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Variable Models for the Organization of Earthworking Communities in Upper Purus, Southwestern Amazonia: Archaeological and Ethnographic Perspectives

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Introduction

The region of Upper Purus in southwestern Amazonia is known for monumental pre-Columbian earthwork complexes located on the interfluvial (*terra firme*) plateaus of the Purus and Madeira river tributaries (Fig. 1) and formed by continuous ditches of different geometric shapes and varying sizes in association with exterior, and sometimes interior, embankments (Fig. 2) (Pärssinen et al. 2003, 2009; Saunaluoma 2012; Saunaluoma and Schaan 2012; Schaan et al. 2010, 2012). Ancient roads, delineated by low earthen banks, frequently connect the separate earthworks and link them to adjacent streams. The era of construction and use of these geometric earthworks, established predominantly for ceremonial purposes, spans the time-period of approximately 3000–1000 B.P. (Saunaluoma and Schaan 2012).

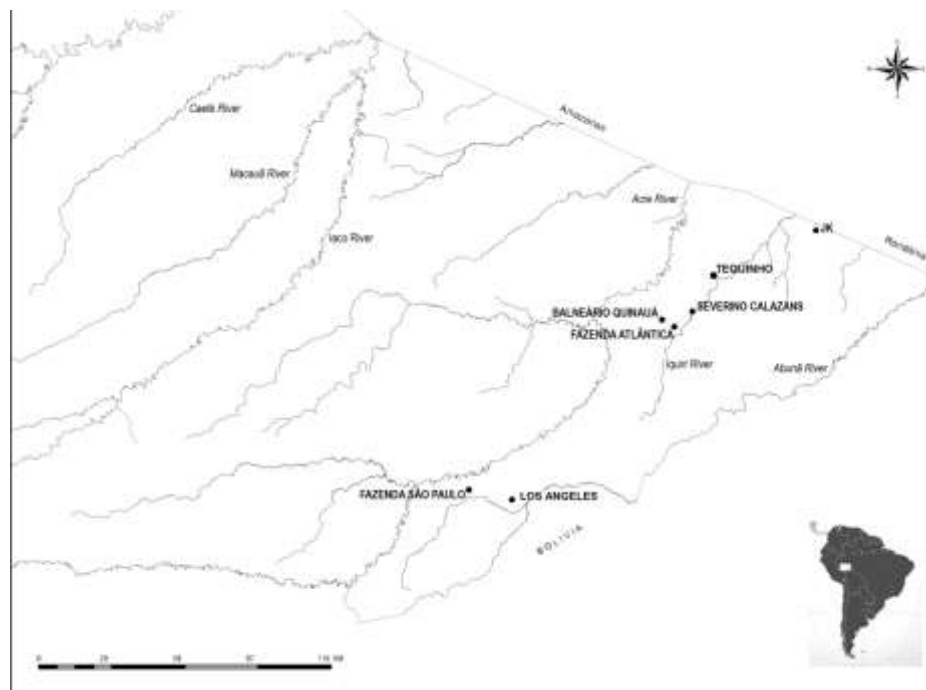


Figure 1. Location of the geometric earthwork sites mentioned in the text in the region of Upper Purus.

Apparently, to plan, build, maintain, and use these supposedly public spaces, a rather advanced system of social order was needed. To better identify and explain the prehistoric socio-organizational environment, we use appropriate ethnohistoric and ethnographic analogies to complement the available archaeological information. Until now, few settlement and cemetery sites have been identified in the Upper Purus region, and the record of cultural material related to earthworks is scant. Consequently, the lack of data on residential and burial contexts, which in the archaeological record are often considered to most readily reveal social inequality and centralization of power, complicates the comprehension and interpretation of the societal systems of these ancient earthwork-building communities. The absence of information on village sites is a bias caused by a scarcity of archaeological fieldwork, and the main objective of ongoing and future re-

search is to localize the settlements of the geometric earthwork builders. The lack of record on burials is partially due to an inadequate systematic survey, but may also be a sign of specific burial customs, such as endocannibalism in the form of consuming deceased relatives that Castelo Branco (1950) mentions was practiced among some indigenous groups in the region.

