WARFARE ARCHAEOLOGY IN BRAZILIAN PREHISTORY: AN OVERVIEW*

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Resumo: *o artigo propõe apresentar e discutir alguns aspectos envolvendo evidências materiais de guerras e conflitos na pré-história do Brasil. O objetivo é apresentar um quadro, mesmo que parcial, de como atos de violência podem ser observados na cultura material, realizando-se um estado da arte do tema, e propondo perspectivas para o tema e o período apresentados. Se optou por realizar-se uma metodologia transdisciplinar, onde, além da arqueologia, dados históricos e antropológicos contribuem para se refletir sobre o passado pré-colonial brasileiro e as marcas de conflitos deixadas nos registros do passado dos povos indígenas.*

Palavras-chave: *Arqueologia do Conflito. Pré-história brasileira. Cultura Material.*

* Recebido em: 22.10.2021. Aprovado em: 13.12.2021. The term prehistory is herein used to inform a specific period-of-time, which was consolidated in the specialized literature; however, without taking into account the outrageous meanings associated with it. For this particular matter, see Funari and Noelli (2006, p. 14). Part of this article was published in Portuguese in the book "Arqueologia da Guerra e do Conflito", edited by Jaisson Teixeira Lino and Pedro Paulo A. Funari (LINO; FUNARI, 2013), in a chapter entitled "Guerra, conflito e violência na pré-história brasileira" (LINO et al., 2013).

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DOSSIÊ

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> *They overtake under loud shouting, tapping their feet on the ground and blowing their pipes, which are made of gourd. They tie rope over their bodies to later tie up their enemies. They dress their garments made on red feathers as a sign to differ from the opponents. They shoot fast and use flaming arrows against the opponents' thighs in order to set them on blaze, later on. When one of their own is hurt, they use special weeds for healing* (STADEN, 1974, p. 178, our translation).

For thousands of years, humans were hunter-gatherers and cooperation prevailed within their groups. Social hierarchy was centered on acting together to hunt, scavenge and collect. Gender collaborative relations may also be inferred, as well as other cohesive and common purpose social features, as attested by archaeological evidence. Paleolithic rock art (SAUVET *et al.,* 2009) reveals high social cooperation degree, even between women and men (PATOU-MATHIS, 2020). There is also lack of evidence about systematic armed conflicts among different human groups (for a different perspective, HAMES, 2019). Hunter-gatherer societies, even nowadays, may be considered prone to cooperate within, and to avoid conflicts with, other groups (FRY, 2007). However, sedentary lifestyle, agriculture, urbanism and the whole Neolithic setting introduced both inner group conflicts and warfare[1]. Inner hierarchical relations slipped from fluid and egalitarian to increasingly unequal, conflictive and violent; rather than unifying people for hunting, they led to competition.

Whatever the case may be for interpreting conflict in human societies, one can observe that violence against fellow human beings, both within the community and outside it, has been constant for the last thousands of years. The clearest and most striking case in the Americas refers to class societies, such as that of the Maya, which used rituals to kill captives. However, anthropophagic rituals, elsewhere, attest the importance of warfare, as earlier assessed by Florestan Fernandes (1952). The hunter-gatherer Amazonian Nukak people (POLITIS, 2007) did not have a word for war until late 20th century, but other peoples in the Americas had it as a core concept, at precolonial times. Violence as recurrent feature in recent Brazilian prehistory is the main subject of the present article. The Prehistoric time encompasses a long-time lapse, even in the Americas, and it includes hunter-gatherers, agriculturalist and imperial societies such as the Maya and Inca, just to mention a few. Even by limiting the study to nowadays Brazilian territory, the variety is huge. The antiquity of human presence is contentious, but the most skeptical scholars accept 10,000 BP as the closest time, but others go back to much earlier times.

When Europeans got to America, most indigenous peoples were at times of conflict with their enemies, and such a fact was wisely manipulated by the conquerors – this scenario potentiated native rivalry through alliances and material exchanges. Thus, one can conclude that, from the idea of heaven on Earth, the indigenous America featured conflict as element inherent to their socio-cultural aspects; it oftentimes drove the physical and spiritual continuity of different peoples.

The legacy of writers from the 16th and 17th centuries, in other words, from the early European colonization in Brazil, evidences the permanent state of conflict among a large number of peoples, which were historical rivals that had been fighting since

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the precolonial times. If we consider warfare as an aspect associated with the other social, political, economic and cultural systems of indigenous peoples, we addressed some considerations about the (in)visibility of the material culture related to warfare and conflict episodes. Based on a multidisciplinary perspective, we have counted on ethno-history and ethnology contributions to broaden the scope of sources of the main topic; however, having in mind the implications and necessary care with the use of post-contact documentation in the ethnographic analogy.

Following down, we present some archaeological elements involved in conflict contexts in the prehistory of the territory that constitutes Brazil today. The text consists of the following parts, seeking to better organize the data presented and following common typologies used in archaeology: "archaeological artefacts", "archaeological structures", "the rock art", "the settlement systems" and "osteological evidence".

ARCHAEOLOGICAL ARTEFACTS

Archaeological records have not been providing safe elements about the material evidence of archaeological artefacts clearly associated with warfare, conflicts or other elements of violence, so far. In any case, one can assume that a whole variety of arrowheads were produced with lithic raw material, and they are the records of weapons used in conflicts with other groups of humans, as well as of their regular use for hunting animals of different sizes. As an example of it, there is the large variety of arrowheads produced by the Umbu archaeological tradition (Figure 1), which has distinct geographic distribution in different parts of Southeastern and Southern Brazil. These arrowheads are found in archaeological sites associated with groups of hunter-gatherers who have lived between 12 and 1 thousand years ago (NOELLI, 1999-2000, p. 230).

Figure 1: Lithic arrowhead found in Nova Stetin I Archaeological site, Ibirama County-Santa Catarina State.
Source: Picture taken by Jaisson Teixeira Lino (2015).

Many artefacts that were closely linked to conflicts were made of wood. Because they resulted from organic matter, they were susceptible to quickly vanish among geological layers. Ethno-historical and ethnological made it possible to know about these materials. Concerning the specific case of Tupinambá Indians who lived in large areas of the Brazilian coast, back at the time of the Portuguese colonization, we have adopted a system based on the sociological bias by Florestan Fernandes, who presented data of the indigenous warfare material culture collected from the work by chroniclers from the 16th and 17th centuries in his book "The Social Function of War in the Tupinambá Society" (FERNANDES, 1970). Based on the writing in the works by Hans Staden, Andre Thevet, Jean de Lery, Pero de Magalhães Gandavo, Gabriel Soares de Souza, among others, Florestan classified the artefacts used by the Tupinambá people and their enemies as follows:

a) Bow and arrow: the main weapons used in long distance attacks. Bows were made of wood, they were long and convex-plane shaped, tied with cotton rope in each tip – in some cases, they were decorated with braided material and feathers. Arrows were approximately 1.60 m long, they were made of wood, and their tips were also worked on wood, fish bone or shark teeth. The arrows were also often decorated with feathers at the tip opposite to the arrowhead. They were the main Tupinambá weapons, and this people handled them with special ability and skill. They also held a case made of tree bark to store the arrows.

