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Abstract

This text will consider some aspects of Ticuna people's cosmivision as well as present a humble sketch of their understanding of celestial phenomena. The Ticuna word *e'ta* refers to celestial bodies related to several aspects of indigenous thinking as expressed in ritual songs and speeches about *Worecü*, a Ticuna word meaning the girl whom initiation is being performed. The brightest celestial bodies among them are known by the Ticuna as the *Worecü e'ta* or the maiden stars. From the annual movements of the Ticuna constellations, there corresponds an interpretation of the seasonality of the rainfalls. The Ticuna establish their subsistence strategies according to their knowledge of the relationships between celestial and earthly environment phenomena.

Introduction

The Ticuna have inhabited the upper Solimões river region for the past 2,000 years. They currently occupy a territory in which the borders of three countries – Brazil, Colombia, and Peru – converge. The Ticuna also perceive the different national ethnicities of people residing in these three countries. The Ticuna population is split

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among these three countries, with an estimated 36,000 in Brazil, 10,000 in Colombia, and 5,000–6,000 in Peru. Together, they constitute the Amazonian region's largest indigenous population.

According to Ticuna cosmogony, their world began with their forefathers – the Magüta people – who lived in darkness because a giant laugh (Megatherium) held the skies suspended over a mythic tree called *wone* (*Ceiba pentandra* (L.) Gaertn). The cultural hero, Yoi, launched a fire ant into the laugh's eyes, thus releasing the skies over the *wone* tree. The weight of the skies caused the *wone* tree's heart to turn into liquid, forming the Amazon River. His twin brother Ipi's flesh was converted into fish, and Yoi caught these fish in the mythical *Eware igarapé* (subsidiary canal) and released them onto land, which caused the fish to be transformed into Ticuna.

At this phase, the Sun and the Moon lived together, still in darkness. The Mother of the Sun discovered that she was pregnant, but nobody knew by whom. In order to discover the father, her grandmother said: "Today you'll go and press the juice out of the genipap fruit and place it beside your hammock. Tonight, he will come and you must then find a way to stick your hand into the genipap juice and please him. Just touch his face, which will enable you to discover who this person is". So the girl obeyed her grandmother when the Moon lay down with her. The Moon, in those times, walked upon the earth. During his walk, he realized that genipap juice stained his face. He ran into the jungle to clean his face. He tried to clean himself with all the white leaves that existed in the forest: he cleaned off the genipap juice and threw the leaves away. The leaves turned into black birds called *Coró Cachimbo* (*Herpetotheres cachinnans*). Even so, the blackness of the genipap painting kept getting bigger and his face darker. This ashamed him and made him want to leave. He thus became the Moon in the sky, because of his shame. Sun and Moon were no longer able to meet, since they lived in different realms of time – day and night. This is why the Moon's face appears in the nightly sky, stained because of the genipap juice.

The Sons of the Moon became moving stars that roughly correspond to the celestial bodies identified in modern academic astronomy as planets. The promotion of the Ticuna pubescent girls' (named by them *Worecü*) ritual depends on its proximity to the moon and the constellation of the Caiman's Jaw (located in the sky area of Taurus). Then these brightly celestial bodies are called "*Worecü* or *Woramaciüri* stars" – related to several aspects of indigenous mythology as expressed in ritual songs and speeches about *Worecü*, a Ticuna word meaning the girl for whom the initiation is being performed. The Ticuna call them *Pacü* or *Worecü* stars because their cosmogony dictates that the initiation ritual should happen whenever these stars become visible.

Ethnography of Celestial and Environmental Phenomena

In its morphology, enunciation in songs and ritual discourse prescribe a socially defined order that is justified within an ideological framework (Broda 1982) in which ethnicity is a vehicle of Ticuna expression in both national and international

languages that cross over indigenous boundaries of civilization. An anthropology of Ticuna knowledge depends on analyzing ideological systems of how they understand the relations between sky and earth social relations, with the goal contributing to astronomy in culture, since living territorially settled peoples are complementary to a comprehension of iconographic documents of ancient indigenous cultures. Following McCluskey (2011), astronomy in culture breaks the positivist conception of progress in academic science since this approach takes into consideration the coexistence of different scientific paradigms.

The Ticuna live in villages along the Amazonas-Solimões tributary *igarapés* (or headwaters). Their daily life revolves around the cultivation calendar of different agricultural goods, especially manioc, which is used to produce the flour that the Ticuna sell in the region's principal municipal markets. They are also fishers, hunters, and gatherers of forest products. The women make hammocks, bags, and other objects using plant fibers, and the men paint bark cloth and also fabricate arrows, paddles, and canoes.

The maiden's celebration is an important weather and fertility ritual for the social reproduction of Ticuna society and updating and recollecting the memory of the elders. The hair of the young Ticuna woman is ripped off, symbolizing the reproduction of the group's social life. The Ticuna believe that the celebration will bring success in subsistence activities such as hunting, agriculture, and fishing. There is an intrinsic relation between these ritual activities and the Ticuna's representations of the environment in which they live. According to anthropological analysis, ritual is a social-action system that articulates cosmic order and social organization.