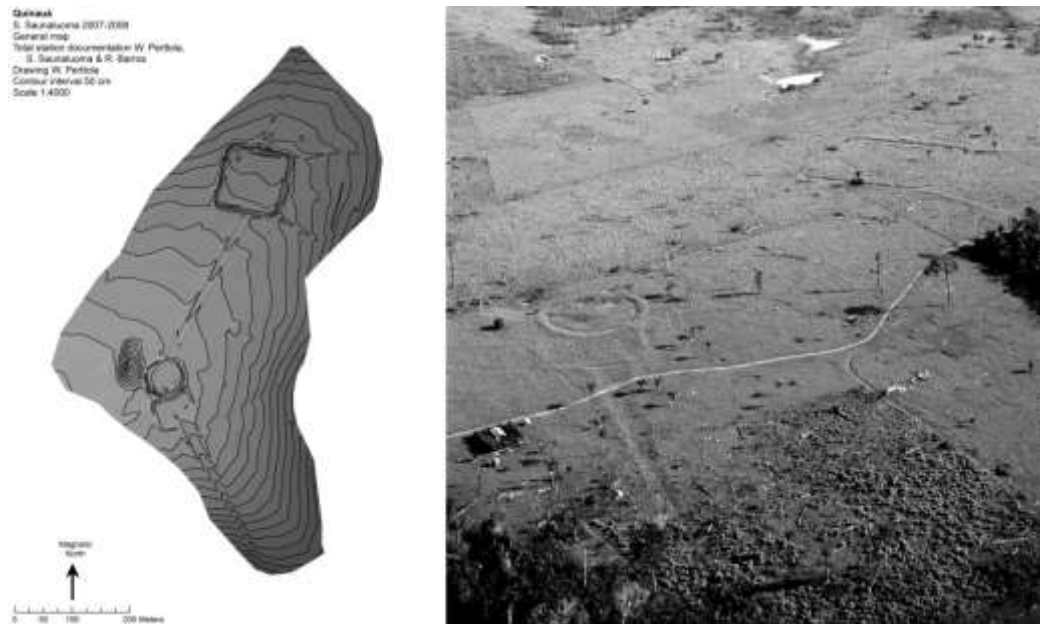


Figure 2. The Balneário Quinauá geometric earthwork site

Our attempt is to interpret the archaeological data concerning the geometric earthworks of the Upper Purus and study how these early monumental sites reflect the feasible models of social order behind their construction and use. Ethnohistoric and contemporary ethnographic parallels are presented to infer the importance and crucial roles of cultural and environmental heterogeneity, ritual and reciprocity, and socio-cultural interaction in the organization of Amazonian societies at all times. We use as contemporary analogues the Manchineri (*Yine*) and Apurinã (*Pupjkar*), Arawak-speaking indigenous groups. In the beginning of the rubber boom in the late nineteenth century, these were the most numerous indigenous peoples in the Upper and Central Purus region (Armenia 1887:107; Chandless 1866; Labre 1889). Today, the Manchineri number ca. 1,000 persons and the Apurinã ca. 8,000 persons. The former group resides mainly in the Mamoadate indigenous territory and in the city of Rio Branco in the Brazilian state of Acre, and the latter is distributed in indigenous territories situated in Central Purus in the state of Amazonas, and in urban areas of Boca do Acre, Pauini, Tapauá, Lábrea, and Rio Branco. We are aware of the drastic socio-economic transformations that took place during the European contact period which irreversibly altered Amerindian demography and even brought many ethnic groups to an end. Still, some traits of the social order of ancient society, responsible for constructing the geometric earthworks might be still be traced and identified among the post-colonial indigenous groups, even if in an altered state. Although the region's ethnohistoric accounts only reveal fragmentary information on the organization of ancient societies, we can gain insight into past Amerindian socio-cultural behavior by comparing archaeological and contemporary cultures living under similar environmental conditions and at relatively the same level of subsistence (see Lyman and O'Brien 2001) in southwestern Amazonia.

We suggest that the socio-organizational complexity of the archaeological culture in this study is displayed primarily by the uniform and consistent standard of its earthwork engineering, indicating highly developed socio-ceremonial systems, ritual practices, and communally constructed spaces for specific activities. In this paper, we address three issues. First, the geometric earthwork society's complexity demonstrates itself in symbolic values linked to the earthwork architecture and arrangement of earthworks. Second, the organizational forms and social roles inside the communities may have been quite variable, flexibly adjusting to changeable social situations, responsibilities, and intergroup negotiations. Third, it seems that each community was organized and led rather autono-

mously at the local level, but was situated within a wide-ranging regional tradition of ideological devotion highlighted in the construction of monumental earthworks.

Altering Perspectives on Amazonian Socio-Organizational Models

The traditional model in Amazonian archaeology, formed in the 1940s (Lowie 1948; Steward 1948) and designated by environmental determinism and diffusionism, described the societies of pre-Columbian Amazonia as small, non-sedentary populations with an egalitarian social organization based on kinship and leaders with limited authority. In the same way, ethnographic sources emphasized the lack of centralized leadership and powerlessness of the Amazonian indigenous leaders (Goldman 1963; Johnson 2003). Although Amazonian leaders have been seen as lacking coercion (Clastres 1977[1974]), their persuasive power has also been noted (Kracke 1978; Veber 1998), and the leader's prestige-building is usually related to success in fulfilling the given expectations, such as deeds of reciprocity within the community (Lévi-Strauss 1967[1944]). Moreover, anthropological literature has discussed and presented alternative elements of leadership: political power can be regarded as an ability to express oneself verbally and negotiate, to act as a group spokesperson and to dominate skills of shamanism and ritual leadership, as well as to have an inherent charisma (Descola 1988; Maybury-Lewis 1967; Santos-Granero 1986).

Over the recent decades a new concept replacing the traditional model has been established for Amazonian archaeology demonstrating extensive anthropogenic transformations and management of the natural environment, independent advance of cultural innovations in the tropical lowlands, a sedentary way of life, high population densities, and the emergence of late prehistoric complex societies along the Amazon River and its main tributaries (e.g., Balée 1995; Denevan 1992; Glaser and Woods 2004; Heckenberger and Neves 2009; Roosevelt 1994; Stahl 2002). Current archaeological research draws even more attention to the dynamism, variability and uniqueness of Amazonian cultures (see, for example, Balée and Erickson 2006; Pereira and Guapindaia 2010; Schaaf 2012; Woods et al. 2009), perhaps considering Elman Service's (1962) band-tribe-chieftdom-state cultural-evolutionary archetype to be insufficient for explaining prehistoric societal-related phenomena (Peebles and Kus 1977).

Recent studies focusing on prehistoric social complexity (e.g., Fargher et al. 2011; Schortman and Urban 2012; Vega-Centeno 2007) seek alternative concepts for describing and comprehending indications, variations and assertions of societal-related phenomena. Concepts such as heterarchy, i.e., sequential hierarchy (Johnson 1982), and responsible autonomy (Fairtlough 2005), may be more useful in describing ancient socio-cultural organizations than the plain division between egalitarian and ranked societies. McGuire (1983) has proposed that setting research questions should establish "how the ancient societies were complex", rather than solely seeking evidence and the degree of vertically hierarchized organization models in prehistoric societal systems. Tainter (1988:23) defines several attributes indicating complexity in a given society, such as its size, the number and distinctiveness of its parts, the variety of social roles incorporated, the number of distinct social personalities present, and the variety of mechanisms for organizing these into a coherent and functioning whole.

Crumley (1995:3) defines heterarchy as "the relation of elements to one another when they are unranked or when they possess the potential for being ranked in a number of different ways". The relationships between individuals, communities, and societies are not indispensably static, but may be altered considerably, if necessary, under certain circumstances, at all scales of interaction and also represent varying vertical and horizontal models of social order. In addition to heterarchy and hierarchy, a responsible autonomy is one of three ways to "get things done": a group decides autonomously what to do, but is accountable for the outcome of the decision (Fairtlough 2005:30). According to Fairtlough (2005:35, 39), "every organization is a mixture of hierarchy, heterarchy, and autonomy, but in widely varying proportions", even though humans seem to have an innate predisposition towards hierarchy. Consequently, indisputably hierarchic, heterarchic, or autonomous organizations do not exist. Instead, every society combines all these organizational models depending on the changing social, political, and economic circumstances. This triarchic model (Fairtlough 2005) would blend adequately in societies of cultural diversity such as those of Amazonia.

Extensively documented prehistoric agricultural fields, irrigation systems, defensive ditches around the villages, and routes for transport and communication in the eastern tropical lowlands of Bolivia, are seen as implying centralized planning and labor-force control in exceedingly hierarchical sociopolitical organizations (Erickson 2006a). While a centralized leadership has often been considered as the most efficient and the most probable way of controlling the above-mentioned cultural systems (Carneiro 1970), the heterarchic approach suggests that the large-scale communities could also have been organized by various non-hierarchic and non-centralized modes that were put into practice locally (Paynter 1989). It has also been proposed that constructing and maintaining wide-ranging communal works, such as intensive agricultural systems or public architectural complexes, is also realizable by the means of small groups organized at the local community level (Erickson 2006b; Vega-Centeno 2007). However, the local independently operating groups may have been incorporated into a larger regionally controlled system, such as in the late pre-Columbian Coastal Peru, where at the lower levels of organization, corporate labor groups were integrated into the higher socio-political levels by means of a series of ranked moieties, each having a designated person in charge (Netherly 1984:230).