b) Club: it concerns a single piece made of very heavy timber. It was used to damage the opponent through strokes and blows. Clubs were used on fights, i.e., in combat involving straight contact with the enemy. They also worked as ritual weapon at the time to sacrifice prisoners subjected to the anthropophagic ritual.

c) Shield: Tupinambá people used to make their own shields for body protection against the arrows threw by their opponents. The bibliography brought information about raw material – shields were made of animal skin, such as tapir, or of "light" timber, to make warriors' locomotion easier.

d) Badges: some artefacts were used by warriors as a sign of distinction since they highlighted a tribal identity and a distinguished position; they used some material elements to intimidate and scare the enemies. Among these items are the *tembetás,* which are pieces made of lithic material or wood, decorated with feathers; besides, they also used paintings and scarifications throughout the body.

e) Music instruments: Either marching or in combat, Tupinambá warriors were accompanied by the sound of drums, snorers and bugles made of wood, gourd and animal skin. The flute made of the bones of enemies eaten during the anthropophagic rituals was a peculiar instrument.

f) Trophies: These same flutes made of human bones worked as war trophies that were shown some moments before the battle in order to intimidate the opponents. Necklaces made with the teeth of the eaten enemies also had this same intimidating purpose, since it depicted the likely same fate as that of previously captured enemies.

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g) Transportation means: when displacement allowed using waterways, Tupinambá people used canoes made of tree bark, they were moved by oars that, in case of battle on the river or sea (as shown in Figure 2), would work as shock weapon.

As one can observe, most artefacts used in war were made of timber, animal skin, feather, braid and tree bark, not mentioning the almost null visibility in archaeological sites. Is it possible to have some chance of preserving bone arrowpoints, bone flutes and necklaces made of human teeth. In any case, data have shown the war arsenal and equipment associated with indigenous conflicts; they illustrate the likely use of these artefacts also during precolonial times.

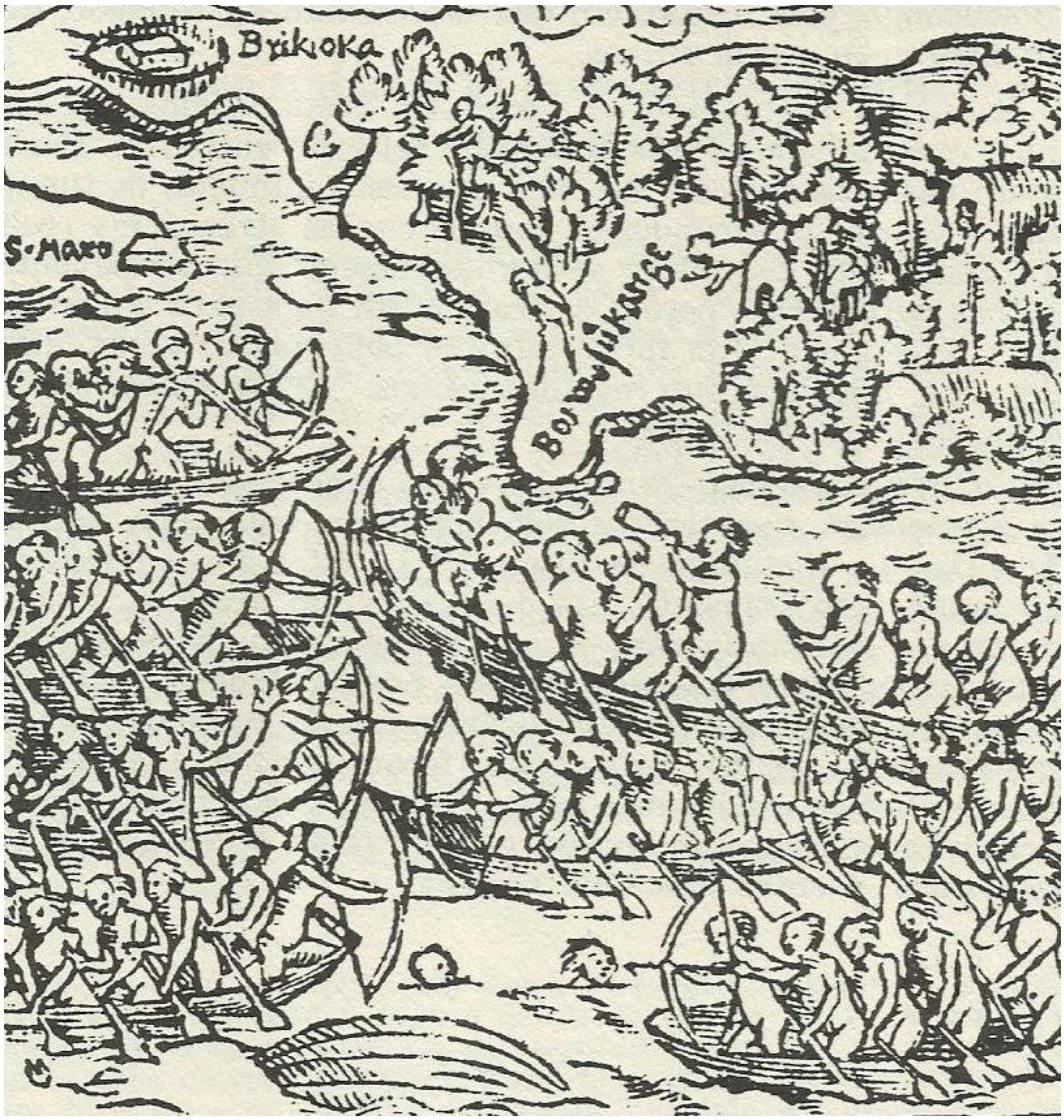

Figure 2: Sea combat scene between Indians and Europeans, one can see several war artefacts, such as bow and arrows, music instruments, canoes and oars.
Source: Staden (1974, p. 127).

Furthermore, with respect to the specific case of Tupinambá people, there was a series of rituals that altogether formed the complex structure of war, which involved the sense of honor, revenge and the memory of the tribal community, which put warfare as conditioning element of "being in the [indigenous] world". Thus, one finds a whole series of objects that were secondarily linked to conflicts: pipes used in meetings to discuss about who they should go to war with; the *maracas* to predict the fate of the war expedition; the ceramic containers used in "parties" before or after the fight; instruments related to eating the enemies, such as lithic blades used to shave prisoners, just to give some examples (FERNANDES, 1970; NOELLI, BROCHADO, 1998; VIVEIROS DE CASTRO, 2002).

Archaeologists have been developing research about the material culture of warfare based on anthropological studies and historical documentation, since they substantiate the continuity of and changes in war arsenal of different indigenous populations, regardless of visibility, or not, in the archaeological records. Two of the herein referenced studies depict the description of the material culture of warfare of Mbayá-Guaicurú Indians, from the Pantanal region (HERBERTS, 1998) and research based on ethno-historical data about the Xokleng Indians from the Atlantic Forest in Southern Brazil (LAVINA, 1994). These two cases showed that ethno-history and ethnography are the means to reach the aim of investigating the history of indigenous material culture and archaeology.

