The Sun and the Moon as Marks of Time and Space Among the Mocovíes of the Argentinean Chaco

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Abstract

The present work addresses some key aspects of the concepts of space and time among the Mocoví peoples, a hunter-gatherer group of the Argentinean Chaco. Our aim is to show the main role that the Sun and the Moon have played, and still do play, in the construction of the Mocoví cosmos.

The Sun and Moon are related to power and abundance, both of them central topics in Mocoví thought. We will see how they have served to mark fixed points, or "marks," in space and time as well as in the spatial structure of the terrestrial plane of the Mocoví universe. These celestial objects play their important role when moving through the sky in their respective paths, a concept that acquires a structuring function in the Mocoví *cosmovisión* that allows them to think of diverse aspects of existence.

The temporal structure delineated by the movement of the Sun and the Moon forms cycles of abundance and power, renewed by going through critical moments. The spatial structure implies a concept of the terrestrial plane that conceives the pair north-south and the pair east-west as qualified portions of the horizon grouped in significant pairs. The intercardinal diagonals are also of great importance and are defined by the "corners" of the terrestrial plane. They relate not only to solar movement but also to the concept of wind.

We will discuss the fact that these ideas existed among the ancient Mocoví, as the first chroniclers and linguistic evidence affirm, and are still active to this day. The Spaniards' conquest imposed upon the Mocoví people an unbalanced power relation and put them under enormous cultural pressures that introduced important changes. In any event, the logic of the Mocoví *cosmovisión* has adapted creatively and persists in a complex game of breaks and continuities.

In order to achieve our aim, we combine the use of ethnohistoric sources with the ethnographic material obtained from our fieldwork and from other contemporary sources.

Resumen

Este trabajo aborda algunos conceptos clave de las concepciones sobre el espacio y

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el tiempo de los mocovíes, un grupo cazador recolector del Chaco argentino. Procuraremos mostrar el rol central que el Sol y la Luna han cumplido y aún desempeñan en la estructuración del cosmos mocoví.

Sol y Luna están vinculados al poder y la abundancia dos de los temas centrales del pensamiento mocoví. Veremos como han servido como "marcas" para el espacio y el tiempo, señalando los hitos fundamentales tanto del calendario como de la estructura espacial del plano terrestre del universo mocoví. Estos astros cumplen su importante rol al desplazarse por el cielo a lo largo de sus respectivos caminos, concepto que adquiere en la cosmovisión mocoví una función estructurante, que permite pensar diversos ámbitos de la existencia.

La estructura temporal delineada por los caminos del Sol y la Luna tiene la forma de ciclos de abundancia y poder, que se renuevan pasando por momentos críticos. La estructura espacial implica una concepción del plano terrestre que concibe a la dupla norte-sur, y a la dupla este-oeste como porciones cualificadas de horizonte, agrupadas en pares significativos. Por otra parte son de gran importancia las diagonales intercardinales, definidas entre las "esquinas" del plano terrestre, y vinculadas no solo al movimiento solar, sino también a una conceptualización de los vientos.

Discutiremos como estas ideas no solo están presentes en los antiguos mocovíes, tal como lo atestiguan los primeros cronistas y las evidencias lingüísticas, sino que aún hoy permanecen activas. La conquista impuso a los mocovíes una desigual relación de fuerzas y los sometió a enormes presiones culturales que introdujeron importantes cambios. Pero pese a ello, las lógicas de la cosmovisión mocoví se han adaptado creativamente y persisten en un complejo juego de rupturas y continuidades.

Para logra nuestro objetivo combinamos el uso de fuentes ethnohistóricas con material etnográfico recogido en la actualidad.

