnographic works done in Amazonia.

organization. The basic assumption here is the belief that a “large, nucleated, sedentary population is a necessary condition for the development of a complex society” (Gross, 1975: 526).

There are, however, at least four major problems with the above assumptions. First, the division hinterlands/floodplains as the two basic ecosystems units, when it becomes clearer that the ecological diversity of Amazonia is much wider (Moran, 1990: 137). Second, the assertion that agricultural soils and animal protein represent scarce resources in the hinterlands, when there are no data enough to support this claim (Beckerman, 1979; Carneiro, 1957; Chagnon, 1983; Moran, 1990). Third, the passive way these hypotheses focus native Amazonian populations, ignoring the transformations they perform over the environment in order to overcome possible limiting factors (Balée, 1989). Fourth, these assumptions all share a monocausal determinism, or the belief that a single environmental variable can account for a range of social processes.<sup>3</sup>

The discussion of this latter issue will take the remainder of this paper. It will be shown that among two contemporary Amazonian Indigenous societies, the Yanomami and Kayapó, documented village fissioning and movement were consistently the outcome of political tensions rather than of ecological limitations. The implications of these data will be further discussed and it will be suggested that by shifting the unity of analysis from focusing on *what* is produced, to focusing on *how* production – and distribution, consumption and reproduction – are realized another explanation to village fissioning and movement can be attained.

### **Two case studies: village fissioning among two Yanomami and Kayapó population blocs**

The Yanomami and Kayapó are different Indigenous societies with different histories and located in widely different areas of the Amazon Basin. There are however available data on pro-

cesses of village fissioning or movement for Yanomami and Kayapó “population blocs”<sup>4</sup> dating back from the beginning of the twentieth century, what warrants a comparative analysis for the purposes of this paper. In each case, a brief sketch on the history, productive economy and social structure of each of these societies will be presented before the data on movement and fissioning are laid out.

#### *The Yanomami-Hayiamo case*

Yanomami is a generic denomination for a population of around 25,000 people linguistically and culturally divided into four wide subgroups. They occupy a territory of around 192,000 sq km in the Parima highlands and in the headwaters of the Orinoco River, on the border of Brazil and Venezuela. The degree of direct contact between these groups and the national governments is variable. Some of them are still officially without contact, others are regularly visited by medical teams, government officials, anthropologists, missionaries and gold miners. In the last decade, the systematic invasion by goldminers of Brazilian Yanomami land has precipitated a severe increase in mortality rates, what makes it difficult to assess the current size of their population.

Until recently, the Yanomami were undergoing both geographic and economic expansion. Their original homeland was in the Parima highlands, and from the end of the eighteenth century on they started migrating to the southwest, settling in the lowlands around the Upper Orinoco and some of its tributaries, a territory that was formerly occupied by Carib and Arawakan populations that were decimated earlier in the Colonial period (Hames, 1983: 426). The two major causes of such expansion were the introduction of Old World crops, like plantains, bananas, and sugar cane, as well as the introduction of metal tools (Colchester, 1984: 293). Before these technological innovations, Yanomami subsistence was characterized by a higher emphasis on trekking, hunting and cultivation of small plots of land with peach palms, maize, sweet and bitter manioc (Colchester, 1984: 308).

(3) Lathrap’s concept of “house garden” (1977) can be seen as an attempt to model changes in the environment made early by Amerindian societies. In the same way, Roosevelt (1989) has pointed out to a wider ecological diversity in the hinterlands than previously believed.

(4) A “population bloc” refers to a group of villages that share and recognize a common historical origin which is identifiable in time (Chagnon, 1974: 71).

The bulk of the Yanomami diet comes from gardening (Chagnon, 1983: 59). Plantains and bananas represent the main cultigen, providing almost 75% of their food (Chagnon, 1973: 127). Land is not privately owned and, while depending on the community approval, the choice of a plot for a new garden is personal. Individual gardens can either be isolated in different plots or grouped together according to kinship links, but their cultivation is always the duty of a nuclear family (Chagnon, 1983: 67; Lizot, 1971b: 155). According to Lizot (1971b: 156), a higher production can be verified on gardens of important leaders of the local community, since they are the responsible for providing food and allucinogenic snuff for ritual occasions. Hunting is both collective and individual and there was plenty of animal protein resources in the Yanomami territory, at least until the 1970s (Chagnon, 1983: 57).

Village size and population is variable, being higher – an average of 76 inhabitants – at the center and smaller – average of 53 inhabitants – at the periphery of the Yanomami territory (Chagnon, 1973: 134). A Yanomami village is composed by groups of extended or nuclear families, called “teri”, clustered together in a circular structure, called “shabono”, that at a first sight resembles a single communal house. In fact however, every family builds and owns its own part of the shabono (Chagnon, 1983: 116; Lizot, 1971a: 42) and it is the family-owned dwelling, the teri, that composes the basic economic unity of the village (Lizot, 1971a: 40). The teri is the space where mutual support is performed through the sharing of activities, the sharing of meat and assistance to elder or disabled people.