As the literature concerning Amazonian pre-Columbian and ethnographic cultures exemplifies, the region's socio-political systems have been and obviously still are, flexible and dynamic. Neves (2008:371–372) notes: "late pre-colonial societies of the Amazonian floodplain were cyclical, with alternating periods of political centralization and decentralization, the latter inferred from events of settlement abandonment and regional population decline." The most significant Amazonian ancient complex societies are often referred to as chiefdoms (Carneiro 1970, 2007; Gomes 2008; Roosevelt 1993; Schaan 2008). However, as an organizational model, a chiefdom is considered to be politically loose and unstable (Cobb 2003; Earle 1997). According to Carneiro (1970, 2007), warfare was one of the most prominent factors causing socio-organizational variation among the Amazonian societies. During the moments of crisis, local autonomous communities united and transformed into a chiefdom-like organization with a more centralized authority and a more numerous population to guarantee the permanence of the established socio-political systems and resource management. Renard-Casevitz (2002) has shown, using ethnohistoric and ethnographic examples, how the phases of socio-organizational fusion and fission have functioned among certain western Amazonian Arawak groups for the period of political instability. Hence, the position of leadership and power is not static, but may change under certain circumstances, for instance during an operative social (or ecological) circumscription, as proposed by Carneiro (2007). It has also been suggested that an ecologically favorable environment and the advance of new subsistence systems, such as intensifying agriculture, contributed most to the development of social complexity in Amazonia (Lathrap 1970; Roosevelt 1980) and elsewhere.

In southern Amazon, in the Upper Xingu region, the late pre-Columbian communities were organized in small independent polities with shared socio-cultural values, representing a pattern of marginal pre-colonial regional urbanism (Heckenberger et al. 2008). At the local level, within each Xinguan community power was, and still is, inherited, and distributed and reproduced as a part of an ancestral lineage. A similar system of genealogical power has been proposed for the late pre-Columbian polity of the Island of Marajó at the Amazon estuary (Schaan 2004). A hierarchically divided society organized around the ties to the founding ancestors and a sociopolitical order based on social and symbolic aspects are characteristics of the Xinguan Arawak peoples (Heckenberger 2005). Additionally, ethnohistoric accounts (e.g., Acuña 1641; Carvajal 1894) point to the existence of wide-ranging sedentary societies led by paramount chiefs prospering along the main Amazonian rivers before the European contact period. However, would the ceremonial geometric earthworks of the Upper Purus region be materialized remains of such a centralized chiefly society?

The aim of this paper is to contemplate how the communities who constructed geometric earthworks, interpreted as ceremonial centers (Saunaluoma 2012; Saunaluoma and Schaan 2012), could have been organized. As suggested elsewhere (Saunaluoma and Schaan 2012), the formative-stage society constructing and using the geometric enclosures in the Upper Purus was in a period of transition. Growing sociopolitical complexity among this pre-Columbian culture appears in the archaeological record as a concentration of predominantly ceremonial sites sharing same the ceramic tradition and similar monumental architectural features, mainly circular and square-shaped ditched enclosures with contiguous external embankments, low embankment structures inside the squares,

and narrow straight roads coming into and going out of the enclosed spaces. Strong material and symbolic interaction within the region of the geometric earthworks is evident, but does not necessarily attest to the authoritative internal organization of the society.

According to Clastres (1977[1974]), political power must be preceded by ideological power. We assume that the society building the geometric enclosures was ideologically firmly organized, but socio-politically competitive and continually undergoing negotiations and changing. Without stressing here the importance of specific environmental, economic, or political factors behind the evolving social complexity in southwestern Amazonia, we propose that socio-organizational models and roles of social personalities in the geometric enclosure building society varied according to changing circumstances and in spite of time or place, as suggested for late pre-Columbian societies of Lower Amazon (Gomes 2008; Roosevelt 1999).

Ceremonial Spaces and Symbolic Organization

Moore (1996) established a framework for estimating the complexity and nature of social order and the degree of ritual elements reflected in monumental public architecture by using certain variables that reveal the communicative potential of the constructed or demarcated space. The variables included are: permanence, centrality, ubiquity, scale, and visibility. If we contemplate the geometric earthworks of the Upper Purus within this framework, it becomes evident that they, in all probability, were systematically constructed as ritual or ceremonial arenas laden with visible and imperceptible socio-ceremonial meanings. They were locations that reinforced perhaps not only a communally shared identity but also the power of more privileged authorities. The geometric ditched enclosures show high permanence, constructed to last for generations, as the ditches were several meters deep during the active use of the sites. They are large in scale, generally covering areas between 3–10 hectares. As ubiquity and centrality are variables linked with the location of settlement sites, which in the Upper Purus region still require further studies, it is less straightforward to say whether these monuments were centrally or peripherally located in relation to the settlements, but they are indisputably ubiquitous in the region of the Upper Purus, where hundreds of geometric earthwork sites have been registered so far¹. In their core area, the distance between different earthwork sites is generally 2–10 km. Concerning visibility, the geometric earthworks were constructed on carefully selected elevated, yet level, surfaces, on the interfluvial plateaus with good visibility over the surrounding terrain, assumingly meant to be seen, not concealed.

Although we do not yet have evidence displaying a centralized settlement site hierarchy or clear social ranking systems in the archaeological record of the geometric enclosure building culture in the Upper Purus, the very existence of these monumental earthworks obviously involves rather advanced systems of planning, decision-making, and labor-organization. In archaeological contexts, early ceremonial architecture is considered one of the most pervasive diagnostic indicators of evolving social complexity pointing also to societies' evolved concepts of ideology and ritual (Demarest and Conrad 1992; Donnan 1985) and displaying some degree of formalized group behaviors (Grove and Gillespie 1992). Monumental ceremonial sites may suggest corporate labor tasks carried out to benefit the local community and to fortify the population's cohesion and the right to govern a given territory (Grove and Gillespie 1992:18) or as a form of ritual performance (Renfrew 1973). For example, in the late pre-Columbian Coastal Peru, the upkeep of communal irrigation systems had significant ritual value, at the same time strengthening social solidarity among the groups involved in corporate tasks (Netherly 1984). Alternatively, in the context of British Neolithic causewayed enclosures, explained as sites for communal gatherings and/or ritual activities, the construction and maintenance of the ditch structures was interpreted to be a part of a collective competitive display to define social status through control over labor mobilization (Hodder 1992:199–200). Thus smaller peripheral groups would have been less able to become involved in these supposedly segmented labor activities.