The Mocoví

The Mocoví people live in the southern part of Chaco province, within the borders of the Argentine Republic (see Figure 1). They were originally hunters and gatherers. Soon after the Spaniards' arrival, the Mocoví adopted an equestrian culture. With Urizar's expedition in 1710, they were forced to move to the south and the east, to the Argentinean provinces of Corrientes and Santa Fe. This affected them to a great extent, and from 1743 many bands searched for peace with the Spaniards and allowed missionary foundations among their people, most of which did not last long. By the end of the nineteenth century and the beginning of the twentieth, the advance of national society to Chaco from Santa Fe caused the return of most of the Mocovíes to the southern region of Chaco province. Today, the surviving Mocovíes (around 12,000 as of December 2004) are situated in the Argentinean provinces of Santa Fe and Chaco. The Colonia Juan Larrea and Cacique Catán settlements are located in the latter, where we have carried out fieldwork from 1999 to the present. The Chaco area is especially important to the understanding of South American *cosmovisións,* due to the role of South America as a cultural corridor because of its geographic location, among the Andean, Amazonian, Patagonian, and Mesopotamian regions. Of all the peoples that inhabited this area, the Mocovíes are one of the least studied up to the present.

FIGURE 1. Map of South America showing the area studied (reprinted courtesy of *Ethnologie Française* [López and Giménez Benítez 2005:446]).

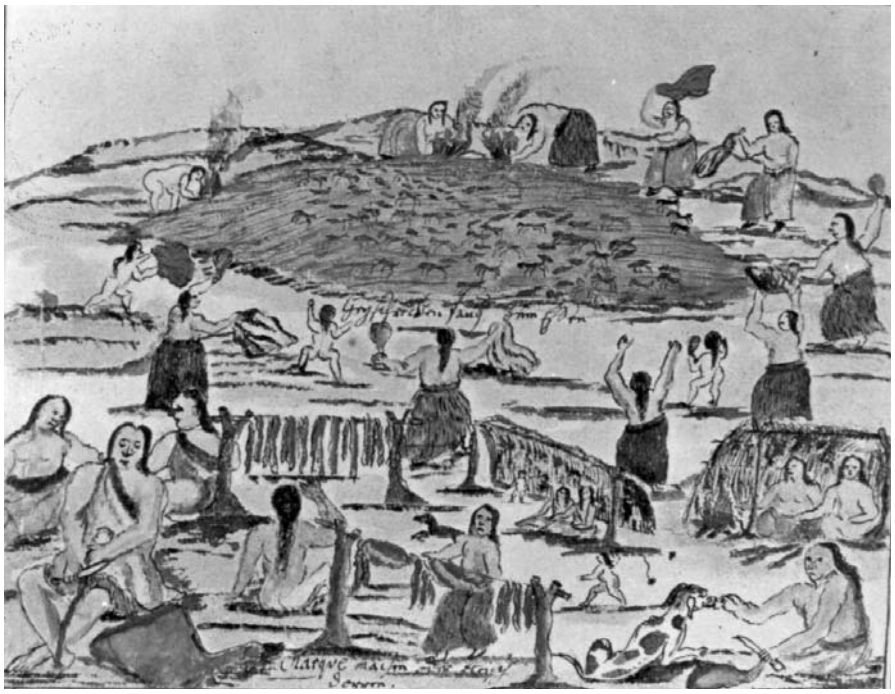

FIGURE 2. Mocoví man hunting jaguars (*Panthera onca*) with horses and lasso at the time of the arrival of the first missionaries (painting by Florian Paucke, Jesuit priest, ca. 1760; Banco de Imágenes Florian Paucke; Ministerio de Gobierno, Justicia y Culto; Sistema Provincial de Archivos Archivo General de la Provincia de Santa Fe, Argentina).