The ideal pattern of post-marital residence is patrilocality with temporary uxorilocality; the descent is patrilineal; and preferential marriage is between bilateral cross-cousins (Chagnon, 1983: 124-128; Lizot, 1971a: 39). Therefore, the structure of the society is characterized by a division into two intermarrying moieties (Chagnon, 1983: 128). Politically strong individuals tend to have more than one wife, and they attempt to get the support of men of other lineages by promising them their wives' unborn daughters (Chagnon, 1983: 124). It is the possibility of having more than one wife, and consequently to control a larger number of female offspring, that enables leaders to strengthen their position through the mobilization of men

belonging to other lineages (Chagnon, 1975: 99). The exchange of women between different lineages also represents an attempt to nullify the internal opposition that results from the division of the society in exogamic patrilineages, since such division provides the basis for the formation of different, and eventually conflicting, political groups (Lizot, 1971b: 149).

The maximum size of a village is constrained by the amount of relatedness or degree of solidarity between individuals (Chagnon, 1975: 96). For Chagnon (1975: 98), the degree of solidarity between individuals – and by this he means internal cohesion or social bonding – springs from three sources: kinship relations, marriage ties, and the influences of political leaders. The possibility of these elements to maintain internal cohesion is weakened by population growth because as villages become larger, the average amount of relatedness among the members goes down (Chagnon, 1975: 102-103), in the same way that the integration of families into the local community becomes increasingly fragile. Village fissioning is thus favored by the loosening of kinship ties provided by population growth and when it happens it keeps close kin together but separates them from more distant kin (Chagnon, 1983: 141). Consequently, the potential line of cleavage is furnished by the division in patrilineages (Lizot, 1971a: 39).

But fissioning has its costs. Individuals have to consider the burden of opening new gardens; the costs of transporting heavy plantain seedlings across sometimes broad areas; and the fact that when a runaway group finds temporary shelter in an allied village, the hosts might demand and receive their women without reciprocating in kind (Chagnon, 1983: 147). Most importantly, a smaller village is much more powerless when confronted by an enemy's raids. Several mechanisms exist, such as chest-pounding duels and other forms of institutionalized confrontation, that serve to attenuate internal conflict and avoid fissioning. The most alleged reasons for internal conflict are quarrels about women, and for leadership roles in the local group (Chagnon, 1983: 113,124) as well accusations of sorcery (Hames, 1983: 409).

The patterns of fissioning over time of a particular Yanomami population bloc are instructive here. The data to be used here comes from the Haiyamo population bloc in the Padamo River Basin in Venezuela (Hames, 1983).

In 1976 the Haiyamo bloc was composed of eight villages, with a total combined population of 412 people. Their ancestors originated in a village called Teemoba prior to 1920 (Hames, 1983: 407). Figure 1 illustrates the settlement history of the Haiyamo bloc, with the location of the villages that have been occupied and abandoned since 1920, as well as indications of the patterns of fissioning of these villages.

As the map indicates, the Haiyamo bloc villages are currently located along the Padamo River. The distance between them ranges from 4 to 24km, with a mean of 11km. The average village population is 52, ranging from 23 to 92 (Hames, 1983: 407). The village of Teemoba (Figure 1), is the oldest place that the senior members of the Haiyamo bloc villages recognize as their ancestors' homeland, and it was occupied from about 1915 to 1920 (Hames, 1983: 408). After this, the members of the Haiyamo bloc had to leave their territories in the Ocamo River because of raiding from other villages, and by the late 1930s they arrived in the Padamo Basin (Hames, 1983: 408).

In his analysis of the settlement history of the Haiyamo bloc, Hames presents the different causes that promoted the fissioning of these villages over a period of about 55 years. Two basic types of village movement were identified. The first, called "macromove", results in the relocation of new villages at least several kilometers away from the original village, being a result of either village fissioning or warfare. Macromoves resulted usually from political causes and rarely from factors related to subsistence (Hames, 1983: 415). The second type, called "micromove", designates movements from 50m to 1km every 4 to 5 years and they result from the ecology of swidden agriculture. Micromoves do not result from the tensions that lead to village fissioning but rather they "are not really moves at all" (Hames, 1983: 419), since, although new gardens need to be opened, hunting, fishing, gathering and gardening territories are basically the same of the former village. Thence micromoves tend to have no influence on potential village growth.

In 55 years, 22 macromoves have been recorded for the Haiyamo bloc. The moves ranged from 5 to 42km, with a mean of 16.7km and a average of one move every 9.2 years. As a result of these moves, the population of the Haiyamo bloc was, in the mid 1970s, living around 100km away from their ancestors' village of Teemoba (Hames, 1983:

409). Table 1 depicts a summary of the settlement history of the Haiyamo bloc.

