

DOI: <https://doi.org/10.24215/26840162e002>

# Notes on Cyclical Temporality and Two Artefacts among the Toba of Western Formosa and the Pilagá. The Day and the Yearly Cycle

---

Gómez, Cecilia P.

[ceciliagomez@uca.edu.ar](mailto:ceciliagomez@uca.edu.ar); [gomezcp@gmail.com](mailto:gomezcp@gmail.com)

Instituto de Investigaciones de la Facultad de Ciencias Sociales. Universidad Católica Argentina (IICS-UCA/CONICET).

Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)

Gómez Cecilia P., 2024 "Notes on Cyclical Temporality and Two Artefacts among the Toba of Western Formosa and the Pilagá. The Day and the Yearly Cycle". *Cosmovisiones/Cosmovisões* 5 (1): 43-52.

DOI: <https://doi.org/10.24215/26840162e002>

Recibido: 24/04/2023, aceptado: 11/12/2023.

Este artículo se encuentra bajo la [Licencia Creative Commons de Atribución-NoComercial-CompartirIgual 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/).



## Resumen

En el presente trabajo indagaremos sobre la lectura que hacen los tobas del oeste formoseño y los pilagá del Bañado La Estrella sobre dos lapsos temporales cíclicos específicos que se relacionan, de un modo u otro, al espacio celeste. Entre los tobas del oeste formoseño remitiremos al transcurso del día, en tanto que entre los pilagá del bañado la Estrella nos abocaremos a trabajar el ciclo anual. En esta ocasión analizaremos estos períodos temporales atendiendo a las relaciones que se establecen con la cultura material, tanto aquella heredada y relacionada a “los estudios de los antiguos”, como aquellos elementos de la cultura material tomados o impuestos por la sociedad occidental. Por un lado, trabajaremos sobre dos asterismos pilagá que serán tomados en conjunto, *Dapichi'*, que mayormente es asociado a las Pléyades, y *Yagayna'di*, que es trazado en lo que se conoce como Cinturón de Orión. Estos dos asterismos son representados por un juego de hilo progresante, esto último significa que se comienza con la ejecución de un motivo y se forma otro sin desarmar el primero. Trabajaremos sobre el juego de hilo asociado al nombrado par de asterismos, porque representa dos objetos celestes cuyos cambios y movimientos cíclicos aparentes se asocian con el devenir de un importante ciclo temporal que ritmaba la vida de los pilagá: el ciclo anual. A su vez, este conocimiento forma parte de aquellos saberes transmitidos por los más ancianos y refiere a una de las pocas formas que tenían los “antiguos” de representar asterismos. Por otro lado, indagaremos sobre otra vinculación de un objeto celeste con la materialidad: la relación que se establece entre el sol y el reloj entre los tobas del oeste formoseño, utilizando para el análisis un elemento claramente relacionado a la sociedad envolvente y al que los tobas aprendieron a adaptarse. Sin embargo, tomaron al reloj en sus propios términos. Por lo tanto, parte del conocimiento legado por los más ancianos: “los estudios de los antiguos” puede leerse en la forma que leen y entienden al reloj, sobre todo el reloj analógico.

Tomando en cuenta lo investigado en ambos grupos indígenas, nuestros objetivos últimos son, por un lado, ver cómo las lecturas celestes que remiten al transcurso temporal se relacionan con la materialidad y cómo esta relación va variando y actualizándose según la situación social pero sigue remitiendo a saberes ligados a su forma de entender los ciclos diurnos y anuales.