In contemporary Amazonian indigenous villages, infrastructure construction, such as arranging and maintaining plazas used for public meetings, rituals, and sportive events, is a communal undertaking. We believe that building geometric enclosures was a collective effort requiring a certain amount of persons, but in contrast to contemporary communities, certainly involved a firmly organized social unit larger than a few families. Such sizeable organization of efforts implies the existence of an authority with power to activate

and control a considerable amount of people. Feasting is considered to be one of the crucial universal strategies for mobilizing labor, obtaining and employing power, and forming alliances in the scenario of emerging sociopolitical complexity (Chicoine 2011). According to Dietler (2001:78), "feasts give moral authority to exert persuasive power". However, power tied to ritual is not necessarily unchanging or enduring (Vega-Centeno 2007). In some Andean prehistoric ceremonial contexts, it appears that the act of constructing a ritual space was a significant element of ritual performance and that feasts formed a fundamental part of labor organization and ritualistic activities (Vega-Centeno 2007).

Ceremonial places and monuments can be seen as liminal spaces (Thomassen 2009) separated from everyday life by demarcating elements. They are also spaces where the society, or a restricted part of it, interacts with the world of creation, and because of their communicative tendency, they are meant to be structurally formalized (Moore 1996). Among the contemporary Kuikuro of the Upper Xingu region, the circular central plaza of the village also has a sacred significance in defining hierarchic distinctions between adult men, chiefs, and ancestors and being a spatial representation between the upper and lower segments of the society (Heckenberger 2005). A similar expression of spatial hierarchy is typical for many Macro-Gê groups of Central Brazil, considered politically equalitarian and non-complex, but having in contrast remarkably complicated socio-ceremonial organization. The circular village plan is a cultural feature fundamentally connected to the organization of these groups (e.g., Ewart 2003; Nimuendaju 1946, 1983; Turner 1979). Ritual obligations, intended for maintaining the dual organization of exogamous moieties in circular Bororo villages, were extremely numerous and highly structured (Lévi-Strauss 1963). The diacronic structure divided the community in two opposite moieties, involved in reciprocal obligations and employing symmetrical rights, but at the same time the social structure of these villages was concentrically hierarchized, exercising contradiction between the central (sacred), male dominated plaza, and the periphery (profane), formed by encircled residential units managed by women. Furthermore, Lévi-Strauss (1963) proposes that this structure of dual organizations has yet underlying triadic characteristics, which comprise village outskirts, and is therefore a variable model of organization.

Certain geometric earthwork sites of the Upper Purus, such as Severino Calazans and Fazenda Atlântica, feature smaller divided areas, specifically, remains of low earthen rectangular embankment structures located inside the ditched enclosures (Saunaluoma 2012; Saunaluoma and Schaan 2012; Schaan et al. 2012). This may imply that these sections were arranged for more privileged use by specific personages of the society. The right of entry into these delimited spaces could also have been determined by age or gender. This is difficult to confirm archaeologically, but ethnohistoric sources mention that certain indigenous rituals in the region were designed exclusively for adult men (Armentia 1887:65; Labre 1889:498), who hence enjoyed a differentiated social prestige and privileges compared with women or youth. The contemporary indigenous groups still perform puberty rituals that separate adolescents from the opposite sex and other age groups, as well as shamanic ceremonies that pertain to specific spaces and times (Virtanen 2012). In the villages of the Apinayé, pertaining to the Macro-Gê linguistic family, a specific area was separated to seclude those in the passage to adulthood, undergoing an initiation process, or following a diet due to a spiritual elucidation. The circular central plaza, and the straight radial roads setting out from it, served as an important ritual scene, particularly throughout the ceremonial season. For example, a circular open area was cleaned and used for warriors' initiation ceremonies at a distance of 200 m from the village and connected by a straight path to the easternmost point of the circle of houses (Nimuendajú 1983:35).

While a certain ranking of elements, mainly varying sizes and structural design complexity of the earthworks, can be observed among the Upper Purus geometric enclosure sites, the overall density of cultural material is low at the sites, and the distribution of cultural deposits indicates that the flat area enclosed by ditches and/or embankments was kept clean, most likely functioning as a plaza meant for communal gatherings or ceremonies. Ceramic material recovered at the sites consists mostly of domestic ware comprising cooking (some sherds are carbonized on the exterior) and serving (fragments of large containers are quite common in the ceramic collections) dishes, implying communal consumption, and perhaps feasting, at the sites. Utilitarian ceramics are usually found in the embankments, particularly in their most elevated parts near the enclosure entrances, as if they formed part of the construction material of these structures or were depos-

ited there gradually in the course of the site's active utilization, and on the slopes of the ditches, as if thrown there during the maintenance and cleaning of the enclosed space. The cleanliness of ceremonial spaces is still vital in the collective memory of the contemporary Manchineri (see Virtanen 2011a:289). Moreover, ceramics are also found accumulated at ditch bases in those parts of the ditch closest to the entrance of the enclosure, for example at the JK and Fazenda São Paulo sites (Saunaluoma and Schaan 2012), and in special features, such as the small artificial mound inside the enclosure at the Fazenda Atlântica site (Saunaluoma 2012). However, the finer ceramic material recovered from these contexts is completely different from the utilitarian ceramics recovered from the sites' other sections, and clearly deliberately deposited, suggesting a votive function of these contexts. Although evident artifactual indicators of divisions of rank, status, and wealth are sparse within the earthworks, these supposed ritual contexts, featuring elaborately decorated pottery, may be signs of evolving prestige building and exchange of elite-related goods, thus reflecting some degree of social difference among the community members. The small artificial mound of dark brown anthropic soil containing a considerable quantity of decorated pottery at the Fazenda Atlântica site is an especially interesting structure. The documented feature (Saunaluoma 2012:Figure 5) in the 110–120 cm excavation level consisting of fragments of burned clay, cemented calcium carbonate nodules, tiny fragments of unburned bones, and a carinated vessel (Fig. 3) broken in situ, is surprising. Some of the bones were identified as fragments of the upper jaw and teeth of agouti (family *Dasyproctidae*), a rodent with widespread distribution in the Amazonian area. Remains of rodents are found in ritual contexts at many Andean prehistoric ceremonial sites (Chicoine 2011: Table 3; Sandweiss and Wing 1997).