As the data show, among the 22 moves, 6 resulted from village fissioning; 4 were a direct result of raids from more powerful enemies; 4 resulted from fear of raids but always combined with another reason ("asked to leave by the Ye'kwana", "lack of garden land", "abduction of women", "desire to be nearer allies"); 3 resulted from contacts with the Ye'kwana Indians; 2 from sorcery and witchcraft; 1 from trekking; 1 from abduction of women; and 1 from a poor garden site.

The above data show that village fissioning was the major single reason for the macromoves of the Haiyamo bloc villages, accounting for 27.3% of them. In only three situations – "lack of garden land", trekking", "poor garden site" – or 13.6% of the cases, a macromove was done for explicit subsistence reasons. Subsistence alone cannot therefore account for these processes.

#### *The Kayapó-Gorotire case*

Among the Kayapó, the picture is similar. The Kayapó are a Gê speaking group inhabiting different territories between the mid Tapajós and Tocantins basins in south-central Amazonia. Using data drawn from the Kayapó living in reservations, one has a figure of around 4,000 people settled in 8 discontinuous reservations, with a total area of 5,376,650 ha (CEDI/MUSEU NACIONAL, 1987).

In the same way as the Yanomami, the Kayapó were an expanding population until regular contacts were established with the national society. In his "Mapa Etnohistórico do Brasil e Regiões Adjacentes", Curt Nimuendajú proposes a southeastern origin for the Kayapó, in the savanna region of the Araguaia River Basin. According to this hypothesis, the Kayapó have only occupied the area they currently settle after the Tupí: populations that lived there were exterminated or pushed away by the Portuguese before the eighteenth century (Arnaud, 1987: 7; Nimuendajú, 1981, 1982). Conversely, Joan Bamberger (1968: 374) considers the Kayapó as traditional inhabitants of the same area even before the arrival of the Portuguese. However, if one considers that until the 1950s, warfare and village fissioning were driving Kayapó sub-groups such as the Mekranoti to new territories westward from their original villages (Werner,