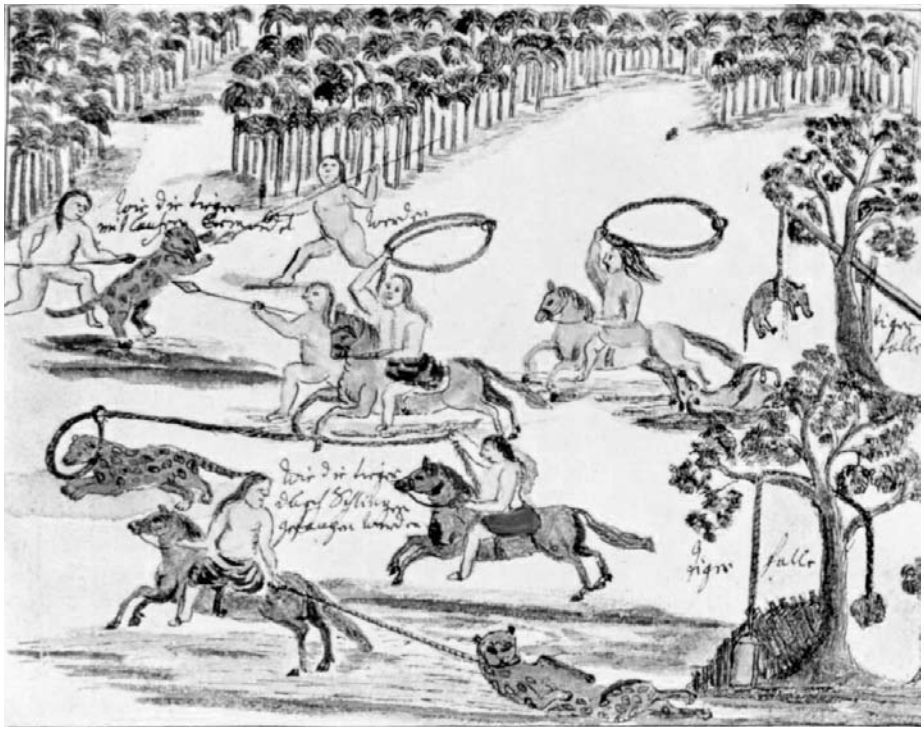

FIGURE 3. Mocoví burning grass to catch locusts to eat and drying thin slices of meat in the Sun (painting by Florian Paucke, Jesuit priest, ca. 1760; Banco de Imágenes Florian Paucke; Ministerio de Gobierno, Justicia y Culto; Sistema Provincial de Archivos Archivo General de la Provincia de Santa Fe, Argentina).

Previous Sources

The Mocoví language is one of the least studied of the languages of the Guaycurú linguistic group. Several chroniclers have dealt with the Mocoví: Nicolás del Techo (1673), José Guevara (1969 [1764]), Pedro Lozano (1873–1874 [1745]), and Florián Paucke (1942–1944 [1749–1767]). Also, Martin Dobrizhoffer (1967–1969 [1783]), a Jesuit, provides much material about the Guaycurúes. In those texts, there are references to mythical tales, some of which are connected to the Mocoví concept of the celestial (see Figures 2 and 3).

The most detailed paper about the Mocoví language is the one by Dr. Cecilia Beatriz Gualdieri (1998), which has not yet been published in Spanish. Several dictionaries of the Mocoví language were compiled before the twentieth century, for instance, those of Father Tavolini and S. Lafone Quevedo (1892a, 1892b). The work of Alberto S. Buckwalter (1995) is very useful, especially its modern, large vocabulary, made in the context of Protestant missions.

Roberto Lehmann-Nitsche's works remain the primary source of data about Guaycurú astronomy. It is a pioneering work, part of a series of monographs written during the 1920s, with the aim of giving a shape to the field he called "*etnoastrognosis*" (1919a, 1919b, 1919c, 1922, 1923a, 1923b, 1924a, 1924b, 1924c, 1924d, 1924e, 1927) and which may coincide with what we know as astronomy in culture (Belmonte 1999). These papers were conceived by Lehmann-Nitsche as preliminary work. In the case of the Mocovíes, he combines the use of some colonial sources (Guevara in particular) and interviews of a few informants.

Buenaventura Terán is an ethnographer who dedicated many years to the Mocoví people, though his observations in many cases remain unpublished and in other cases the observations are not properly systematized (1985, 1991, 1995, 1996, 1998). The text of Johannes Wilbert and Karin Simmoneau (1988) is based upon these sources.

There are also some papers from Ezequiel Ruiz Moras (1999) about Toba (a neighboring and related group) astronomy and some isolated mentions of the astronomy of these groups in the ethnographic literature of the Chaco, to complete the picture.

Our Fieldwork

Our fieldwork is focused on two Mocoví communities in the southwest of the Argentinean province of Chaco: the villages Juan Larrea and Cacique Catán. They are two rural communities about 57 km and 40 km, respectively, from the nearest city (Charata). The oldest of these communities is Cacique Catán. It is the second area of settlement of the Mocoví population that came to this area of Chaco province from Santa Fe about 1914 because of pressure from the national authorities.