**Palabras clave:** tobas, pilagás, ciclos temporales, reloj, juegos de hilo.

## Abstract

The purpose of this work is to look into the reading that the Toba of Western Formosa and the Pilagá of Bañado La Estrella make of two specific cyclical periods of time somehow related to the celestial space. In the case of the Toba of western Formosa, we will focus on the course of the day, while for the Pilagá of Bañado La Estrella we will analyse the yearly cycle. On this occasion, we seek to examine these time cycles considering the links established with the material culture; both the inherited culture related to “the studies of the ancients” and the material culture taken from or imposed by western society. On the one hand, we will work on two Pilagá asterisms analysed jointly - *Dapichi*, which is mostly associated with the Pleiades, and *Yagayna'di*, outlined in what is known as the Belt of Orion. The two asterisms are represented by a progressive string game, i.e. it starts with the creation of a figure followed by another designed without undoing the former. We will study the string game linked to the above asterisms because it represents two celestial objects whose apparent cyclical moves and changes are related to the evolution of a significant time cycle that paced the life of the Pilagá; the yearly cycle. Additionally, this knowledge is part of the lore passed on by the elders and refers to one of the few ways the “ancients” had of representing asterisms. On the other hand, we will delve into another relation between a celestial object and materiality; the relation between the sun and the watch among the Toba of western Formosa. To this end, we will use an element clearly connected with the surrounding society and to which the Toba have become adapted. However, they have adopted the watch on their own terms. Thus, part of the knowledge transmitted by the elders, “the studies of the ancients”, may be read in the way they read and understand the watch, especially the analogue watch.

Taking into account what we have investigated in both indigenous groups, our final objectives are, first, to see how the celestial readings related to the passing of time are linked to materiality, and second, how this relationship keeps changing and updating depending on the social situation, albeit it continues to refer to knowledge associated with their way of understanding the day and yearly cycles.

**Keywords:** Toba, Pilagá, time cycles, watch, string games.

## Introduction

The purpose of this work is to look into the reading that the Toba of western Formosa and the Pilagá of Bañado La Estrella make of two cyclical periods of time, while also considering two related artefacts. We will therefore analyse the analogue watch and a progressive string figure<sup>1</sup>.

In the first case, we will examine how the mechanical watch is immediately connected with the sun or *Ahéwa*, which in turn will lead us to mention one of the cycles that the western Toba associate it with; the course of the day. In the second case, we will refer to the Pilagá of Bañado La Estrella which represented the “appearance” of two key asterisms that marked the start of the Pilagá annual cycle employing a progressive string game<sup>2</sup>.

## The Course of the Day, the Sun, and the Watch among the Toba of Western Formosa

In the drawings made by children of this Chaco area at the beginning of the 20th century, this assimilation between sun and watch is already evident, they draw clocks but named them: “Sun”. In addition, this

also has an influence on the name given to the watch in their native language - *ahéwa likiʔi*, which literally means image of the sun (Cf. Gómez and Carpio 2018). They currently explain that, through the trajectory of the sun or *Ahéwa* across the sky, they are aware of the course of the day, of each of the different parts they divide the day into, and that each new day is counted at dawn. Although they regularly use watches now, and even mobile phones, when they refer to a time of the day, they generally indicate the sun’s present location with the extended arm pointing to the sky. This method exists together with others related, for instance, to the behaviour of a variety of animals or to the apparent movement of some other asterisms or typical features of the night sky such as the movement of the Milky Way. In this way they used to refer and still refer to the times of the day.

When asking about how they divide the day or *nolóʔ*, some collaborators have mentioned the use of the term *nálañi* when it is very early, still dark, before morning. Mid-day is known as *nolóʔ layñí*, the afternoon as *háwit*, and the evening as *píyaq*, while midnight is referred to as *píyaq lawéland* also *píyaq layñí*. When talking about a specific time of the day, the most direct indicator was the arm up high pointing to the sky to indicate the sun’s position at that moment. At present, together with the watch and mobile phone, this is the most common way of indicating approximate times or moments. To these moments they currently add the approximate time, for instance

---

<sup>1</sup> The information and data referred to in this article are also associated with ethnographic fieldwork conducted among both indigenous groups.

<sup>2</sup> A string figure is progressive when the creation of a figure is started without undoing the previous one.