Mbayá-Guaicurú (Figure 3) objects collected by Ana Lúcia Herberts from the sources can be structured as follows:

a) bows: made of palm tree and leopard tree vine arches, they could be 3m long;
b) arrows: they could be 2m long, approximately, and were divided in four parts (tip, stick or rod, stem and plumage), the tips were made of wood, bones or iron; they had a whole variety of shapes; the stick or rod was made of wood. There are also records of using arrows made of soursop - which worked as rope - and gourd discs that helped to avoid major injuries when hunting small animals;
c) harpoon: it had wooden handler, heart-of-flame cords and wooden, bone or iron tips, it was a pitcher that held the weapon to the target;
d) spear and javelin: equipment good to be used at war – Guaicuru people used it in attacks with horses. They were made of wood, had iron head and handler made of cords - they could be up to 5m long -; they were also used to hunt jaguars, peccaries and alligators;
e) club: wooden instrument made of hard and resistant wood, it was used as shock weapon and was documented for the hunt of mid and small-sized animals – it was 1m long, at most;
f) weapon for beheading: it was documented as made of piranha fish teeth, it was used to behead prisoners;
g) *bodoque*: instrument made of two different pieces, the wooden bow was used to throw clay balls that worked as bullets;
h) laces: made of leather strips, they were used in case of horseback riding;
i) *boleadeira*: made of three leather strips with rock sharp balls in each extremity – this weapon was quite common in the American continent;
j) firearms: from the 19th century on, Guaicuru acquired firearms, mainly the one coming as assets from the Paraguay War; they replaced the traditional weapons, such as bow and arrows - clavinas, carbines and shotguns standout among these weapons;

k) metal weapons: acquired through exchange with Spanish and Portuguese individuals, mainly sword, machetes and knives;
l) defense weapons: the fur of jaguars and wolves were used in combat for protection;
m) canoes and oars: they used canoes made of a single trunk, the longest ones could fit up to 12 people, besides the oars that also worked as weapon in combat and in ambushes in the rivers (HERBERTS, 1998, p. 208-247).

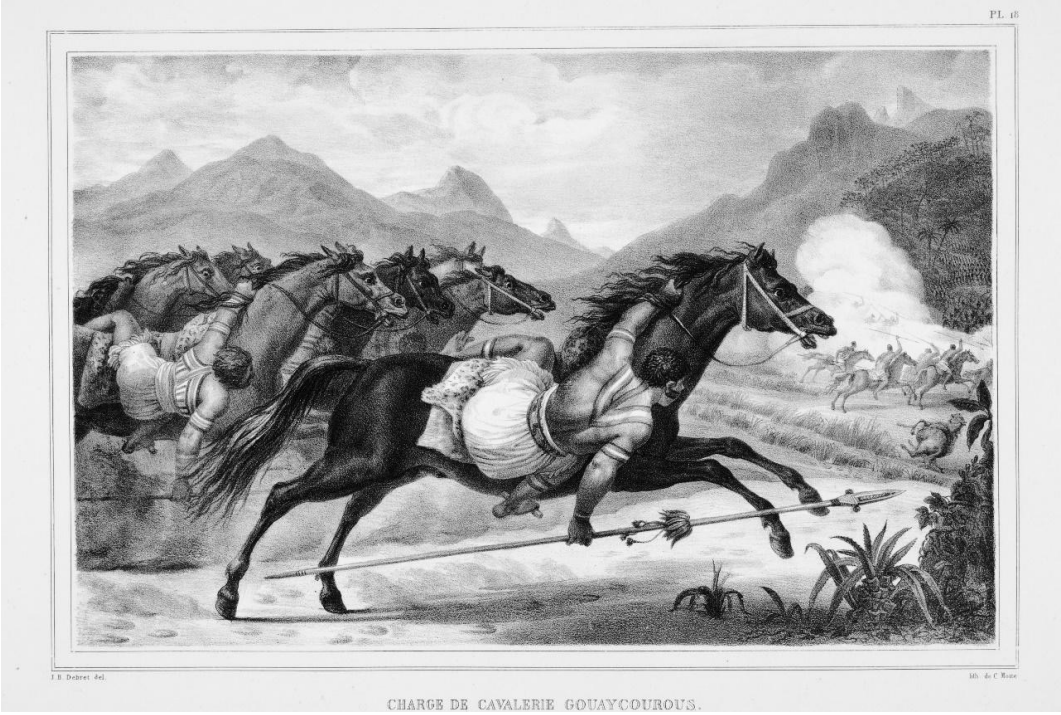

Figure 3: Guaicurú Indians in cavalry actions holding spears.
Source: Picture by Jean Baptiste Debret. Available at: http://www.brasiliana.usp.br/bbd/handle/1918/624510032. Acessed in: january 21th, 2018.

Another example of research that has used ethno-history data to describe the indigenous material culture can be found in the study by Rodrigo Lavina (1994), about Xokleng Indians from the Atlantic Forest in Southern Brazil. He describes the following artefacts linked to warfare and to hunting: 1 – Bows: made of Qu wood, they could be 2 m long, and have cords of nettle fibers; 2 – Arrows: made of bamboo, they could be up to 1.5 m long, their heads were made of wood or iron, assumingly, they were made of lithic material at the pre-colonial times; 3 – they had their bodies decorated with iron tips; 4 – cudgels: shock weapon made of wood and decorated with braids, it could be up to 15 m long (LAVINA, 1994, p. 77-81).

ARCHAEOLOGICAL STRUCTURES

Among archaeological structures evidenced in Brazil, there are two that stand out for their likely association with the aspects of conflict: geoglyphs from Acre State and sites with signs of fortification in Alto Xingu.

Archaeological research in the Amazon, from mid-20th century on, were supported by the ecological perspectives of cultural development, and by theorists such

as Julian Steward and Betty Meggers. According to these theoretical references, for too long people have believed that Amazonian dry lands were inappropriate for occupation, assumingly, this habitat would limit the development of populations settled in them (SHAAN *et al.,* 2007; FAUSTO, 2005).

As time went on, new arguments have risen against the environmental determinist theories and some studies contributed to make the image of pre-conquest of dry land peoples more complex, mainly after the discovery of geoglyphs in Acre State and in Alto Xingu. These geoglyphs showed that many peoples who had knowledge in geometry were organized regionally and worked together, they could make great engineering constructions developed on the clayey soils of the Amazon. Shaan et al. describe the geoglyphs from Acre State as follows:

The figures are formed by a set of ditch and adjacent low wall, which is formed by dug soil deposited outside the ditch. The gap formed by the ditch is 10m long, on average, and its depth ranges from 1 to 7 m. There are squared, rectangular, circular, oval, hexagonal geoglyphs, some with eight sides, at "u" shape, and straight paths that connect each other, some are approximately 600m long (SHAAN et al., 2007, p. 74, our translation).