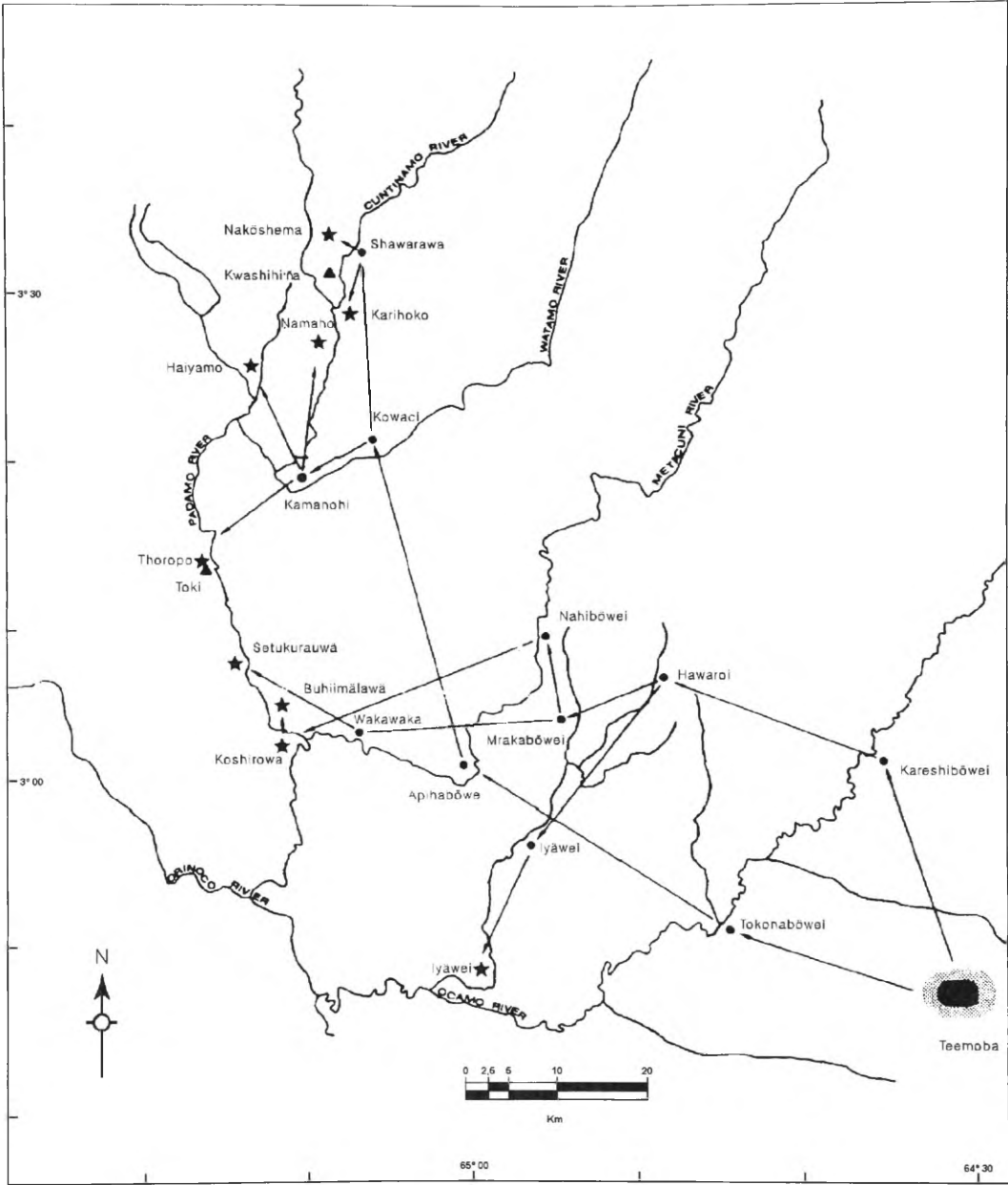


Fig. 1 – Haiyamo population bloc settlement history (1920-1976). Dots indicate former Yanomani Village sites, arrows show direction of movement, stars indicate current (1976) Yanomani Villages, and triangles show Yekwana Villages. (Adapted from Hames (1983: 406).

TABLE 1 – (Hames, 1983: 416)

| Causes of Micromoves for the Yaiyamo Population Bloc |    |     |
|--|----|-----|
| Cause of move  | N  | %   |
| Garden land too distant                              | 12 | 35  |
| Garden land of good topography used up               | 6  | 18  |
| Well-drained soils used up                           | 4  | 12  |
| Deteriorated village structures                      | 3  | 9   |
| Poor soil <sup>a</sup>                               | 3  | 9   |
| Unattractive village site <sup>b</sup>               | 2  | 6   |
| High levels of insect pests                          | 1  | 3   |
| More attractive stream nearby                        | 1  | 3   |
| Too many large and hard trees for easy garden-making | 1  | 3   |
| Unpleasant, ugly, or tiresome site                   | 1  | 3   |
|  | 34 | 100 |

<sup>a</sup> Crops yielded poorly on these soils, forcing a quick move.

<sup>b</sup> A muddy village site that took a long time to dry out during the rainy season.

1983), Nimuendajú's hypothesis seems more plausible.

Regular relations between the Kayapó and Brazilian society were established in the nineteenth century. In 1860 a first mission was established and around the end of the century, it was composed of four villages with almost 5,000 people, the largest of them inhabited by 1,500 individuals. However, the intensification of contact and the spread of western diseases promoted the extinction of this sub-group in the twentieth century (Posey, 1987: 139).

As among other Gê societies of Central Brazil, Kayapó economy is characterized by a strong emphasis on hunting and gathering, activities which are sometimes performed in trekking expeditions that can last from a few days to several months (Werner, 1983). Because of this, the Kayapó were formerly considered to be "true" hunter-gatherers, which is absolutely not the case. Studies of time allocation among the Mekranoti-Kayapó have shown that in one year they spent almost the same amount of hours (456.6 and 441.8 respectively) in getting wild foods and gardening (Gross *et al*, 1979: 1047).

Swidden cultivation accounts for more than one half of the total food production (Turner 1979a: 149) and manioc and sweet potato are the basic staples providing more than 80% of the energy yield from cultivation (Gross *et al*, 1979: 1047). New gardens are opened every 2 or 3 years, but old gardens keep producing fruits, medicines and raw ma-

terials for several years (Posey, 1986: 174-175). Therefore a garden is never completely abandoned and the Kayapó keep visiting them even after villages are relocated. Every nuclear family, the basic unit of production and consumption, keeps at least two or three gardens in production at the same time (Bamberger, 1968: 376).

Following the characteristic pattern of Gê societies, Kayapó villages are circular, with a central plaza, and the houses are located at the periphery of the circle. Every house has its location determined by norms that are followed when a new village is built in another place (Vidal, 1977: 63). Kayapó houses are occupied by uxorilocal extended families, and although there are no clear internal divisions, every nuclear family owns a discrete spatial unit, characterized by a fire and the presence of personal possessions. Even within the extended uxorilocal family, the nuclear family remains an independent core of production and consumption, and there are no forms of prescribed cooperation between nuclear families (Arnaud, 1987: 80; Turner, 1979b: 180). Descent is bilateral (Vidal, 1977: 54). For Turner (1979b: 181), "the uxorilocal residence pattern can be understood in dynamic terms as a setting for exchange of sons for daughter's husbands, in a way that exploits men's control over women (and to some extent mother's control over their daughters) to gain control over men". There are no strict marriage rules, but individuals cannot marry close relatives, and, most importantly, two brothers can never belong to the

same extended uxorilocal family after they marry (Vidal, 1977: 128).