*néteta* could be between nine and eleven. The time marked as *noló? layñí* is one of the easiest to identify as it occurs when the sun is “right in the middle”, and the shadow cast is described as “very straight”. And they point the arm to the sky as if the hand of a watch indicated 12 o’clock. Given this and apart from the indicators related to animals and other celestial objects, in theory, it does not seem very clear how to mark the night period called *píyaq lawél* (midnight) or *píyaq layñí* (night belly or centre), and especially the reason for its name. However, if we pay attention to how the earth and the sky were described according to “the study of the ancients”, the terms seem to be more evident. When they depicted the earth, the sky, and the trajectory of certain celestial objects in a general way, they explained that underneath the earth inhabited by men there is another earth, and that when it is dark here the sun illuminates the earth below. Thus one of the elders stated: “the sun illuminates the earth that is underneath where we live, and when this happens it is dark here.” Likewise, another Toba man, who spoke Spanish very fluently, tried to explain the movement of the sun in the sky as follows: “One should imagine a circumference across the sky”. While saying this, he pointed his arm to the sky, going from the eastern horizon to the western horizon, and explained that in this way one can understand how at midday the sun is right in the middle of this imaginary circumference. “Right up there, that is *noló? layñí* [...]. *Noló? layñí*. I mean, like this [he points with his extended arm to the sky following his body axis] [...] Straight up. Like this, you draw a circle and right in the middle is the sun”. Based on this description, it

is not hard to imagine that, when the sun follows the same trajectory underneath the earth, it does so in the same way than above, and when located in the middle but underneath, *píyaq layñí* or *píyaq lawél* occurs on the surface of the earth (Gómez and Carpio 2018: 164-165). In fact, as we checked the movements of the sun with this man, he explained that, when it was *noló? layñí*, it did not mean there was no shadow but that the shadow was on the right, and he insisted that happened because the sun was “straight up”. In order to complete his description, he added: “like when we say at night *píyaq, píyaq layñí*. *Píyaq layñí* means twelve o’clock at night”. In this context, his words lead us to think that he follows the same logic of the elders. This construction, rather than seeking accuracy when indicating midnight, is intended to establish a period of time at night, which just like *noló? layñí* roughly coincides with the time pointed by the *criollos*, while keeping the order or worldview inherited from the elders. The ideas expressed are consistent with their worldview because they specifically refer to the trajectory of the sun underneath the earth when it is night here, thus representing a kind of game of mirrors between the movements of the sun above and below the earth. However, it should be noted that, apart from the use of the watch or mobile phone, the practical way of guiding oneself in time and space at night is more related to the sounds of certain animals, and to the movements of the Moon, the Milky Way, and some asterisms.

The adoption of the analogue watch is connected with the first contacts with “the whites”. Naturally, its subsequent use is also linked to the need of observing the

timetables imposed by the *criollos*. Additionally, being aware of the time of the day as indicated by the watches is related to wage work, going to work, resting, and to the arrival and settlement of the Anglican missionaries. The missionaries of the South American Missionary Society founded missions among both indigenous groups during the first decades of the 20th century (Cf. Córdoba 2020). For both men and women, a different way of marking the times of the day was imposed. However, this encouraged a convergence or an attempt to combine the way of pacing daily life as transmitted by their elders with the surrounding society's strict way of dividing the day.

The various positions indicated by the extended arm pointing to the sky refer to the place the sun has or will have, which in turn is linked to the movement of the watch handles. This would in part explain the Toba name of *ahéwa likí?i* (image of the sun). Furthermore, the arc-like path the sun follows across the sky from a point on the eastern horizon to some other point in the western horizon, according to the Toba's view, is replicated when passing below the earth in its night trajectory. Bearing this in mind, the name given by the Toba to the watch seems rather evident; *ahéwa likí?i* (lit. image of the sun).

The Toba have adopted the watch by interpreting it on their own terms, according to what they describe as “the studies of the elders”. Apart from the tasks and situations linked to or imposed by the surrounding society, the use given to the watch was mostly related to knowing if night was approaching to get out of the forest. It is not convenient to be caught by surprise in the forest or by the banks of the river Pilcomayo at night.