The view of the first geoglyphs was only possible after the forest was put down. However, given its geometric perfection, they are hardly observed from ground level. Tools for air photos and visualization of satellite images have been helping the discovery of new land structures, nowadays.

It is believed that a dense population settled in the Acrean site where geoglyphs were found, although it was seen as quite inappropriate to support great population density. This theory is evidenced by the more than 100 sites discovered in a 250Km long region that goes from Xapuri County (Acre State) to Coca do Acre County (Amazonas State), close to the mouth of Acre River, in the Purus River. The few existing data date back to the geoglyphs from 500 BC to 1000 AD. Xipamanu site, for example, recorded the oldest ceramic samples – dated back to 2600 BP (SHAAN *et al*., 2007).

Geoglyphs (Figure 4) in Acre are located in the highlands, at the interflow of Abuña and Acre rivers. These locations allow a panoramic view that reaches dozens of miles, until the rivers' riparian forest. There are several circular figures South of the region and foursquare figures North of it. Despite the lack of navigable rivers in the region, there were several sources of high-quality drinking water. Some of these springs seem to be connected to the ditches, and it suggests the possibility that such structures were related to water management (SHAAN *et al*., 2007, p. 75-76).

The function of these structures is quite questioned. Dias and Carvalho explain the construction of the ditches-small walls by the removal of surface fertile soil accumulated outside the circle to form a vegetal barrier with pineapple crops, it was done to stop men and animals from crossing it on bare foot (DIAS, CARVALHO 1988, p. 23 *apud* SHAAN *et al*., 2007, p. 73). Other structures, according to these authors, may have protected the house of a chief. Dias and Carvalho (1988), however, does not believe in the hypothesis that the land structures have worked as trenches, since he considers that their internal surface would make defense harder, since it was lower than the external one. According to him, the construction of structures would result from external pressure (SHAAN *et al.,* 2007, p. 72-73).

Dias and Carvalho also considers that some structures would be related to sites without structure, and manpower would come to build them. Pärssinen believes that structures can remain from fortified settlements, and the small walls are part of the defensive palisades. He also suggests that the ditch - which is dug inside the dike, rather than outside it - would had been a water reservoir likely for turtle farming (SHAAN *et al.*, 2007, p. 73-74). Excavations performed by Dias and Carvalho (*apud* SHAAN et al., 2007) in the Los Angeles site, the biggest geoglyph ever found in that region, have shown the great occurrence of ceramic material inside the ditch, and it was interpreted as sporadic or occasional housing of these locals; it could also point towards its use at moments of crisis, or at cold times (SHAAN *et al.*, 2007, p. 72).

Figure 4: Aerial view of the geoglyph in Acre State. Àgua Fria Farm, Porto Alegre County.
Source: Picture Mauricio de Paiva. Available at: https://www.oeco.org.br/reportagens/uma-viagem-visual-aos-geoglifos-sua-importancia-e-seus-misterios/. Accessed in May 5th, 2021.

Land structures found in Bolivia have been interpreted as agricultural fields, but the perfect geometry of the geoglyphs indicate the possibility of a symbolic form. Cristina Sá highlights the relevance of meaning (in a special way) to the geometric figure and interpretation that a society could give to such a shape. Furthermore, walls and ditches were used by other societies in the past for protection and power demonstrations, as well as to define the physical limits of the community, its socialization place and to imprison animals (FRANCA *et al.*, 2010, p. 02).

By talking about the structures found in Alto Xingu, Carlos Fausto (2005) states that they feature fortified villages surrounded by "large defensive structures", with ditches presenting 10m in width and from 1 to 3m in depth – they would extend for 2Km around the occupation site (FAUSTO, 2005, p. 53-54). Three hypotheses have been currently assessed: fortified villages, locations for gatherings and ceremonies, the three of them altogether or even more (SHAAN *et al.*, 2007, p. 74).

Given the existence of land structures in Acre and also in Xingu, Shaan et al. have advocated for the hypothesis that they concern the outspread of a practice to respond to similar situations, such as the worsening of armed conflicts and expeditions for slaves' capture (SHAAN *et al*., 2007, p.74).

More than 15 sites were recorded in Alto Xingu with such a configuration. Similar to Acre, these sites are linked by well-defined paths, and it suggests their contemporary occupation and the intense social interaction among fortified communities. Based on estimates, the local and regional population would be close to thousands, and it would question the ecological determinism model by Betty Meggers and Julian Steward. Most structures in Xingu date back to 800 and 1300 years A. D., since it was at this time that the densest societies settled in other parts of the Amazon (FAUSTO, 2005, p. 53-55).

Fortifications in Xingu suggest the practice of large-scale war with populations likely from other regions, and this finding suggests a great regional interaction. Fortified villages in the 16th century have disappeared, likely because of the impact of the European conquest. Although the region was a late target of indigenous settlement, the impact of colonization reached them much earlier, mainly due to the depopulation caused by epidemics (FAUSTO, 2005, p. 55-56).

Although they did not last in the archaeological records, palisades were built by the Tupi people, as description left by several chroniclers. According to Fernandes (1970, p. 35), they were walls built out of trunks and wood sticks of two different types:

a) mobile structures built when Tupinambá people were supposed to attack the enemies and to protect themselves from the hurled arrows, and;
b) fixed walls built around the village to protect it from attacks; they were built in villages settled close to hostile tribes (Figure 5).

Figure 5: Scene of inter-tribe conflict, with emphasis on the presence of the palisade surrounding the village. Source: Staden (1974, p. 101).

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THE ROCK ART[2]

Several indigenous peoples would leave their testimonies through their graphics recorded on rock supports, be them through painting or bas-relief engravings. Scholars have been making effort to record and interpret such inscriptions for more than one century in all the Brazilian territory, and it ended up in the classification and creation of different artistic and aesthetic styles. Madu Gaspar presents a brief definition of rock painting art:

Rock painting art consists in graphic manifestations made on shelters, caves, walls, blocks and slabs based on the painting and engraving techniques. The prints can be elaborated through perforation or incision; and the pictures were carried out through different techniques: some with the friction of a block of dry and hard rock; others with brushes made of tree branches; in some other cases, the picture was made through finger painting or the pigment was turned into powder and blew on the rock (GASPAR, 2003, p. 15, our translation).

Among dozens of different traditions, sub-traditions and rock painting styles are some that stand out for the purpose of this article, in other words, aspects of conflicts in the indigenous archaeology, the Northeastern traditions that, as their own name highlights, are carried out in the Northeastern Brazilian states: Piauí, Rio Grande do Norte, Pernambuco, Ceará and Bahia, and the North portion of Minas Gerais State, in Southeastern Brazil (PROUS, 1992, p. 521).

The Northeastern tradition, which comprises sub-traditions and regional styles, has common elements that form it; scenes that encompass daily and/or magic actions and situations of populations that have created them. Thus, there are panels formed by anthropomorphic, zoomorphic and phytomorphic drawings. Sometimes, they appear isolated or associated, with emphasis on the following scenes: hunting, oftentimes with the presence of animals who would be the prey; rituals, with human figures around something, such as a tree; sex scenes; artefacts associated with human figures, such as headdresses, hunting tools, pots, ships, among some non- decipherable ones; besides conflict and violence scenes (PROUS, 1992, p. 521-525; MARTIN, 1984, p. 27-29). With respect to this last case, it is important to highlight the two styles that were herein briefly described: *Seridó* and *Serra da Capivara*.