Originally they settled in Pampa del Cielo, but later they moved to the present location of Cacique Catán following the advice of Creole authorities, because the area of Pampa del Cielo started to become of interest to the national society. At that time, about 1922, the area of Cacique Catán was still virgin wilderness. This settlement was named after the most famous of the Mocoví chiefs in the region: Cacique Catán, son of Chief Pedro José. Catán ruled the village up to the 1970s, when he died. He was deeply respected by the Mocoví community as well as by the Creole people. During his life he was the principal authority in the region.[1] There are approximately 400 people currently in the area of Cacique Catán village, of which the main nuclear families own their own fields, each about 25 ha in size. Some of these families are European colonials and Creoles, some of whom were expelled from other regions (see Trinchero 1998). The landowners rent plots of land to other villagers. In general, the villagers grow their own vegetables on a small piece of land and breed hens, but their main economic activity is working as day laborers at harvest and removing unwanted vegetation from the fields. They do not do handicrafts because of the lack of a regular market. In general, the health of the inhabitants is poor.

In Juan Larrea village, which was settled in the 1980s, on the other hand, many of the families are landowners, though the fields are much smaller than those of Cacique Catán, so the families do not rent them out. There are about 100 people in this village; their health is also poor.

We have also worked with some members of the Mocoví community of San Bernardo, who live in a neighboring town in the southwest of Chaco

FIGURE 4. A modern Mocoví making wood posts of *quebracho colorado* (*Schinopsis balansae* Engl.) to sell (photograph by Sixto Giménez Benítez (reprinted courtesy of *Ethnologie Française* [López and Giménez Benítez 2005:454]).

province. There are only some blocks occupied mainly by Mocoví families that have left the life in the virgin bush, or *monte,* because of the lack of work there. In this case we have also worked with Mocoví bilingual teachers.

We performed a longitudinal study in the area, using many techniques: for example, in-depth interviews, participant observation, conversations with different levels of formality, and photographic registers. Also, together with Mocoví people of the studied communities we used the planetarium in Buenos Aires as an instrument of ethnoastronomic research. All this has been done over many years and in diverse communities. Some of our preliminary results have already been published (Giménez Benítez and López 2004; Giménez Benítez, López, and Granada 2002, 2004; Giménez Benítez, López, and Mammana 1999; López and Giménez Benítez 2001, 2005).

At the present time we are extending our fieldwork to suburban areas of the province of Santa Fe and communities where Mocoví and Toba people coexist (see Figures 4 and 5).

The Sun and the Moon

Much has been said about the role of the Sun and the Moon among the Mocovíes of the Argentinean Chaco. Some authors from the beginning of the twentieth century even discussed an astral cult and pilgrimages of thousands of kilometers (Álvarez 1926). Our fieldwork and the written sources do not enable us to affirm this, but they show the enormous importance of sky to the Mocovíes, in particular the Sun and the Moon.

In the eighteenth century, Father Guevara (1969 [1764]), who led one of the few missionary attempts among the Mocovíes, affirmed that the Mocoví belief

FIGURE 5. A typical household of the modern Mocoví in the southwest of Chaco Province (photograph by Sixto Giménez Benítez).

was that the Sun was a woman and the Moon a man. Modern Mocovíes also believe this. The name found in our fieldwork for the Sun is *Ra'aasa* (*Gdazoa* in Guevara's book) and for the Moon, *Shiraigo* (*Cidaigo* in Guevara's book). According to Guevara's testimony, *Gdazoa* means "partner." Some, following Toba testimonies (Lehmann-Nitsche 1924a), suggest that the Sun (female) is the partner of the Moon (male), but Guevara's text does not clear it up, and our informants do not express such a belief. In fact, from what Guevara mentions (Lehmann-Nitsche 1927) and from our own informants, the Moon is supposed to have the stars that are close to him as "partners" (and when they go away, widowhood appears among the Mocoví people).