At the Santa Ana-La Florida ceremonial site located on the eastern slopes of the Ecuadorian Andes, a decorated vessel associated with ritual activities and containing residues of calcium carbonate and coca (*Erythroxylum coca*) leaves was recovered (Zarillo & Valdez 2013:164).

At Coastal Peruvian early ceremonial centers, carinated bowls are interpreted as specialized serving vessels, even markers of social status in ritual or feasting contexts (Chicoine 2011:447). The carinated vessel form is not considered common in ceramic styles of the Upper Purus region (Dias 2006), but is frequent in some pre-Columbian ceramic traditions of the Peruvian Amazon, such as Yasuní (Evans and Meggers 1968) and Tutishcainyo (Lathrap 1970). Apparently, the small mound of Fazenda Atlântica was a place to deposit special materials related to ritual and feasting, possibly also indicating a long-distance societal interaction.



Figure 3: Carinated vessel recovered at the Fazenda Atlântica site.

Roosevelt (1987:160) suggests that appearance of human figures in Amazonian iconography may refer to an elite ancestral cult. The human images in the late pre-Columbian pottery art are explained representing higher status individuals of the society, such as chiefs or shamans, seated on stools and/or holding paraphernalia symbolizing ritual or political power (Gomes 2008; Roosevelt 1987:160). The archaeological context of the Upper Purus includes globular anthropomorphic vessels with cylindrical necks and bases, representing human faces, constructed using the appliqué technique, and considered typical of the local ceramic tradition (Dias 2006). Some of these anthropomorphic jars have their backside perforated (Fig. 4). According to Gomes (2002, 2008), this type of vessel perforation implies a use as an urn for human bones and is related to shamanism and ancestor veneration. However, to date, vessels of this type have not been found in contexts securely associated with the geometric earthworks. Several anthropomorphic jars, presently stored in the Museu da Borracha, in Rio Branco, were recovered in the early 1970s. According to the museum's catalogue, the artifacts were found deposited on the ground surface in the forest, in the region of the Abunã river basin.

Even though a re-evaluation is needed to verify whether the globular anthropomorphic vessels in fact correlate with the geometric earthworks or if they were manufactured by another population occupying the region after the construction and primary use of the earthworks, these artifacts may be interpreted as idolization of important personalities of the community. They attest that the shamanistic institution and the central role of ancestral spirits in socio-cosmology and rituals were incorporated in the region's indigenous socio-political organization during the prehistoric period as they still are today (see also Santos-Granero 1986).

Presently, the paraphernalia, such as musical instruments used in Manchineri and Apurinã rituals, are usually made from organic materials. Furthermore, the Apurinã oral history refers to an ancient custom of conserving bones of certain deceased members of the community in specific burial containers. As soon as the buried body decomposed, the bones of the deceased were unearthed, cleaned, and placed in a basket made of vegetal material. The basket was then taken to a *kyyynyry* festivity, and after the spirit of the dead person had left the bone remains, the basket was guarded in the house of the deceased's relatives. The Apurinã also narrate that in the past they did not have cemeteries because there was a time when they were less sedentary and the dead were buried to places that were forgotten when they moved on. On the other hand, some people speak about burials in large vases. The Apurinã were divided to various sub-groups (*wakuri*) which had different burial methods. (Virtanen fieldwork 2013, 2014).



Figure 4. Anthropomorphic jar with perforated backside from Upper Purus.

Although the geometric earthworks manifest themselves in many outline variants, such as ellipses, octagons, and U- and D-shapes, it seems that circular and square shapes

were the most significant, being clearly the most numerous outlines in the architecture of these ditched enclosures (Schaan et al. 2007:Fig. 4). The circle and the square are considered as dual forms of an essentially ritual nature; this notion is universal and of primordial origin (Seidenberg 1981). It is still unclear whether these different outline forms represent functional, ethnical, or socio-organizational principles, but the circular enclosures seem to predominate in the southern part of the area containing the geometric earthworks, while quadrangular forms are more common in the north. The core area in the middle, features the majority of composite sites, i.e., the combinations of circular and square-shaped earthworks usually connected by straight roads, such as Fazenda Atlântica and Balneário Quinauá (Saunaluoma 2012). In pre-Columbian Andean ceremonial-civic contexts, the transition from the circular representation of a social space to the quadrangular one may be an indicator of expanding hierarchic structures within the society (Hornborg 1990).

Explorer Antonio Labre (1889) traveled by foot from the confluence of the Beni and Madre de Dios, a territory controlled by Tacana-speaking tribes, to the Acre River to open up a tentative commercial terrestrial connection between these regions, and made some interesting notes on the late nineteenth century interfluvial indigenous occupations. Labre (1889:498) describes the Araona (pertaining to the Tacana linguistic group) leadership at that time: "Although they have "medicine-man" charged with religious duties and remaining celibates, the chief is nevertheless pontifex of the church" and mentions, for example, many Araona villages, some of which still had a "small temple with a clean courtyard in circular form" and "a form of government, temples, and a form of worship". These villages were situated in what is now the Bolivian department of Pando, on the northern side of the Orton River. Although it is currently impossible to assess the full extent of the earthwork tradition in the Bolivian Amazon, as the rainforest is still well preserved on the Bolivian side of the border hiding the earthwork sites from satellite imagery view, the geometric earthworks' area of occurrence most likely extends to the department of Pando. Ethnohistoric accounts also mention Tacana temples with four entrances which are located on each side of the square-shaped shrines (Hissink and Hahn 2000), resembling the structural outline of the Tequinho site's earthworks (Fig. 5). On the other hand, in the Tumiã River Apurinã indigenous territory, Virtanen has participated in various *kyyynyry* festivities that are based on dance patterns performed in quadrangular or circular formations. Each *kyyynyry* has its main organizer ("owner"), who often provides food and drinks for the participants, such as patoá palm vine, since generosity is commonly expected from the leaders (Lévi-Strauss 1967[1944]; Clastres 1977[1974]).