Corporate groups have an important role in the organization of the society and every individual, male or female, adult or child, belongs to one of these groups. Contrary to other Gê-speaking groups, Kayapó society is not currently divided into moieties, although this could have been the case in the past (Turner, 1979b: 209). Corporate groups, like men's societies or age groups, compose distinct political and economic entities, and tasks like trekking, the opening of a new garden, or division of game meat can be performed collectively by such groups (Vidal, 1977: 137; Werner, 1982: 342). Because of the uxorilocal residential rule, women tend to spend most of their lives in the same house with their sisters, mother, and female offspring. Boys, conversely, leave their parents' house at an early age to reside in the men's house. After his first child is born, a man moves to his father-in-law's house, where he will eventually reside until he is powerful enough to constitute an extended family himself. Thence, marriage and the constitution of a family mark first the transition to adulthood and then the possibility of attaining political prestige among Kayapó men (Turner, 1979a: 160). The uxorilocal pattern of residence, and the consequent use of women as a means to attract potential allies, represents an effective way through which seniors strengthen their political status in the local group. For Turner (1979a: 159), the uxorilocal pattern enables seniors to extend the control of women they exert in the nuclear family, which is the basic productive unit, to the control over other men (sons-in-law and brothers-in-law) who become incorporated to the family through marriage.

Therefore, the possibility of having a large number of offspring constitutes an important point in strengthening one's status within the local group (Turner, 1979b: 205). Dennis Werner (1982: 343) noticed that in the Mekranoti village where he worked the main leader had more adult sons than anyone else. There is no specific descent rule for leadership, and the main criteria that qualify one as a leader are "ambition", "intelligence", "knowledge of civilized ways" and "generosity" (Bamberger, 1979: 139; Werner, 1982: 345). In the same way as among the Yanomami, leadership is transferable from one situation to other – like war or ritual – and the role of leaders is limited mainly to

offering advice which others can refuse to accept (Werner, 1981: 370). For Werner (1981: 371), there are few absolute differences in power among the Mekranoti, but there is inequality in opportunities to acquire it.

The process of transmission of names exemplifies this point: some names allow one access to positions of prestige in ritual (Bamberger, 1974: 363). The required ceremonial activities related to the transmission of a great name, which can last up to four months, can be organized only by parents that have prestige and influence strong enough to mobilize people to work for them or to donate part of their garden production in the supporting of the ceremonies (Bamberger, 1974: 367). Correspondingly, it is likely that the offspring of powerful men will receive more prestigious names than average people. Although such an incipient concentration could eventually lead to the formation of distinct, dominant groups, the political instability and the consequent pattern of village fissioning that characterizes Kayapó society inhibits the development of more established forms of hierarchical political organization.

Corporate groups like men's societies or age groups constitute the lines of cleavage when a fission happens (Frikel, 1963: 151; Turner, 1979b: 213; Vidal, 1977: 139). Therefore, contrary to the Yanomami case, village fissioning among the Kayapó tends to separate blood relatives and close kin because of the structural importance of corporate groups. The reasons that led to past fissions were variable: disagreements about the way the group should relate with Brazilians (Frikel, 1963: 151); cases of adultery (Vidal, 1977: 25); fights for women (Bamberger, 1979: 133); and political disputes between corporate group leaders (Arnaud, 1987: 81). In the same way as the Yanomami, the Kayapó have a set of mechanisms that aim to attenuate conflict and avoid fissioning because they are aware of the fact that smaller villages are militarily weaker. If the leaders' word is not strong enough to alleviate the tensions, forms of ritualized combat are undertaken in order to reestablish internal cohesion (Bamberger, 1979: 139; Nimuendajú 1982: 239).

The patterns of fission of the Kayapó-Gorotire population bloc will be examined. The data here are not so explicit as with the Hayiamo bloc, but they are still revealing. The Gorotire bloc is composed of five villages located along the Xingú, Fresco



and Riozinho rivers (Figure 2).<sup>5</sup> Around 1850, major divisions already existed among the Kayapó including three major subgroups: the Xikrin, the Iramkãire, and the Gorotire. Towards the end of the nineteenth century, the Gorotire were already settled in the Fresco River area (Arnaud, 1987: 82-83).

The first major fissioning among the Gorotire themselves happened sometime between 1905 and 1910. After a duel between two leaders of different men's societies, one of them left the village with 250 men, forming the Kubenkragnotí group that moved to the Upper Irirí River (Arnaud, 1987: 84). The second major fissioning of the Gorotire occurred in the 1920s and was also a result of rivalries between leaders of men's societies. As a consequence of this fissioning, one of the new groups – called Kararaõ after a leader of men's society – moved downstream to the confluence of the Xingú and Irirí rivers. The third major fissioning happened in 1936 and promoted the formation of the Kubenkrakegn group, that remained in the Riozinho River area, while the Gorotire moved down to the Fresco River (Arnaud, 1987). Shortly after they fissioned from the Gorotire, the Kubenkrakegn fissioned again; one of the groups, with 250 people, joined the Kubenkragnotí and the other, with 400 people, moved down to the Xingú River (Arnaud, 1987: 87).