This chronicler also mentions Mocoví tales about two times that the Sun fell to Earth. After the first fall the Mocovíes themselves put the Sun in its place again and fastened it with poles. The second one caused a cosmic cataclysm. Today no stories of the Sun are told; in fact, the stories mentioned by Guevara are no longer remembered. When we asked the people in the communities we work in about the possibility of the Sun falling to Earth, they always denied it and were surprised at the question. It is evident to them that such an event would destroy the Earth.

Buenaventura Terán (1998) also mentions Mocoví stories referring to the existence of two Suns, a former Sun of smoke and the Sun of today, which is thought to be made of honey. They say that the *koñilala* ("blond" wasps, producers of honey) would have produced the change (note that smoke is used to move bees and wasps away from their hives). According to Terán, the cultural hero Qaqaré (identified with the southern *caracara* or *caracara plancus*) would have been of great importance in this change. We have not found signs

of these stories in the communities we studied, even though Terán drew part of his material from them. This situation tells us about the degree of change over time, the importance of personal and family versions, and Creole influences on these beliefs.

The importance of these celestial objects in Mocoví thought is clearly seen in practices that Guevara mentioned about eclipses of the Sun. According to the Jesuit's account (Guevara 1969 [1764]), ancient Mocovíes hit objects and dogs and sang in order to make an eclipse end.[2] Today, our informants still use these events as important "marks." According to some testimonies, eclipses of the Sun occur when the Moon darkens the Sun, *napál chiguiñi—napalaxa* means "darkness" (Buckwalter 1995). The phrase *napál chiguiñi* is also used with the meaning of "getting dark." On the other hand, the word *napál* refers to the dead, and the particle *–pal* is associated with the idea of erasing (Buckwalter 1995). Others describe the event as a hit or attack, or like an encounter. Eclipses of the Moon would be caused by a *naiapek,* or "demon," that tries to eat it up.

The Sun and Moon are also implied in the opposition of warm on the one side to cold and water on the other (Terán 1998).

In the Mocoví characterization of the Sun and the Moon, their "paths" are particularly important. We refer to the cyclical annual and daily paths in the case of the Sun, and monthly paths in the case of the Moon. For the Mocoví people, it is through these paths that the Sun and the Moon outline space and time.

The Sun and the Daily Cycle

The positions of the Sun have been used to set the different parts of the day (*na'xa'a*). Daylight hours are designated by the term *uqiyina'xa'a, re'qoochiguiñi,* or *ñaqa viteta*.

Sunrise is *richilecna* or *nogoshim ra'aasa* (the Sun comes out). The term for midmorning is *noÿoxoguem aso ra'aasa* (the Sun quite high). The phrase used for midday is *na'xa'a lavinñi* (the middle of the day) or *nagira shini ra'aasa* (the Sun in its highest point—the real midday). *Lavit* is the afternoon. The end of the day is *ignovoñic ra'aasa* (the Sun comes down). The Mocoví people used various kinds of gnomons to identify the different moments of the day. The term for night is *Pe*. *Pe lauel* (half night) is the term for midnight (Buckwalter 1995), and *'te eta* is used to designate early-morning hours (López and Giménez Benítez 2001).

Thus, we can see that the positions of the Sun in its daily path were relevant to the Mocoví as points that mark the time. But the daily movement of the celestial bodies, which the Sun shares with the Moon, the stars, and the whole celestial vault, also had the role of establishing marks in space. We believe that these daily paths of the celestial bodies are the basis of what the Mocoví understand as north and south.

The idea of "path" is another important structuring concept in Mocoví thought (Giménez Benítez, López, and Granada 2002) that acts, as for many other American peoples, as an axis describing vital experiences, from one's own biography to the structure of the cosmos.