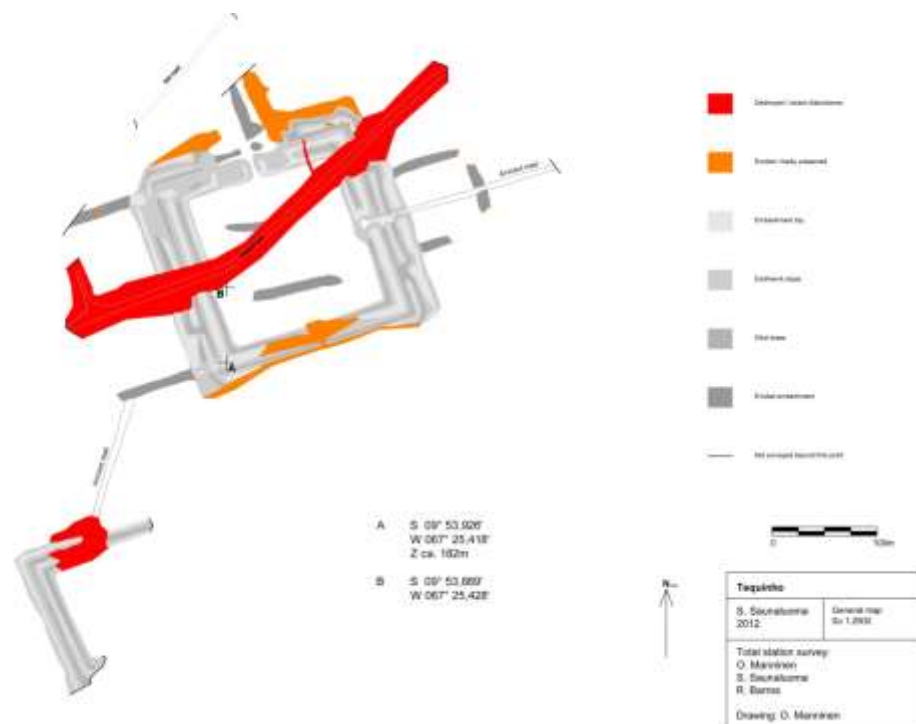


Figure 5. The Tequinho earthwork site featuring concentric square-shaped ditches.

Ritual activities of the Manchineri and Apurinã reciprocate relations between community members and non-humans (animal, plant, mythical, and ancestral) spirits. These beings interact with the community, transmitting spiritual strength, protection, fertility, and information to members of the community. Rituals also differentiate community members. Those persons who have closer contacts with non-human beings, or to whom non-humans often appear, are able to augment their knowledge and skills, thus expanding their level of individual power. Rituals and their related symbolic codes are crucial in obtaining personal strength and success in relationships with non-human spirits, as well as with other people.

One of the most important tasks of the contemporary shaman is to ensure peaceful co-habitation of the community with various non-human beings and ancestral spirits. Among the Manchineri, communication with ancestors takes place, for instance, in *ayahuasca* (*kamalampi*) shamanism, because the tradition of communal ancestral festivities no longer persists. During *ayahuasca* rituals the members of the community can experience and live through their lineages by relating with ancestral spirits. Curative procedures are also undertaken by a shaman residing unperturbedly far from the immediate village center. Hence, the need for a special non-profane space remains fixed in the cultural memory of the Manchineri. Based on Virtanen's fieldwork among the Manchineri and on their perception of visual arts, we contend that geometric designs can reflect the importance of ancestors and their central role in communities' socio-philosophy. For the contemporary Manchineri, certain geometric motifs indeed have meaning as signs of the specific ancestors. Some ancestors possess their own geometric designs that may appear in shamanic *ayahuasca* visions, transmitting ancestral knowledge and power. These types of designs are also applied in ceramics and body paintings (Virtanen 2011a).

Socio-Organizational Variability

Archaeological Evidence

As a social outcome, the construction of the geometric earthworks in the Upper Purus evokes diverse potential organizational models. Contemplating the features of the triarchic model (Fairtlough 2005), we suggest that the elements of hierarchy include a demarcation of space inside and between the sites' main ditched enclosures, as well as a variation of earthwork sizes and overall structural design complexity. Some sites are structurally more complex and substantial and have obviously required more labor investment than the simpler earthwork sites. Also the number of enclosures within a site varies, generally from one to six, and the time-span of use seems to have been longer at larger sites (Saunaluoma & Schaan 2012). The Tequinho (Fig. 5) and Los Angeles (Fig. 6) sites represent the extremes of intra-site spatial complexity and magnitude. The earthwork of Los Angeles features an open circular area, whereas the Tequinho site is structurally much more elaborate and divided into various sectors. Tequinho is undoubtedly one of the most important archaeological sites of the Upper Purus situated in the core area of geometric earthworks. The site, which once covered an area of approximately 15 hectares, is located 182 m above sea level and consists of concentric square-shaped ditches with contiguous external embankments, remains of rectangular walled enclosures, and linear roads. The site is partially affected by recent land-use and its southern side was damaged by a natural landslide. The Los Angeles site, surveyed for the first time in 1970s (Dias 2006), is located approximately 130 km to the southwest of Tequinho, in the southern periphery of the geometric earthworks' area of occurrence. The site comprises a solitary circular ditch 200 m in diameter, which was built at the edge of a high plateau 239 m above sea level and covers an area of approximately five hectares. The earthwork is cut by a modern dirt road.

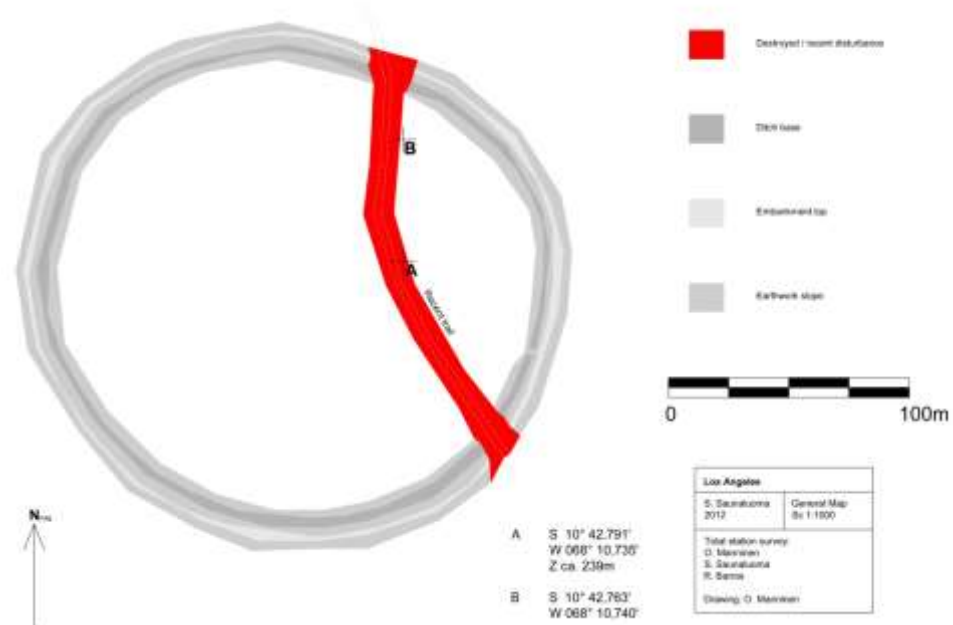


Figure 6. The Los Angeles circular earthwork.