The Ticuna clans are grouped in exogamic moieties. Even though there is no specific denomination for each moiety, the first moiety includes those clans classified as "birds", "feathers", "feathered", or "of the air". The other moiety contains those clans classified as "not feathered", "without feathers", also classified as "skin", "shell" or "fur" or even "of the earth". Nimuendajú (1952) observed that these moieties correspond to the Ticuna division of the universe into a "western moiety" and an "eastern moiety", respectively. The complementary relation between the moieties expresses a group consolidation mechanism. In the majority of celebrations, maidens and children involved generally belong to both moieties; both types of traditional instruments are used. Nimuendajú (1952) noted that after being painted, "in the old days, after the celebration, the maiden [was] still washed with her face turned to the 'appropriate cardinal point'", according to which moiety she belonged to (eastern or western). Nimuendajú indicated that the maiden was washed with a *timbó* solution at an auspicious spot along the *igarapé*. "It was hoped that this would bring a great catch of fish". This indicates that the ritual is related to the environment, the group's material fate, and its cosmogony.

The Ticuna constellations are related to narrations referencing the ascension and fall of *Wücutcha* (a heavenly beast related to the Jaguar Clan), *Coyatchicüra* (Caiman's Jaw), and *Baweta* (the Turtle Collective) but also to the Anteater's fight with the Jaguar and the Way of the Tapir, that is eventually transformed into a manatee who swims across the skies leaving behind its foam trace. The seven

boys killed the Caiman and took the leg of their brother and its jaw and rose up to the skies with it. When they finished preparing the vines, they launched arrows into the sky toward the moon. The Moon gathered each arrow, and the arrows hit each other successively. They united at the points of the arrow tips used to kill the Caiman, which, after falling back to the earth, caused the boys to turn into termites. They went up to the sky again, mounted on the turtle *Baweta*'s shell together with *Wüçücha*'s Leg and the Caiman's Jaw.

Comparing the *Ticuna* constellations with conventional astronomical constellations, the form of *Baweta* (the Turtle Collective) is associated with the stars of the Pleiades and Perseus. Its eyes are the feet of Perseus (\omicron Per (Atik) and ζ Per). The "V" form of the Hyades, which Western astronomy relates to Taurus, is called *Coyatchicüra* (Caiman's Jaw). In a *Ticuna* drawing, the Caiman's right rear paw corresponds to ϵ , η , and ζ Per. The tail is \omicron and ζ Per. *Wüçücha*'s Leg is related to the stars that conventional astronomy groups as Orion. The toes of his feet are Orion's Belt and the bend in the leg is α , γ , β , and ϵ Ori. The *Ticuna* Indians Pedro Inácio Pinheiro and Luís Angel Ramos draw the corresponding *Ticuna* constellations. The calculations were established based upon Lat. 2 °S and Long. 70 °W.

Baweta appears in the eastern sky at nightfall toward the end of November, in what would correspond to the Pleiades. *Wüçücha*'s Leg corresponds to Orion, and it begins to disappear from the western sky beginning on the 20th of May at nightfall. Some days later, the Caiman's Jaw, corresponding to Taurus, also disappears to the west.

Another example of *Ticuna* knowledge about the movement of celestial bodies is the Anteater's (*Tchatü*) fight with the Jaguar (*Ai*) to see who would lose and who would win. The recording of this myth and the identification of the Jaguar's eyes was undertaken by Curt Nimuendajú (1952, p. 143). The Anteater fell upon the Jaguar and the Jaguar fell atop the Anteater, the Anteater wounds the Jaguar in the heart. The Nhambus went to see the battle between the two. They heard noise and screaming. Others who also followed the same path went to watch the fight between the Jaguar and the Anteater. There also existed at that time another path that ran to a lake. A fisherman came by on the prow of his canoe and another was going to harpoon something in front of him. Along this path, one also finds the Southern Cross. On the trunk of that Cross is a dark way that is called the Manatee. When the Manatee passes the foot of the Cross, the Cross falls.

Anteater's eyes are in β TrA, his tail in Corona Australis, and his body in the constellations of Norma and Ara. The Jaguar's right paw is in α (Antares), σ , and τ Sco; his eyes are in ϵ , e , and μ Sco; and his left paw is in γ (Shaula), v , ι , and θ Sco. According to the *Ticuna*, this was the result of the rape-murder of a pregnant woman. The victim's relatives killed the beast associated with the Jaguar Clan in order to prevent the eclipse. *Tchatü*'s leaving the sky to the west at nightfall at the end of November coincides with the reappearance of *Wüçücha*'s Leg to the east, representing the beginning of the rainy season. In the Amazon, the rainy season (winter) is from December to February, and the "summer" season from Mars to October. It continues raining during the "summer" season. However, it rains more

during the “winter”. When the sun shines continually during the rainy season, one can say that it is “summer”.

According to the explanations found in the headwaters or *igarapés*, the influence of seasonality upon Ticuna subsistence strategies is more marked along the Solimões given than in the headwaters of the *igarapés*, since plenty of plants and fruits are available all year long. The same occurs with the fishing on environmental sanctuaries, where residents are able to supply themselves abundantly with fish all year long. On the Solimões, however, when the water level of the river rises, a certain degree of flexibility exists in the adaptation of the agricultural and extractive calendar to the rainy season when fishing and hunting are not productive and the dry season when there is greater abundance, but when the difficulties involved in navigation and transport grow as the water level along the *igarapés* linking the rivers drops. Traditional culture is not prepared, however, for unforeseen alterations in the rainy season, as has been the case almost biennially in the last 20 years.

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