During the 1940s the Gorotire were already being assisted by the federal government, but internal conflicts continued and in 1942, one of the leaders of the group was killed by a young emerging leader (Arnaud, 1987). Conflicts within Kayapó society have continued until the present. The fact that the Kayapó now live in reservations together with the increase, since the early 1970's, of the occupation of Southeastern Amazonia by non-Indians reduces the efficiency of village fissioning as a conflict-solving strategy.

## Discussion

The evidence presented above suggests that subsistence needs were not necessarily the major factor accounting for village movement and fissioning among two hinterland Amazonian Indigenous populations. The explanation for such a phenomena cannot thence be sought in mono-

causal determinist ways. Perhaps an approach correlating social organization with the organization of production could bring better explanation for this problem. The concept of "kin-ordered mode of production" will be now presented as an alternative tool to explain village fissioning and movement among contemporary<sup>6</sup> Indigenous Amazonian societies.

As elaborated by Marx, the concept of "mode of production" was proposed mainly to understand the historical development of capitalism in Europe. During the nineteenth century anthropology was beginning to develop as a discipline in the social sciences and systematic knowledge about "primitive" populations was still scanty. As a consequence, Marx's knowledge about the structure and functioning of Amerindian populations was scarce, if not nil (Hobsbawm, 1964: 26; Meillassoux, 1972: 97). Therefore, one needs to rely on further developments of the concept of mode of production to apply it to the study of native Amazonian populations.

The basic premise of the concept of mode of production is the distinction between "work" and "labor". While labor is always socially mobilized, work is the individual spend of energy to produce further energy (Wolf, 1982: 74). This distinction allows the recognition that the determinist hypothesis previously mentioned deal solely with the work process, rather than with the labor process, for they focus only on the extraction of energy from nature without considering the social relations mediating these procedures. Their potential to explain social phenomena is therefore very weak.

A mode of production is composed by the combination of forces of production and relations of production. While "productive forces determine the degree of control over natural resources, the relations of production are those institutions and social mechanisms that determine the way in which (at a given stage of productive forces) labor power is combined with the available means of production. Regulation of access to the means of production also determines indirectly the distribution of socially produced wealth. The relations of production express the distribution of social power" (Habermas, 1979: 138-139).

(6) "Contemporary" is used here to indicate societies that have been ethnographically documented in the last hundred years or so.

(5) This figure is valid for the mid 1980's.