Seridó sub-tradition can be found in rock painting sites in Rio Grande do Norte State and likely in Paraíba State; they date back to times older than 9000 years ago – they were assumingly made with vegetal-fiber brushes and colors that could change, including black, white, yellow and red. They were assessed by Gabriela Martin (1984; 1997), whose works have presented, among several figures representing sex, ritual and hunting, elements of conflict and fighting, as it can be observed on panels found in Carnaúba dos Dantas Region, RN. Warriors are shown at the moment of fight and they had weapons, they were interpreted by her as "warriors, armed to the teeth, who will show off by facing the enemies and alongside them, ithyphallic figures with outstanding sexual organs that seem to want to embody their vital force, the identifying force of the male power from the prehistory to our days" (MARTIN, 1984, p. 27, our translation).

Sub-tradition Serra da Capivara from the Northeastern tradition was firstly identified by Niéde Guidon, at Serra da Capivara, Piauí State; it has branches outspread to other states, such as the case described in Bahia State. Carlos Etchevarne (2009) and

collaborators have been assessing rock painting sites of this sub-tradition at Chapada Diamantina region, Bahia State, since 2006 (Figure 6). These panels were registered in blocks of sandstone rock formations; they were painted in red, black, white, yellow and in shades of orange, brown and purple – many figures had relatively small dimensions. Like the case evidenced by Seridó's sub-tradition, which has a whole variety of scenes, with emphasis on those concerning conflict. There are panels that present human figures in confrontation with the opponents, they held what seem to be weapons in their hands, such as clubs, spears and thrusters, and they suggest a battlefield. A drawing of a human figure with its mouth open may also suggest a battle context if one takes into consideration that several indigenous societies used to scream to terrify the opponents[3].

Briefly, the afore mentioned researcher concluded that "in confrontation scenes, be them real fights or rituals, the opposition between groups is marked by the graphic resource of the disposition of preferentially vertical characters" (ETCHEVARNE, 2009, p. 21, our translation).

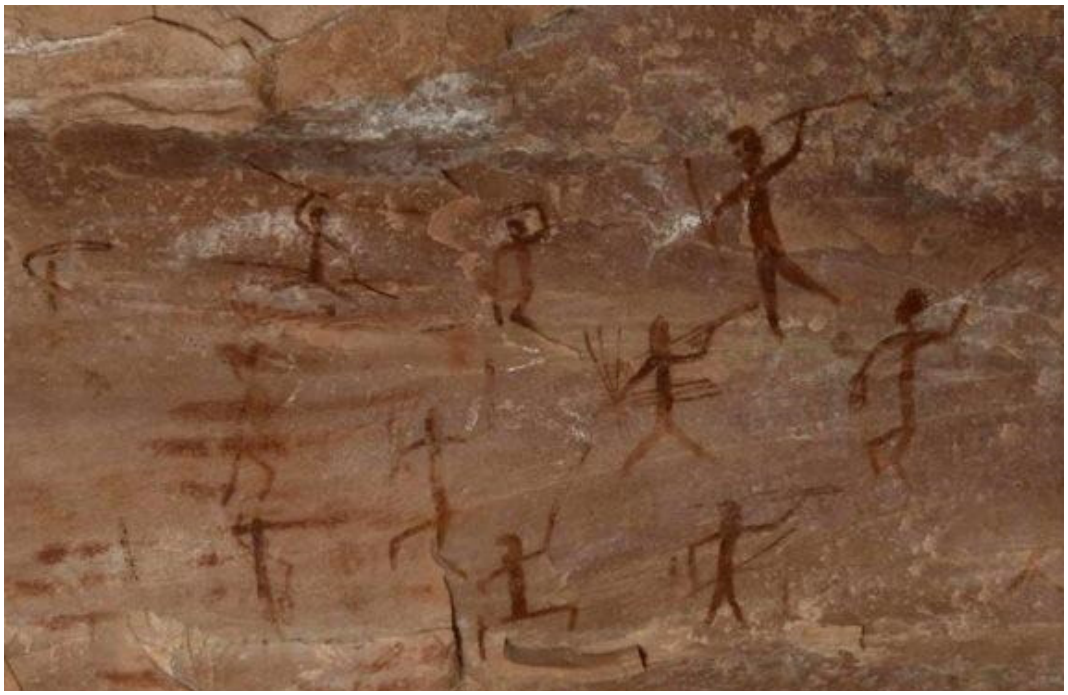

Figure 6: Rock paintings suggesting scenes of conflict in Toca do Pepino site, Bahia State.
Source: Etchevarne (2009, p. 25).

There are several images interpreted as referring to war, both actual and ritual at Serra da Capivara, Piauí State, Brazil (BELARMINO *et al.*, 2018). This findings can be considered evidence of the importance of conflict and warfare for several human populations that were more or lesser settled and featured by food production. Thus, while hunter-gatherers continued to live in nomadism, most of the more stable settlement groups were farmers, and characterized as more hierarchical and conflictual societies. Most of the more stable settlement groups were agriculturalists, and they were characterized as more hierarchical and conflictual societies. There are different competing theories about the features of several sedentary societies, but most of them stress the importance of conflict (MCGUIRE, SAITTA, 1996; FUNARI, 1999). The origins of social conflict and its earliest evidence are controversial issues, as it was made

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clear in a recent volume published on this subject (MOREAU, 2020). In any case, the presence of conflict, violence and warfare in prehistoric rock painting art attests to the importance of all these features. This was not far from Heraclitus' Πόλεμος Πατήρ πάντων, *Polemos pater panton,* "war is the father of all things" (FRAGMENT 53, n/d).

THE SETTLEMENT SYSTEMS

Human settlements in the pre-colonial past were, because of many reasons, built and abandoned. Different from theoretical perspectives substantiated by the "standard" model by Julian Steward and Betty Meggers, it is possible to think that the mobility of precolonial peoples had reasons other than limiting environmental factors, such as those shown by Jaisson Teixeira Lino for the Guarani archaeology case in Araranguá River valley, Southern Santa Catarina State. Anthropological theory and research allowed observing the multiple possibilities of settlement displacement, and also enabled taking into consideration their functioning, which must be in compliance with the different types of archaeological sites recorded in present times. Among the causes of mobility, one finds the conflicts with enemy peoples, or, yet, conflicts caused by internal "brawls" that must be seriously considered, since they must have influenced the distribution of villages throughout the landscape (LINO, 2009).