The elements of heterarchy can be perceived in the similarity of the earthworks' construction techniques, the shared concept of spatial arrangement, regardless of the site's size or architectural complexity, and the predominant use of the sites as ceremonial places (Saunaluoma & Schaan 2012; Saunaluoma 2012). At the earthwork sites in the Upper Purus, the ditch construction backfill is customarily piled on the exterior side of the enclosure. The distribution of scarce cultural material at the sites and the earthworks' location in the landscape, on the elevated terra firme plateaus, are regionally shared aspects as well. Equally, the similarity of the earthworks' structural pattern, particularly the symmetry of the circular and square-shapes of the ditches and the roads entering into and connecting the separate earthworks, implies a close socio-cultural connection between the distinct communities building and using these sites.

The elements of autonomy include the earthwork sites' varying layouts. As can be perceived from satellite imagery and aerial photos (Schaan et al. 2010), each of the numerous geometric enclosure sites located in southwestern Amazonia is unique in its smaller morphological details. Also the votive contexts at certain sites, comprising ornamental ceramics, seem to be a shared attribute, but the contents of these features vary from site to site (Saunaluoma 2012; Saunaluoma & Schaan 2012). The ceramic materials collected from the sites, mainly undecorated utilitarian ware, can be considered as local sub-styles of the Quinari tradition, established for the region by Ondemar Dias (2006). Although the ceramic collections of the geometric earthwork sites correspond to the general description of the Quinari tradition, minor attributes of the pottery indicate considerable local variability. This was proven by a study using a neutron activation analysis to differentiate the chemical constituents of ceramic assemblages recovered at diverse earthwork sites (Latini et al. 2001).

Ethnographic Information

The models of organization and socio-political roles among the modern-day indigenous populations of the Upper and Central Purus are diverse and contextually changeable. In addition to heterarchic horizontal power, centralized hierarchy systems, essentially related to the spaces of multiple overlapping social actors can be recognized. The power employed in hierarchic relationships is in the hands of the village leader, who is expected to be in charge of organizing people to undertake communal labor projects, such as important hunting trips or canoe building and to control the primary contacts in intergroup relationships that are strategic for alliance building and reproducing political connections. The Manchineri village leaders are called *whoksejery*, which can be literally translated as “our chief”. The Apurinã often draw a parallel between a village leader and *awite*,

the term used for the "chiefs/leaders" of the animal species, certain trees, meteorological phenomena and stones. *Anĩte* is "owner" or "great one" of their bands and entities of the same kind. The *kyyry* festivities also have their own *anĩte* (often village leaders) who provide guests with food and beverages made from palm fruits. A prestigious Apurinã and Manchineri village leader usually has a bigger house and more property than other community members. In the past their leaders used to sit on low wooden stools reserved only for them.

Spatial hierarchy and spatial relationships between persons and non-human entities are important in demonstrating the autonomous power of the leader, as shown among the present-day Xinguan (Kuikuro) chiefs (Heckenberger 2005). The chief representatively controls the village's cardinal points, roads, and plazas through the focal position of his household in the village. Additionally, among the contemporary Wanano, located in northwestern Amazon, the community's social hierarchy is displayed specifically in the geographical position of the houses belonging to different family lineages, and in the particularized control of strategically situated resource zones (Chernela 1993).

Political power is also shared among various types of shamans (*kabontshi* in Manchineri, *mjyty* in Apurinã), who in the past were responsible for warfare, and are still generally in charge of festivities, healing, and political coalitions (Fig. 7). Shamans' hierarchic connections are, and have been, maintained by the array of their expertise and knowledge on the non-human world. Apurinã and Manchineri travel from far to consult their shamans living in other villages; hence, they rule beyond village boundaries. The position of a shaman is rarely inherited; instead, it depends on the communal nomination for this responsibility role or a person's capability to communicate with non-human beings.



Figure 7. Manchineri *yikaklu* festivity led by a shaman.

Among the contemporary Manchineri and Apurinã, a socio-organizational hierarchy is also evident in communities' new responsibility roles, such as indigenous teachers, health agents, agroforestry agents, and the indigenous group's representative association coordinators. Their power is mostly demonstrated in the actions they build with non-Indians, and in their expertise in verbal skills, knowledge on foreign complex concepts and in specific economical or ecological areas of interest. Communal meetings are significant events for re-establishing political power, for both intra-group and inter-group connections. The knowledge of persons in responsibility roles is then at stake because they are in charge of the political decisions concerning their domains and of the impact

these end results have for a collective lifestyle (see Virtanen 2009). Furthermore, the hierarchic model includes the authority of elders (*tsru yineru* in Manchinéri and *kiumanbitxi* in Apurinã), who are socially influential and important counsellors in comparison to the young ones (Virtanen 2012). In Apurinã villages, *kiumanbitxi* ("elder") is a commonly used term for a leader. Today, the importance between different types of authorities, such as village leaders' political power, elders' authority, shamans' spiritual power, and the economic power of the indigenous group's association leaders, is growing substantially within the communities as power is also practiced outside the village settings. Contemporary shamanic practices are also present when forming alliances and in economic production (Virtanen 2014).

Today hierarchic power is increasingly received from education and experience acquired through accomplishments in urban areas and interethnic relationships. Nevertheless, all community members have to control their actions in relation to non-human beings, such as the guardians of the forest and waters and ancestors. Amazonian indigenous cosmology does not consider 'nature' as a separated space, but a place where 'culture' continues and a place that is inhabited by multiple actors possessing different personalities and bodies, such as animal and plant spirits (Viveiros de Castro 1996). Ancestors and non-humans are fundamental in affecting peoples' identification of their placement in the lineage hierarchy.

In addition to the hierarchic model, there is also heterarchic form of leadership: among the Manchinéri and Apurinã, inherited memberships in endogamous sub-groups contributed to the formation of a horizontal organization. Both the Apurinã and Manchinéri tell that in ancient times, power was distributed horizontally between the sub-groups, *nerus* (in Manchinéri) and *wakurus* (in Apurinã), though some of them were more influential and enjoyed more prestige than the other sub-groups. The Manchinéri *nerus* formed the Yine and the Apurinã *wakurus* the Pupÿkary, the names that both peoples still auto-identify as. Today the Apurinã give more importance to their two intermarrying moieties, *Xiwapurynyry* and *Meetymanety* that also form the groups of parallel and cross-cousins. Those of the same moiety are regarded as parallel cousins, and thus as sisters and brothers, creating egalitarian relations with a large group of people in contrast to cross-cousins considered members of the opposing moiety.