The term for north, *rapiguim,* is associated among the Mocovíes with the word that means sky, *piguim,* and consequently has a clear connotation of elevation. The term for south, *'guiñi,* is used when referring to something that falls or is knocked down. It could seem strange that among people of the southern hemisphere, where the celestial pole is elevated, the term for north was related to the sky and the one for south related to falling.[3] But we should leave aside our perceptions and avoid paying attention to the position of the celestial pole, as it lacks relevance for the Mocoví people. If we bear this idea in mind, the daily paths of the Sun, Moon, and other asterisms, as they move northward, rise on the firmament and, as they move southward, take a descending path. The Mocoví people of the communities we visited often talk about the idea of the Sun, who at night goes to a lower world, conceived of as a region similar to ours (Giménez Benítez, López, and Granada 2002; Lehmann-Nitsche 1924b). It sounds likely, then, that the deepest point of this region is thought to be in the south. We then realize that Mocoví concepts of north and south agree with an observation of celestial beings as having a vital path to go through in a certain way. North and south are "poles" of a movement of access to the upper world or lower world, respectively. This idea is reinforced by the testimonies we gathered about the association of a falling star to the

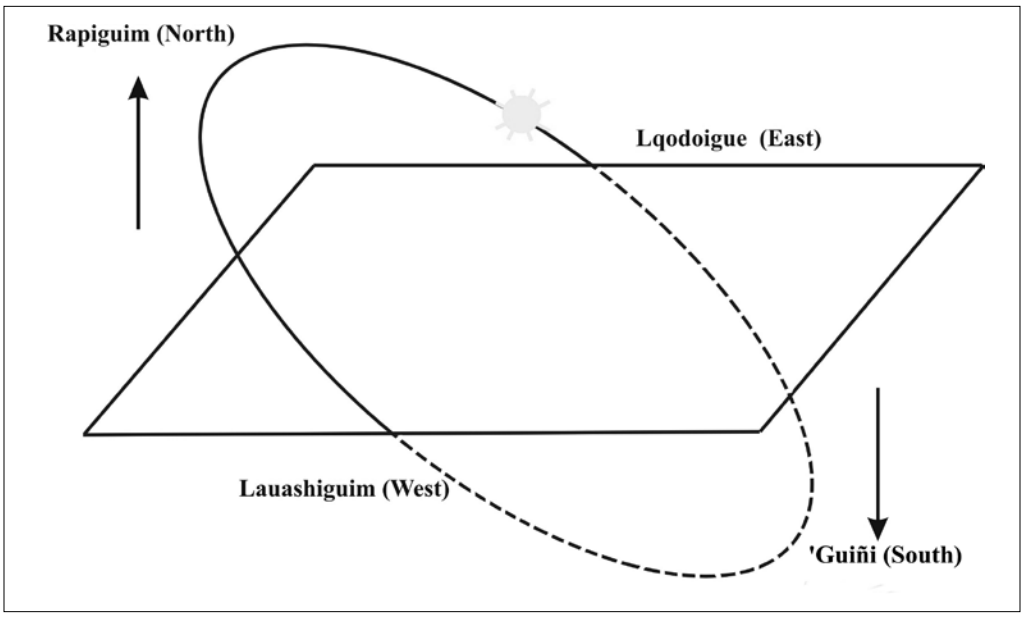

FIGURE 6. Relation between north-south axis and up-down axis due to the daily "paths" of the Sun, Moon, and other asterisms, rising on the firmament as they move north and descending as they move south.

north wind (Giménez Benítez, López, and Mammana 1999) (see Figure 6).

In this same sense, Lehmann-Nitsche indicates that for Mocoví (1924c) and Toba (1924b) people, the north was a privileged area, the source of "summer and heat."

The Cycle of the Moon

For the Mocovíes, the cycle of the Moon (male) resembles different epochs of life. Its phases are designated with terms associated with the growing stages of vegetables, animals, and people. This same lunar cycle is used by Mocovíes, as with many other cultures, to measure time. Here is one of the most representative versions obtained of this sequence (transmitted by Francisco Ramón Gómez): *Chicqochingui shiraigo–noquiquetara'ic–looc shiraigo–lodegaxat shiraigo / qo'xoic / ime–Qaica shiraigo–Lauaic shiraigo*. There the Moon was born–it is growing–it's already pretty large–it almost completes / it has already completed / it is finished, it is full–don't have Moon–it starts (the cycle again).[4] We can see that the most important part of the Moon's cycle is the period between the crescent Moon and the full Moon.