Another example in Southern Brazil regards the Kaingang Indians, but in this case, historical sources were used and the contact with the world of non-indigenous people was taken into account. Actually, it can work as reflection about mobility in the pre-colonial past, when it comes to displacement due to conflicts. The study by Laroque (2000) well-depicts the dynamics of migration moves by different Kaingang factions by assessing historical documents from the 19th century. These factions were around vast territories that encompassed São Paulo, Paraná, Santa Catarina and Rio Grande do Sul states. Many of such displacements resulted from conflicts between Indians belonging to this same ethnicity, who were oftentimes organized under the leadership of some chiefs. These chiefs made a mark on history, such as Condá, Fongue, Nonohay, Doble, among others. Conflicts took place at different moments and their aim was to defend the interests of groups subjected to the chiefs or even to political disputes between the chief and other leaderships that wanted to assume the control of the group. Thus, the group led by Vitorino Condá, for example, which comprised 200 individuals, occupied and settled different places; they constantly moved due to conflicts with rival chiefs, such as with Chief Fongue, who marked its presence in different sites such as the Guarapuava fields, the Irani fields and the Nonoai region. These native disputes were potentiated by the entry of the non-indigenous people into Southern Brazil lands; they wisely pushed historically rival tribes against each other in order to legitimate their extermination and "clean" the area from indigenous peoples. About the actions by Condá, Laroque concludes that "we can say that the actions taken by Chief Condá during these events did not mean that he was working for the *fóg*, but actually fulfilling the interests of the tribe he belonged to" (LAROQUE, 2000, p. 111, our translation).

OSTEOLOGICAL EVIDENCES

It is through bones that part of the past is revealed, archaeological evidences associated with other cultural and environmental aspects also allow getting to know

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more about the daily life of these people, be it in terms of eating habits, technological development, healthcare and disease conditions on a daily basis and even about the use of violence by or against them. Several research about violence, based on the archaeological context, were mainly carried out in the last two decades in Brazil (LESSA, GASPAR, 2012; SANTANA, CARVALHO, 2013; SANTANA, 2010; LESSA, SCHERER, 2008; LESSA, 2004; LESSA, MEDEIROS, 2001), as well as in other parts of South America - the publication organized by Mazz and Berón (2012), "Archaeological indicators of violence, war and conflict", which gathers works from different countries about this topic, in the most remote contexts or in the forensic field, is a reference –, studies related to the context of social conflicts in the 20th century. It is essential to highlight that the forensic study in Latin America – under the North-American influence – has been growing since the last decade of the 20th century, and it resulted in the formation of research laboratories and teams, and on publications and windows of opportunity to assess either the aspects concerning human rights and armed conflicts, or the impact of violent actions on human bones (HUFFSCHMID, 2015; SANABRIA, 2008; MAZZ *et al.,* 2012; KIMMERLE, BARAYBAR, 2011; CERDÁ, *et al*., 2010).

According to Faria and Gomes (2008), bones have the ability to preserve important information in their structure, and it can provide evidences about daily practices or other events. Understanding paleopathologies, feeding practices, dental morphology, as well as burial modes, taphonomy processes and the overall context of graving allow you to draw the profile of an individual or group of individuals linked to general or specific contexts. We have assessed the paleopathologies based on the perspective of health and disease process, since they allow formulating explanatory models for human living conditions depending on signs of past diseases. This perspective is related to the study on normal morphological variability; it is modulated by anthropology and archaeology, and it may be linked to medicine at different moments (SOUZA, 2011; LESSA, 1999).

Traumatic paleopathologies allow the revelation of aspects related to physical conditions, to the relationship between man and the environment, and intra- and intergroup conflict relationships in prehistory through bone injuries caused by trauma. Traumatic injuries, mainly fractures, form pathological conditions that are easily recognized in osteological records; however, identifying their etiology is a quite complex task (SANTANA, 2013; WALDRON, 2009). Lovell (2008) defines fractures as the total or partial disruption of the bone's continuity, and they can be different – from simple (closed) to composed (open) – and be caused by a direct or indirect force. Adams (1980) establishes three divisions for the etiology of fractures:

- Caused by acute trauma – reach healthy bones and are produced by episodes of violence or accidents;
- Caused by fatigue or stress – happen in apparently healthy bones that, due to moves or small and repetitive trauma, get weaker with time and end up disrupting;
- Pathological fractures – cause spontaneous bone discontinuity or disruption caused by a simple injury due to a failure previously caused by a pathology.

Although not always perceptible, causing elements generate different fractures, which are classified according to features printed on the bones - the most common ones are: transversals, oblique, spirals, comminutes and green branches (LOVELL, 1997). Understanding the types of fractures is of great relevance to allow identifying the nature of trauma causes. It helps finding, among other information, what traumas will later result from accidental causes or from violent actions.

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It is important to highlight the chronological analysis of bone trauma in one given individual due to differences related to the moment it takes place. Mays (1998) introduced fractures classified based on the following features: ante-mortem (before death), peri-mortem (close to the moment of death) and post-mortem (after death), since, from the body point of view, there are changes in characteristics.

Ante-mortem injuries have healing aspects, bone resorption and remodeling, and this profile indicates that the trauma was not the cause of death. According to Adams (1980), if conditions are favorable, fracture consolidation starts as soon as there is a rupture, the reparation process can change from individual to individual, depending on the locations of the injury and on its type. Healing signs in fractures before the moment of death can vary, from the rise of a primary bone callus at the beginning of the reconstitution of the membrane that coats the bone, to the further formation of a definitive bone callus (LESSA, 1999). Figure 7 presents skulls with evidence of peri-mortem trauma associated with blows of short-distance weapons, and it points towards man-to-man conflicts in a Maya group between the "Middle Preclassic (600–300 BC) to the Postclassic (AD 1050–1542)" (SERAFIN *et al.*, 2014).

Figure 7: Peri-mortem trauma in frontal bones in a Maya group Northwest Yucatan province.
Source: Serafin *et al.* (2014).

Peri-mortem trauma injuries are harder to be diagnosed because they are closely linked to cause of death and because they do not show healing signs. Because they happen at the moment of death, they are prior to the hardening, and it allows the bone to react in a very specific way: "cut surfaces tend to be sharp and to present a torn and irregular appearance, there can be, depending on bone type and on the

aggressor object, bone bending and fractures tending to be more oblique" (CUNHA, PINHEIRO, 2007, p. 228, our translation). Figure 8 depicts two bones from a female individual from the Atacama, it allows seeing the trajectory of the projectile, which crosses the sternum and got stuck in the seventh thoracic vertebra – there was no sign of bone remodeling; therefore, it can be featured as peri-mortem trauma injury (LESSA, 2014).

Bone reconstitution after death changes because of liquid, flexibility and elasticity loss, which makes it friable. By analyzing post-mortem trauma injuries, one does not find bone regeneration responses. Dehydrated bones hardly get malleable and, although they present sharp surface, such as the peri-mortem type, they have regular contour on the edges. Based on the archaeological context, this information becomes relevant because it differentiates changes that have happened through taphonomy factors, such as bioturbations or even sediment accommodation. There are no answers in this study, except for the need of differentiating injuries from moments prior to death or close to the moment of death.