## A string Game and its Relation with the Annual Cycle among the Pilagá of Bañado La Estrella

In the centre of the province of Formosa, near Las Lomitas and close to Bañado La Estrella, the Pilagá of Gran Chaco reckon the duration of time cycles through a series of signals, some of which may also be observed in the sky. As already examined

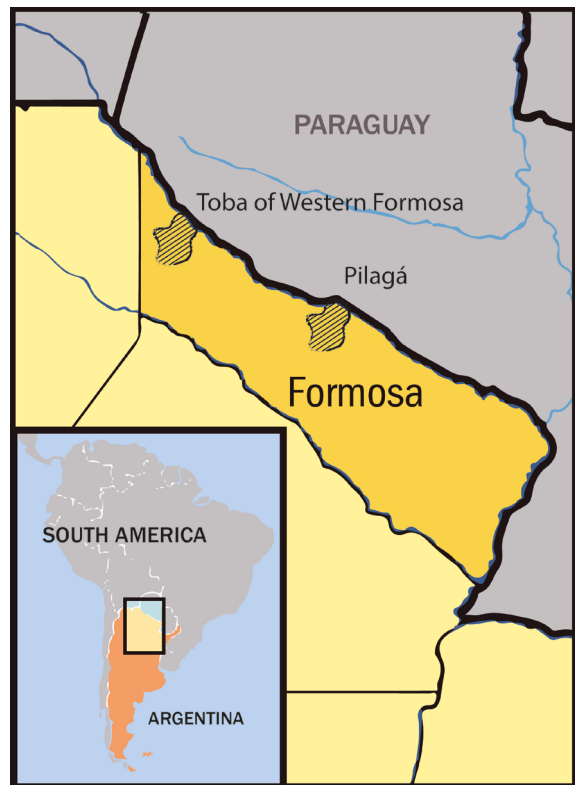


Figure 1: Approximate location of the Tobas of Western Formosa and Pilagá groups in the province of Formosa (Argentina).



(Gómez and Braunstein 2020), we can see that these celestial objects and the periods they calculate with them have been traditionally represented and animated employing string games, where some figures are designed<sup>3</sup>.

At present, the Pilagá use the Gregorian calendar to indicate the start and the end of the year. The civil calendar marks their current life. The pace is now imposed by school or by other official institutions. In addition, as happens among the *criollos*, the beginning of the year is now celebrated after Christmas. In the past, however, it was the various signals of the environment (including the “movement” of the sky and some celestial objects and asterisms) that allowed them to refer to a certain moment of cyclical renovation, which in turn helped in the organisation of their travels around the territory and in their forest activities.

The appearance of *Dapichi'* (Pleiades) and *Yagáinadí* (Belt of Orion) was associated with the start of the annual cycle. Additionally, these asterisms signalled the course and evolution of the cycle. The Pilagá divide and name the annual cycle in a similar way to the Toba of western Formosa, and the seasonal period highlighted by them is *nakabiaGá*, taking place roughly between June and August. It is a period characterised by frost (Filipov, 1996, pp. 39-40). Also, in *naqabiaGá* it is believed that *Dapichi'* (Pleiades) appears, soon followed by *Yagayna'di* (Belt of Orion), an asterism that has a close relationship with sowing (Reboledo 2022). The performance of this activity during the period associated with cold and frost coincides with the function of avoiding damage to the tender buds that

will start to emerge during the forthcoming period. The traditional significance of the *Dapichi'* asterism is evident since, in the past, sowers would pray to him to obtain a good harvest. This rite took place when cold began to be felt. The seeds were presented to *Dapichi'*, and the gesture was accompanied by some words so that seeds should sprout well. The signals provided by the change of weather, together with the appearance of *Dapichi'* in the eastern horizon, followed by *Yarayna'di*, marked the start of the coldest days of the year, and gave a rough forecast of the frost that might damage plants. The sowing was for the domestic group's consumption and occupies specific moments along the Pilagá annual cycle. As seen, it relates to a worldview where the annual cycle is announced by the heliacal rising of the asterism known as *Dapichi'* (Pleiades); followed by the heliacal appearance of *Yagayna'di* (Belt of Orion) in ensuing mornings. The creation of a game with the name of the first asterism (*Dapichi'*) and its transformation in the other one (*Yagayna'di*) evidences its true meaning in connection with the similar and successive appearance of the asterisms (See Figures 2 & 3).