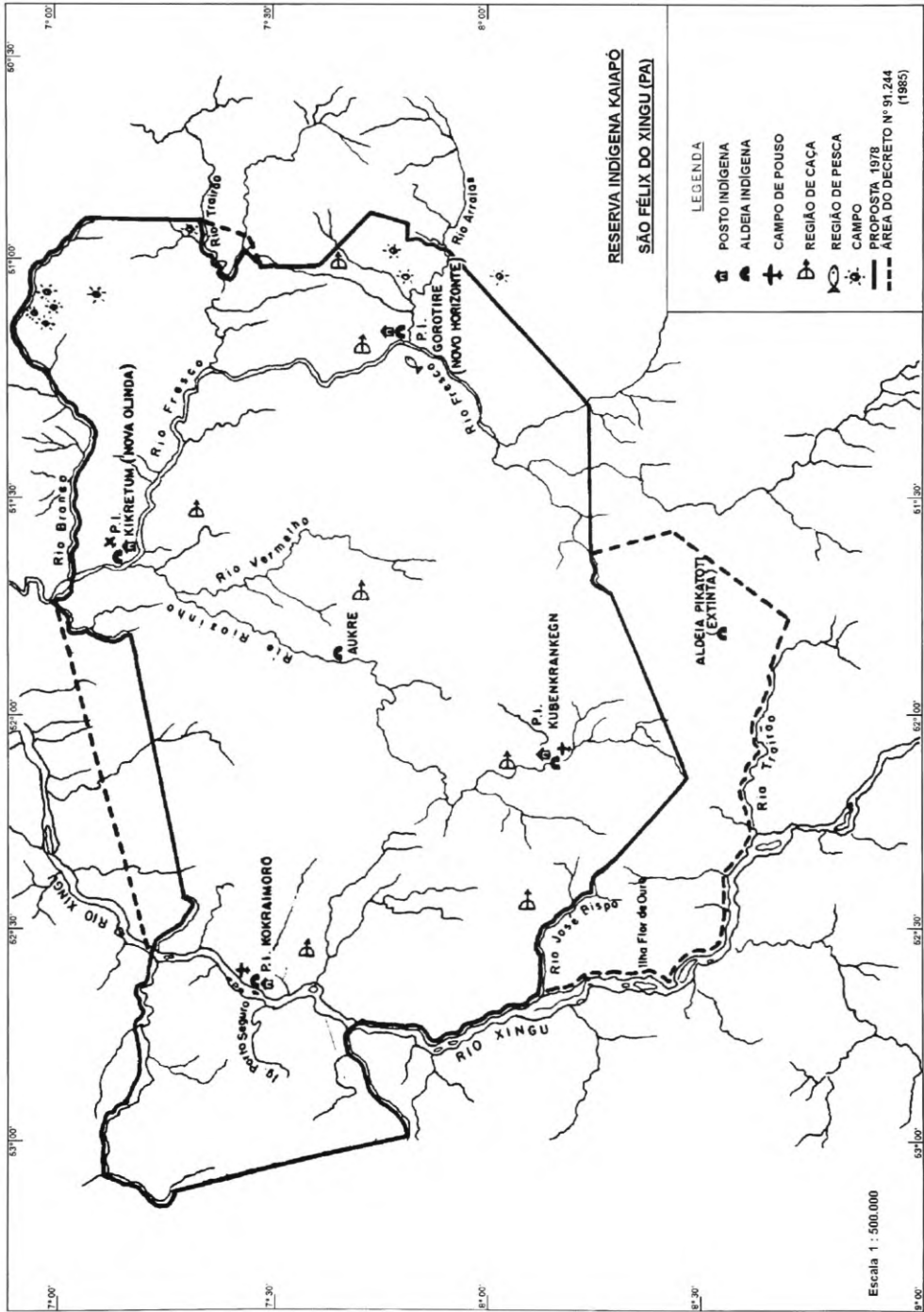


Fig. 2 – Villages of the Kayapó-Gorotire population bloc around the early 1980's. From Arnaud (1987:126).

In the case of contemporary hinterland native Amazonian societies, every individual potentially has access to the means of production. Land is available; individuals have the required knowledge and opportunity to make their own tools for gardening, hunting, fishing, or gathering; kinship relations are not strong enough to coerce individuals to long-term compulsory or exploitative labor; and more importantly, the nuclear family constitutes in most cases the basic autonomous unity of production and consumption. Consequently, if one is to apply the concept of mode of production to the study of these societies, one needs to move away from studying the control of the means of production and verify the other ways political prestige and status can be obtained through the control of the labor process. In other words, one needs to focus on the relations of production.

Among native Amazonians, kinship is a major force in the organization of production. For Eric Wolf (1982: 91), "kinship can be understood as a way of committing social labor to the transformation of nature through appeals to filiation and marriage, and to consanguinity and affinity. This labor can be mobilized only through access to people, such access being defined symbolically" (Wolf, 1982: 91). Wolf named this particular pattern of mobilization of labor "kin-ordered mode of production". In the kin-ordered mode of production, the mobilization of labor operates through the control of people, and not through the control of the means of production.

In kin-ordered societies the control of subsistence is exercised through the control of the means of physiological reproduction, or in other words, the control over women and marriage policies (Meillassoux, 1972: 100). For Meillassoux (1972: 102) societies similar to the ones under discussion here "rely less on the control of the means of material production than on the means of human reproduction: subsistence and women. Their end is reproduction of life as a precondition to production". Wolf (1982: 93) contends that the two major sources of power in the kin-ordered mode are control of women and parentage. The first allows for prerogatives over the labor of females, offsprings and affines; the second organizes the range of potential allies through appeals to descent, lineage, or relatedness.

Marriage marks the transition to full maturity, the introduction of an individual to adulthood and

the possibility of making political alliances: "it is the significance of sexual access for the establishment of both male autonomy and adult cooperative relations that turn wives into valuables to be exchanged and guarded" (Collier & Rosaldo, 1981: 292).

Since marriage is important, it is regulated by rules that narrow the range of individuals' options, and this is the way kinship furnishes the ideology for the control of reproduction and the formation of political alliances within the local community. Therefore, a discussion of the kin-ordered mode has to also encompass an analysis of the ways political prestige is assured: the control of the flow of women through marriage as it is determined by kinship.

The problem under discussion here – village movement and fissioning – can be seen as an indicator of the tensions intrinsic to the kin-ordered mode of production. By identifying these tensions, by understanding why they arise and how people manage to resolve the problems they engender, one can arrive at a more satisfactory explanation for the reasons behind village movement and fissioning.

As stated above, one of the basic characteristics of the kin-ordered mode is the fact that every individual has access to the means of production, and that the household composes the basic unity of production and consumption. There are certainly tasks that can be performed collectively – like the opening of a garden or trekking expeditions – and there are resources that are obtained through exchange, but nevertheless the household remains as the basic productive unit in kin-ordered societies. As shown above, even in cases of extended uxorilocal families, like the Kayapó, every adult couple is responsible for assuring the basis of the subsistence for themselves and their offspring. As stated by Sahlins (1972: 93): "The household in tribal societies is not the exclusive owner of its resources: farmlands, pastures, hunting or fishing territories. But across the ownership of greater groups or higher authorities the household retains the primary relation to productive resources".