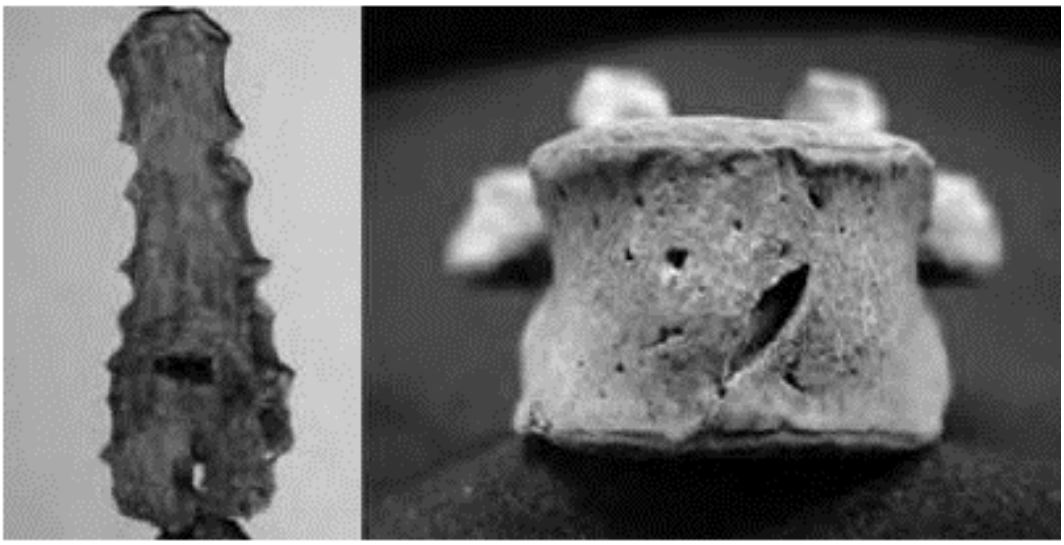

Figure 8: Female individual with perforation in the sternum and accommodation of the lytic tip in the seventh thoracic vertebra.
Source: A Lessa; archive: Instituto de Investigaciones Arqueológicas and Museu R. P. Gustavo Le Paige S. J., San Pedro de Atacama. Source (LESSA, 2014).

According to Lessa (2004), the understanding about violence can change depending on the social and temporal context of a given group. According to her, "from the paleoepidemiological viewpoint, they are only seen as trauma caused by intentional actions related to physical aggression episodes" (LESSA, 2004, p. 281). On the other hand, from the epidemiological viewpoint, they would also be accounted as accidents and accidental death. Martin and Harrod (2015) state that

Many researchers use a variety of terms interchangeably such as violence, conflict, and aggression. Our own personal preference is to avoid using the term aggression for humans because it is often used in animal studies and does not imply a connection to culture or to meaning. This is an important distinction because aggression does not always translate into violent behavior. Definitions of violence often imply intentionality, motivation, and

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culturally defined meaning. What is considered violence in one culture may not be in others. Violence is often socially sanctioned and organized but aggression need not be. Violence can be individual or collective but aggression more often is analyzed at the individual level (MARTIN; HARROD, 2015, p. 116).

Yet, according to Lessa (2004), the adoption of the term violence, within this context, is "[…] based on concepts formulated on the theoretical framework of social and human sciences, and the topic does not scape a subjectivity that gives room for certain inquires that are open to reflection" (LESSA, 2004, p. 282) (our translation); therefore, the time of violence was used for the herein addressed context. From the bio-anthropological viewpoint, violence must be analyzed in association with three aspects: the analysis of remaining bones, the context in which the material is inserted in – which is associated with the likely funerary elements - and ethnographic data (MARTIN, HARROD, 2015).

Bone traumas mostly evidencing association with violence concern fractures featuring skull depression, fracture on the face, nasal bone fracture, transversal fracture in the ulna ("parry"[4] fractures) and the presence of projectile tips stuck in the bone (LESSA, 2014; SERAFIN, *et al*., 2014; LOVELL, 1997). Moreover, "although not common in archaeological records, trauma caused by beheading, scalp, cannibalism and dismemberment are also considered signs of violence" (LESSA, 2004, p. 81, our translation).

It is important to contextualize other aspects in cases one finds the hypothesis of warfare in the prehistoric period. Either the high frequency of skeletons in a single grave or lack of barred young and adult men can be understood as signs of this type of conflict (LESSA, 2004; FARIAS; GOMES, 2008).

Studies that have explored the interpretation of osteological data in Brazil and that have evidenced conflicts in the pre-history, although found in the literature, they are very few (chart 1). Publications remain almost limited to coastal populations, except for some attempts to outspread this type of study (SANTANA, CARVALHO, 2013; SANTANA, 2013), but, yet, these studies are concentrated in sites in low São Francisco River in Xingó region, between Sergipe and Alagoas states.

Chart 01: Studies about acute traumas in archaeological records in the Brazilian pre-historic period

Sites and States	Description and interpretation	Reference
Sambaqui de Cabeçuda (Santa Catarina) and Sambaqui Arapuan (Rio de Janeiro)	Three individual of the male sex with skull injuries were found.	Lessa and Medeiros (2001).
	There were injuries associated with violence	
Praia da Tapera Site (Santa Catarina)	Five men and one woman presented injuries. Preliminary analyses indicate intergroup conflict	Lessa (2005-2006);

continua...

Armação do Sul Site (Santa Catarina). Fishing-gathering group without ceramic	One male individual. Interpersonal Violence.	Lessa and Scherer (2008)
Justino – Xingó Site (Sergipe)	Skull fracture (parietal bone) of an individual of the male sex and remodeled depression in frontal bone in individual of male sex. Interpersonal violence.	Santana (2013; 2010); Santana and Carvalho (2013); Carvalho and Queiroz (2008);

With respect to Justino site, the presence of trauma in the parietal bone (Figures 10 and 12) – total length of 6.85cm and width of 2.16cm – and the presence of bone fragment consolidated inside the skullcap (SANTANA, 2010) feature, either the perception of a violent action (given the nature of the trauma) or peri-mortem fracture. This finding points out that this individual lived with this damage for some time, until the moment of death, and it brings up the understanding about care provided to its recovery. The same had happened to the second individual, who presents one frontal bone remodeling, which indicates that it had lived even after the trauma (Figure 11).

Despite the low frequency of bone pieces presenting evidence of episodes featured as violent, the presence of bones with anti- and peri-mortem injuries help identifying acts of violence among groups of pre-colonial Brazil. One must also take into account these injuries in association with the locations presenting the clearest indications of violence, as already mentioned. Lessa and Medeiros (2001) also point out that the little expressive number of sites subjected to paleopathological analysis and material conservation state are factors that leave gaps for further research. Further studies must aim at enhancing the understading about the inter- and intra-group social tension among these groups – this statement remains valid, as shown in chart 1.

Besides evidences in bones, there are other particularities that can be associated with the way bodies were buried (beheading, and skulls buried in separate), and artefacts inserted in the funerary context, which can be used to help better interpreting these peoples and the behavior of these groups, as well as to help diagnosing and revealing part of the local or regional dynamics that tells the particular and general stories of a given period-of-time.

Figure 9: lumbar vertebra (4th) of an individual of the male sex with a projectile tip stuck in it, it was found in Armação do Sul site (SC).
Source: Lessa and Scherer (2008).