Apart from the reference to the start of the annual cycle, it should be noted that *Dapichi'* announces the cold, and the rite to obtain a good harvest is addressed precisely to him. Additionally, the subsequent appearance of *Yagayna'di* indicates increasing cold temperatures that end with frost. In sum, the process of creating figures shows the connection between the cold, frost, sowing, and the following successful harvest (Gómez and Braunstein 2020). Thus, the start of the

<sup>3</sup> For more information on string games in the Chaco area Cf. Braunstein 1994, 1996, 2017.

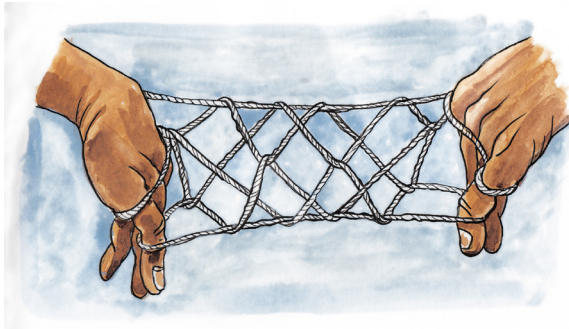


Figure 2: *Dapichi'* (Pleiades)



Figure 3: *Yagayna'di* (Belt of Orion)

Figures 2 & 3: Games surveyed by José Braunstein on June 7, 1992. Figures executed by Zecagaladí (Juan Zárate)<sup>4</sup>. Both illustrations of string games were made by Diego Alterleib

annual cycle as understood by the elders seems to be the main topic mentioned in this string figure.

However, as a result of the colonisation of their territory during the last century, the Pilagá have made a huge effort to become adapted to the hegemonic context of the national society. Therefore, for the most part, their activities have radically changed their meaning in pursuit of this adaptation. Their traditional horticulture, which was so closely linked to the appearance of the above asterisms, is no longer performed, and their source of livelihood is more related to temporary work opportunities in the nearby village of Las Lomitas, and to assistance programmes provided by the government. Notwithstanding this, the study of these two asterisms led us to the annual cycle as understood by the elders, and it provided a fruitful context to analyse the representations created by the string games. By examining the string games in the context of their traditional worldview, we have concluded that they might serve as a graphic recording of a critical period for the

Pilagá before their colonisation; the passing from scarcity to abundance, which marked the start of a new annual cycle.

As described so far, this string game may be considered similar to a kind of mobile “calendar” that highlighted qualified periods for the ancient Pilagá, and the representations drawn on such “calendar” would be as fleeting as the time elapsed during the observation of the asterisms (Gómez and Braunstein 2020). The string game mentioned refers both to the sowing tasks associated with *Dapichi'* and *Yagayna'di*, and to the start of the annual cycle, and hence, to the end of the previous one. Therefore, it represents two time cycles of great importance from the point of view of Pilagá social reproduction; a period of scarcity, on the one hand, and a subsequent period of abundance, on the other. The first observation of the Pleiades indicated the arrival of winter, that is, the start of the traditional annual cycle where the cold and frost terminated plants, although this, in turn, was the necessary condition for the ensuing rebirth of the forest.

<sup>4</sup>For details about its execution, see Gómez and Braunstein 2020.



## Final Considerations

In the two cases analysed and through the mentioned artefacts, two time cycles have been identified of great significance for the Toba and the Pilagá. Ultimately, in both cases the difference between two qualified and opposite moments is marked; day and night, in the case of the Toba with the watch, and scarcity and abundance through the string game among the Pilagá.