It is in the independence of the household as an unit of production and consumption that one finds the key for conflict solving in kin-ordered societies. Kinship relations are not strong enough to maintain solidarity under situations where it could be more favorable for individuals to leave and form new villages. According to Wolf (1982: 95): "con-

flict resolution encounters an ultimate limit in the structural problems of the mode itself. Cumulative conflict often exceeds the capacity of kin-based mechanisms to cope with them". The economic independence of the household is also a major force that promotes the characteristic pattern of leadership weakness in kin-ordered societies where a leader's success will normally depend more on his personal charisma than in his status of leader *per se*.<sup>7</sup>

Based on the foregoing discussion, at least two major sources of conflict within kin-ordered societies can be identified. The first happens between age groups, as they represent married versus unmarried man, or elders versus juniors (Wolf, 1982: 94). In this case, conflict arises around the need of juniors to obtain women, which are controlled by seniors, to assure their own economic and political autonomous status in the local group. The second source of conflict is between corporate groups like moieties (Turner, 1979b: 210), or lineages (Chagnon, 1983: 141).

Finally, using the elements presented above, it can be stated that village fissioning is a major way to handle internal conflicts at the local group. Given the economic independence of the household, and the weak leadership characteristics of the kin-ordered societies, village fissioning is the major way through which the problems that arise from internal conflict are resolved, at least in the sense of avoiding open armed confrontation. Interestingly enough, the data about the Yanomami and Kayapó presented above show that most currently enemy groups formerly belonged to a same local group that fissioned.

## Conclusions

The concept of mode of production provides a theoretical framework that only makes sense when confronted with phenomena of the real world. When such a task is accomplished, we can avoid

the monocausal determinism and arrive at a more dynamic picture of the functioning and change of native Amazonian societies. The concept of a kin-ordered mode of production was employed here in the explanation of village fissioning among two native Amazonian societies. Because it links social organization and the organization of production, it might indicate a way to avoid monocausal deterministic thinking. It demonstrates that the control of people through kinship is the major organizing force among the societies discussed here. It also demonstrates that such control is not always effective, that kinship links cannot accommodate political differences. When open conflict emerges, village fissioning might be the best solution to deal with them.

The data for the Yanomami and Kayapó population blocs presented above suggest that intra village political instability is a major force accounting for village fissioning. This political instability is directly related to the way production is organized among these societies. The independence of the household or the nuclear family as units of production and consumption hinders the development of stronger means of social control. This independence springs basically from the lack of mechanisms for control of the means of production and also from the relative availability of resources. The control of women and kin, although effective in the short run, is not solid enough to assure any kind of political continuity at the village level. Thence, leadership is weak, not hereditary and ineffective in the administration of internal conflict.

In the long run, this instability could also account for the patterns of descent for native Amazonians. Robert Murphy (1979) believed that the genealogical shallowness of Amazonian kinship is a result of the lack of rights of ownership of resources such as land, fishing spots and hunting territories. The abundance of these resources hinders the development of effective mechanisms for control of production because individuals always have the potential to leave if conflict arises at the level of the local group. Even in the case of the Yanomami where patrilineages do exist, the pattern of constant fissioning impedes the formation of long-lasting clans or lineages.

One of the major challenges for archaeologists working in Amazonia is to understand social dynamics in pre-colonial times, when population densities were higher and wide-ranging trade networks

(7) See Johnson and Earle (1987: 122-123) for a recent evolutionist attempt to explain this pattern of leadership. On the other hand, the archaeologist Michael Heckenberger (pers. com.) believes that in the South American lowlands the weak leadership patterns documented ethnographically could be a result of the population reduction promoted by the European conquest.

existed, making resource distribution and availability different from what they are today. In pre-colonial times is possible that what Carneiro (1970) has called "social circumscription" existed in some areas. If this was the case, higher population densities could have stimulated agricultural intensification and also the development of forms of resource ownership unlike those characteristic of contemporary Indigenous Amazonian societies. Therefore patterns of social organization before the conquest may have been quite different from what they currently are (Roosevelt 1989).

The ideas presented here need to be tested with further data in order to assess their usefulness but the above discussion suggests that monocausal

determinism is not adequate to explain social phenomena among contemporary Amerindian societies. It is therefore even weaker as an explanatory tool for the archaeological record.

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**ABSTRACT:** Deterministic theories proposing the existence of limiting factors to cultural development in Amazonia are criticized here. An alternative hypothesis based on the concept of "domestic mode of production" is suggested based on the discussion of two case studies.

**UNITERMS:** Ecological determinism – Cultural change in Amazonia – Domestic mode of production.

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