Ancestral sub-groups had their own village leaders and counsellors, but all *nerus* had various common cultural heroes. Sporting contests, such as archery tournaments, races, and other strength-based competitions were arranged in specific spaces, and every contestant represented a certain sub-group. We suppose that these contests also re-established hierarchic order among the endogamous sub-groups, as the members of the most prestigious sub-groups could only marry persons belonging to specified groups. The Manchinéri say that these ancestral sub-groups were forced to migrate to diverse geographical locations at the time of European colonization and begin to intermarry during the late nineteenth-century rubber boom in the region (Gow 1991; Virtanen 2011a). The competitions between the sub-groups were also an important element in the instruction of young men (Virtanen 2012). In Lowland South America, competitions have typically acted as a means for displaying the power and prestige of different ancestral or corporate groups, and many indigenous peoples in central Brazil still engage in various game activities (Maybury-Lewis 1967; Nimuendaju 1983:13). Although the *nerus* and *wakurus* no longer have much importance, heterarchic power is experienced at the local village level. As mentioned, power is distributed among village leaders, shamans, teachers, health agents, agroforestry agents, and coordinators of indigenous associations. They all contribute to the relationships with others and to communal decisions. Moreover, the people in different responsibility roles often control the space by presenting initiatives (which are finally discussed and decided on collectively) for interactive relationships and alliances with non-Indians and other indigenous groups.

In spite of the hierarchic and heterarchic organizations of power, the autonomy of Apurinã and Manchinéri individuals and villages is rarely questioned. Today, villages are independent units even though they are situated in the same demarcated indigenous area. As the indigenous territory is a rather closed unit, the permission to enter the reserve is carefully controlled by the inhabitants. The local groups continue to have conflicts, as many of the nuclear families and settlement units prefer to have their sovereignty (see Schiel 2004). The Apurinã live dispersed in numerous indigenous territories. Individuals enjoy notable social autonomy and everyone's personal freedom is respected; for example, contribution to communal labor is usually based on a person's individual choice. However, certain communal moral codes, such as the sharing of supplies, ascertain the

well-being of each community member (cf. Overing 1988). Communities' equal access to resources is highly valued, though in the communal meetings the use of specific forestry resources may be limited for certain periods of the year to avoid their over-exploitation.

Discussion

An archaeological line of evidence shows the development of early ceremonial centers in the Upper Purus Basin ca. 3000 B.P. onwards. The complexity of the social structure of the communities that built and used the earthwork sites may not be perceptible in the material culture, such as the burials, residential areas, accumulation of surplus, and acquisition of exotic goods, but instead in the symbolic values and ideological devotion materialized in the architecture of the geometric enclosures. Although certain principles for constructing a geometric earthwork in the region of the Upper Purus do exist, the sites are by no means identical. Instead, the diversity of the earthwork forms and sizes displays distinct characteristics of the socio-cultural individuality of the local populations. Among the various outline variants, such as ellipses, octagons, and U- and D-shapes, the circle and the square seem to be the most significant forms. The ethnohistoric examples presented here reveal the importance that square and circular spaces had, and continue to have, not only for the ritual but also for the social order of the Amazonian peoples at all times. On the other hand, the chronological data do not shed light on the meaning of the differences in the forms and sizes of the earthworks: the older sites are not notably smaller or simpler than the most recent ones, so the temporal factor seems not to be of special significance to the invention and completion of different earthwork site layouts. Derived from the contemporary Manchinieri's thinking on visual designs, we suggest that the different outlines of the geometric earthworks could have operated as symbols for the unity of the group and indicated the group's connection and control over a given territory and its inhabiting ancestral spirits.

Not all societal relationships are straightforwardly hierarchic, and public ceremonial monuments can reinforce both hierarchic and egalitarian relations (Thompson and Pluckhahn 2011). The organization of the geometric earthworks points to communities that were integrated in a regional, in some aspects heterarchic, ideological system, but nevertheless displaying variation at the local level; the elements of local autonomy are apparent in the uniqueness of each site layout, and the elements of hierarchy in the contrast between the minor earthwork sites and the larger and structurally more laborious centers of social/ideological interaction. Therefore, we believe the triarchic organizational model would hold well with the society controlling the geometric earthworks of Upper Purus. According to Carneiro (1970, 2007), among many Amazonian societies, social order was generally maintained in local autonomous communities, but during the times of crises was transformed into chiefdom-like hierarchic organizations. We stress, however, that the varying organizational models were also practiced on a daily basis. As we have shown, among contemporary indigenous people in Southwestern Amazonia, the three different models of social organization are parallel and function efficiently.

Not only using but also constructing geometric earthworks may have been important social intra-group or inter-group events. The festive nature of this occasion would enable the local leaders to employ their persuasive power and pool a considerable amount of laborers, even from areas beyond the limits of their territories. Moreover, planning, constructing, and maintaining public monumental structures, as well as realizing communal or more restricted services at these ceremonial sites, undoubtedly required different actors and roles in the system of leadership and in the whole societal formation. We hypothesize that the organizational systems could have been unfixed, disposed to adjusting and varying, and in addition to a vertical implementation of authority, power could have been shared or distributed horizontally among smaller self-governing units. Hence, leadership roles can also vary, and under certain circumstances, power can be shifted to another social personality. The systems of leadership and control of sociopolitical power are dynamic and diverse among the contemporary indigenous groups of southwestern Amazonia. We have reason to believe that the set of circumstances was comparable during the pre-Columbian period as well.

As attested by Fausto (1999:934), Amazonian societies are primarily oriented toward the construction of persons through ritual and symbolic work, instead of the accumulation of material goods and surplus. This seems to be one of the key elements of Amazonian relatively heterogeneous sociopolitical systems at all times. The mechanism of ac-

quisition and transformation of symbolic capital into political and economic power (meaning control of labor and material property) under certain dynamic and exclusive circumstances, such as communal rituals, observed, for instance, among the contemporary, ideologically oriented Xinguan communities, actually derives from prehistory (Heckenberger 2005). The socio-ceremonial complexity was most likely a feature much more prominent among the ancient societies than today. Political and ideological power were not necessarily intertwined and ideological mechanisms could have advanced organizational complexity. Perhaps rituals, in the function of particular type of social practice, strengthened the power of leaders and the overall social stability in the tangle of the vertical and horizontal dimensions of social interaction.

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Notes

1. New sites are discovered at the same pace as the satellite imagery coverage in the region improves and size of the deforested areas increases, so the number of known earthwork sites and the extent of their area of occurrence are constantly increasing and changing. However, in the future, the use of LiDAR application could adequately resolve the question of total amount of earthworks in the region.

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