In the case of the watch and the day, when reading the position of the sun in the sky and when looking at their watch or mobile, their main objective was to know the right time to leave the forest, which should occur before sunset. For those who are not *pioGonák* it is advisable to be at home or in the village before dark. In sum, their main concern was to predict the arrival of the day or the night. It is essential to be able to interpret the signals provided by the sky, and now understand what the watch indicates, so as to go to the forest before sunrise. In this way, they can get to the desired destination before the sun is too strong and prevents their travels.

On the other hand, the opposition signalled by the Pilagá and recreated by means of the string game marks the end and start of a new annual cycle. The difference between a period of scarcity followed by a period of abundance is therefore indicated. It should be noted that both the appearance of *Dapichi'* (mostly linked to the Pleiades) and *Yagayna'di* (Belt of Orion) points to a time of scarcity. Additionally, according to the Pilagá viewpoint, it is the cold and frost associated with these asterisms that will enable the arrival of a time of prosperity,

which makes possible the resurgence of the forest and of life.

Hence, and bearing in mind a classic like Henri Hubert (1946), we have noted that in both cases the cycles analysed make up qualified time rhythms that are signalled by the artefacts described. In the case of the day, the Toba were mostly interested in marking the key difference between day and night. Among the Pilagá, the string game signalled the time of scarcity and the time of abundance, which had different qualities (Hubert 1946:312-315). By means of these two artefacts, they express a way of understanding temporality, which mainly refers to the knowledge passed on by the elders and which they call “the studies of the elders”.

As regards the artefacts used, in the case of the watches, they are evidently an element related to the imposed lifestyle. However, watches are read on their own terms. In principle, the watch does not stand out for its accuracy to tell the time, but they see it as an “image of the sun” and therefore what the sun marks for them. On the other hand, string games are still in use, although at present the end of the annual cycle seems to be more related to what is marked by the surrounding society's Gregorian calendar. Notwithstanding this, when examining the string games, the knowledge inherited from the ancients reappears with great strength. They need to address *Dapichi'* so that, after sending the cold, he and *Yagayna'di* may promote a new period of abundance.

**Acknowledgements:** I would like to especially thank Dr José Braunstein who generously shared the use of string games

surveyed by him in several Chaco areas. His collaboration was essential for the completion of our work. I would also like to express my gratitude to the anonymous reviewers of this article.

## Cited references

Braunstein, J. (1994) "Las figuras de hilo del Gran Chaco. III. Figuras de los pilagá y toba-pilagá (1era. parte)". *Hacia una nueva Carta Étnica del Gran Chaco VI, Las Lomitas*, Centro del Hombre Antiguo Chaqueño, 139-150.

Braunstein, J. (1996) *Langages de ficelle. Au fil d'une enquête dans le Chaco argentin*, *Technique & Culture*, 27, 137-151.

Braunstein, J. (2017) *De memoria: siguiendo el hilo. Carta Étnica. Hacia una nueva Carta Étnica del Gran Chaco. Nueva serie*

IV. *Juegos y lenguajes de hilo en el Gran Chaco*, Scotts Valley, CreateSpace-Amazon. 5-34.

Córdoba, L. (2020) *Un escocés en el Chaco. John Arnott, misionero y etnógrafo*. Cochabamba, ILAMIS, Itinerarios Editorial.

Gómez, C. and J. Braunstein (2020) *Cielo y Juegos de hilo. Representación de la temporalidad cíclica entre los Pilagá del Pilcomayo*. *Revista del Museo de La Plata. Universidad Nacional de La Plata, Facultad Ciencias Naturales y Museo*. 5 (2), 602-617.

Gómez, C. and M. B. Carpio. 2018 *Ahéwa likíʔi. El reloj y la jornada entre los tobas del oeste de Formosa* (Guaycurú, Argentina). *Espaço Amerindio. Porto Alegre* 12 (1), 144-173.

Hubert, H. (1946) *Estudio somero de la representación del tiempo en la religión y en la magia*. Hubert, H.; M. Mauss (Org.). *Magia y sacrificio en la historia de las religiones*. Buenos Aires, Lautaro.. 285-336.