Following are some of the expressions used in this series, according to Buckwalter's dictionary (1995): *chicqochi'ñi*: comes out from a certain place; *noquiiquetec*: it becomes bigger; *noquiic*: grows; *looc*: quite big; *lodegaxat*: very big; *qo'xoic*: old; *ime*: it ends up, dies; *qaica*: doesn't have masculine thing; *lauaic*: weak. In the whole series there seem to be capriciously mixed space references, such as west-east ("there the Moon was born") and references to size ("growing," "quite big"), to age ("old"), and to vitality ("weak").

We believe that it is possible to recover the logic of the series, thinking of it as a "series of power," where the diverse aspects mentioned are just its indicators. This is reinforced by the fact that a similar situation can be found in the sequences of age, family members, and generation, which are related to the sequence of lunar phases, not only because of metaphorical similarity but also because of common ties with the idea of fecundity and abundance (Giménez Benítez and López 2004). It is not a series that continually increases in power but one whose power increases up to a maximum level and then decreases. The series of power and relationship or generation is a main concept in the Mocoví way of structuring their

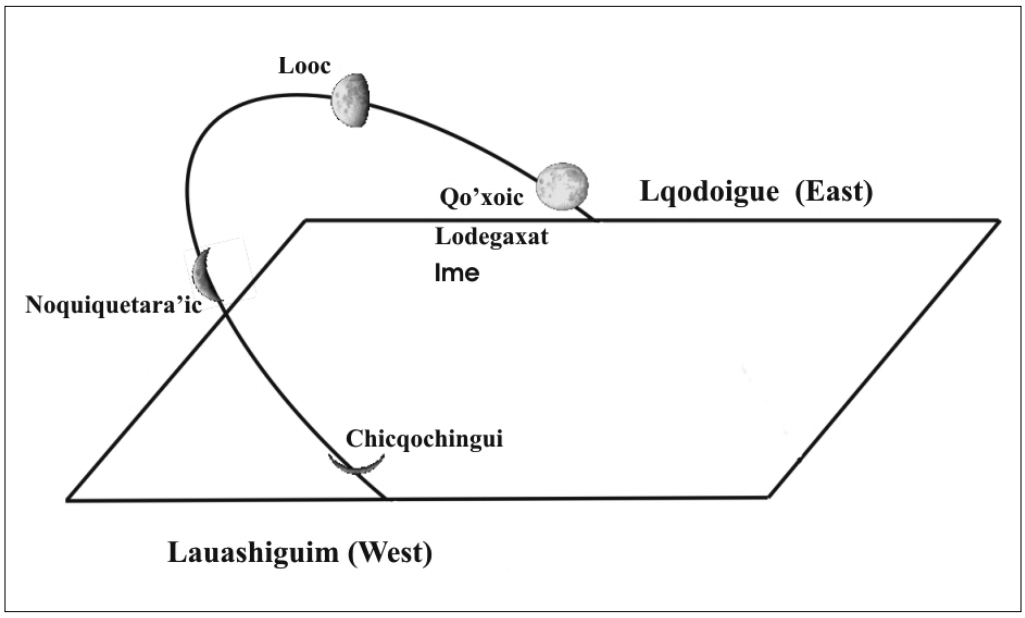

FIGURE 7. At the start of the lunar cycle (crescent Moon) at sunset, the Moon can be seen on the western horizon; whereas at the full Moon, at sunset, we observe the Moon on the eastern horizon. These observations explain the reason for the names for east (*lqodoigue,* which means "end") and west (*lauashiguim,* which means "shine, to elevate").

experience (López and Giménez Benítez 2005). It is relevant to notice that from a spatial point of view the series also implies a "path" from west to east, because of the fact that at the starting of the lunar cycle, at sunset, the crescent Moon can be seen on the western horizon, whereas at the peak of the cycle, at sunset, we observe the full Moon on the eastern horizon. As we have already mentioned, this concept of the "path" is a fundamental organizing structure of the Mocoví experience.

In this sense we should mention that a detailed analysis of the terms used by Mocoví people to designate cardinal points suggests that the "path of the Moon" is used to determine them. It has been supposed that Mocoví concepts of east and west are based on the daily movement of the Sun. But the word for east (*lqodoigue*) seems to be connected to the term *lqodoc,* which means "its end," "its faith," "its death," or "its finishing"; whereas the word for west (*lauashiguim*) has an ending particle, *–shiguim*, which means "to elevate." This structure, because of the precision that the Mocoví language has to indicate direction and positions in space (Gualdieri 1998), forces us to abandon the idea of the daily movement of the Sun as an explanation of the Mocoví directional system.