Figure 10: Skull of an individual of the male sex with trauma injury in the right parietal bone
Source: Archive of Museu de Arqueologia de Xingó (2006).

Figure 11: Skull of an individual of the male sex with a remodeled depression in the frontal bone.
Source: Archive of Museu de Arqueologia de Xingó (2006).

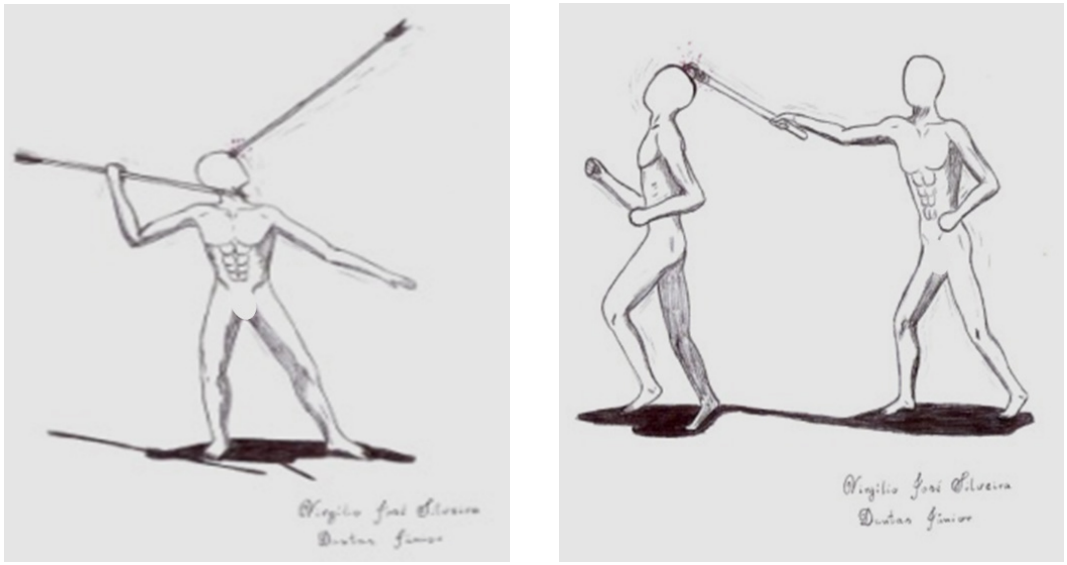

Figure 12: Illustration simulating attack to individuals in Justine site, trauma in the right parietal bone and in the frontal bone.
Source: Archive LABIARQ/UFS. Drawing: Virgílio J. S. D. Júnior, 2013.

FINAL CONSIDERATIONS

Walter Benjamin proposed that, "Die mythische Gewalt ist Blutgewalt über das bloße Leben um ihrer selbst, die göttliche reine Gewalt über alles Leben um des Lebendigen willen" [Mythic violence is bloody violence over the bare life for its own sake; divine power is pure power over all life for the sake of the living] (BENJAMIN, 1920-1921, n/p., our translation).

We chose to translate the German word, *Gewalt,* as violence and power - the first meaning was the negative and discretionary one, the second meaning was the positive one - to represent justice and living together. Gewalt, in the sense of power for many or for the poor means potential, possibility, rather than a fact. Fact, as stated by Benjamin himself, is violence as document of barbarism: "Es ist niemals ein Dokument der Kultur, ohne zugleich ein solches der Barbarei zu sein" [There is no document of human culture which is not at the same time a document of barbarism (our translation)] (BENJAMIN, 1920-1921, n/p).

Actually, different from the romantic views of the 19th century, which were mainly consolidated by the literature by José de Alencar - just to give an example -, a quick analysis allows observing that indigenous societies, since the pre-colonial period, were at permanent warfare and conflict state, either because they were following a logic inherent to the native culture, reflected on "us" and on the "others", as shown by Viveiros de Castro (2002), or due to the geographic expansion and to the conquest of new ecological niches, such as the case of the Guarani expansion assessed by Brochado (1984), or to other reasons that can also concern women's kidnapping, as the case of Amazonian Parakanã Indians (FAUSTO, 2001)[5]. This omnipresent warfare state crosses the colonial period, and structurally changed due to the arrival of the Europeans to the American territory. Monteiro (2000, p. 35) states that "war was rooted in the logic of pre-colonial relationships and rivalry, and now it is clear that war actions were subjected to pressure and demands of the rising colonialism" (our translation).

As well demonstrated by Milanez and Santos (2021), the colonial advance on the Amerindian lands of what we now call Brazil denoted other types of conflicts, within a colonialist logic of conquest of territory and purge of land, culture and human beings originating in the territory, where these populations suffered an unprecedented genocide, without, however, failing to create forms of resistance. However, in global terms, we cannot ignore Pinker's considerations (2013), for which humanity as a whole, from the emergence of state apparatuses (which began to inhibit and punish acts of violence), trade (requiring peaceful periods for transactions), feminism (women often resort to means other than violence to solve problems), and the advancement of practices of empathy and cooperation.

The present study was a brief exercise of reflection about the state of art and possibilities of the topic "wars, conflicts and violence in the Brazilian archaeology"; it used examples to show that this is a fertile field yet to be explored. It is also essential to highlight the need of multidisciplinary studies gathering biological, historical and ethnographic data to assess material culture, which is the greatest target of archaeology. In paradox, while one observes its potential, it is also possible noticing the scarcity of studies based on these approaches, and it opens room for new research in this intriguing study field.

Abstract: *the goal of the present article is to introduce and discuss some aspects concerning the material evidence of warfare and conflict in Brazilian prehistory. It also aims at framing, although partially, how violent acts can be observed in the material culture by upgrading the topic to its state of art and by proposing new perspectives for the herein addressed topic and time. Option was made for applying the transdisciplinary methodology which, besides archaeology, also works with historical and anthropological data to reason about the Brazilian pre-colonial past and registers of conflicts found in records of the past left by indigenous peoples.*

Keywords: *Warfare Archaeology. Brazilian Prehistory. Material Culture*.

Notes

1 In this article, we conceptualize warfare in a broad sense, denoting from small disputes to broader conflicts, such as long-range wars. It is, for us, the most adequate term to deal with the variety of conflicts that occurred in prehistory.
2 This term is herein adopted based on justifications presented by Madu Gaspar (2003, p. 10-11).
3 According to the description by FERNANDES (1970, p. 116-117), with respect to the Tupimambá: "the contenders got to mimic the enemies to disorient and disorganize them (…) they got to roar amazingly loud, and it would come along sounds from their music instruments, which produced great shock" (our translation).
4 Parry fractures are the ones located in the middle and distal third region of the ulna and in some cases of the radium, they need to be analyzed carefully and based on the context, because their etiology may have been originated either from the occurrence of a violent action or from accidental actions. They are "attributed to the elevation of the forearm in defense from a blow, and wounds caused by the tip of the projectile" (LESSA, 2014).
5 For a meticulous statistical study of violence in global prehistory, especially in relation to the so-called "Stone Age", see Keeley (1996).

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