Our fieldwork has impelled us to consider that the principle that rules the Mocoví concepts of east and west is the positions of the Moon. As we have mentioned, the symbolic structure of the lunar cycle and its associations with east and west conform to the meaning of the Mocoví words. Apart from this, our Mocoví informants, when referring to the phases of new and full Moon, always associate them with the positions of the Moon on the horizon. This way, east and west are related to the path of the Moon (see Figure 7).

The Sun and the Annual Cycle

The "year" of the Mocovíes is conceived of as the repetition of a cycle related to abundance. In fact, the word for "year," *ñaaxa,* means "time of maturity" and often refers to the summer. For this reason, among the Mocovíes, when talking about years that have passed, one is talking about the number of cycles of maturity and abundance. According to Terán (1998), the beginning of the year is related to a renewal of the Sun and the Moon, mimicking a change of "rind" or "shell," which would imply a renewal in its brightness and power: a rejuvenation similar to that of a turtle.

It is during summer that the fruit of the *algarrobo* (*prosopis alba* and *nigra*) or *map* tree matures. These used to form a substantial portion of the traditional Mocoví diet. Their abundance would begin to decrease with the heliacal rising of the Pleiades in the middle of June.[5] In this sense, Guevara (1969 [1764]) says that the Pleiades were called *Gdoapidalgate,* which means "our grandfather, the Lord." Today, the term *Lapilalagachi* has that same meaning (Lehmann-Nitsche 1924c), and he is supposed to have been their creator or the founder of their lineage. Even though our informants agree with this idea, some of them indicate at the same time that the year would start in July, when the Sun returns:[6] *dapil ra'aasa* (*ra'aasa* means Sun) (Terán 1998).

So, this situation suggests that the return of the Pleiades (heliacal rising) and of the Sun (solstice) plays the same role, indicating the return of abundance and the promise of a new cycle of fecundity. In this sense, it is especially revealing that the term by which the Pleiades are known qualifies them to be an ancestor of this ethnic group (*Lapilalagachi*). We have had several testimonies about the existence of an ancient name for the Sun, *Larrimina,* used at the beginning of the twentieth century in the context of a "prayer to the Sun" said in the morning. This name is used with the connotation of understanding that the Sun is the mother of the Mocovíes.

Among the Mocovíes, the sky is considered a region of abundance and power, mostly inhabited by female beings (Giménez Benítez, López, and Granada 2002). From this region the renewal of terrestrial abundance is expected, and this is especially indicated by the celestial signs already mentioned. Thus, the "paths" of the Pleiades and of the Sun, conceived, respectively, as ancestor and mother of the Mocoví people, mark the annual cycle of abundance. In particular, the "return" of the Pleiades and the Sun (the heliacal rising of the Pleiades and the solstice in June) constitutes the temporal marks of the beginning of a new cycle of fecundity and the assurance that summer is coming. In our fieldwork we have found that the informants tend to talk about the "appearing" of the Pleiades in a sufficiently blurred way, in terms of height above the horizon and brightness, so that both marks of "the beginning of the year" are likely to coincide in time.

Therefore, the importance of the eastern horizon and the concept of "return" or "reappearance" of the Sun, the Moon, and the Pleiades are evident in the construction of the Mocoví notion of renewal of abundance throughout the different temporal cycles. In fact, and contrary to what Lehmann-Nitsche (1924b, 1924c) indicated,[7] today it is usual in the aboriginal cemetery of Colonia Cacique Catán to bury the dead with their heads facing eastward (which is evident and corroborated by our Mocoví informants). Pedro Balquinta, one of the oldest people in the region, affirms that the ancient Mocoví people used to bury their dead with their heads facing to the east so that the Sun could light them.

In some communities (Terán 1998), the beginning of the year is related to springtime, which clearly used to be a powerful time among the Mocoví, and related to the display of the abundance that had already started to generate during autumn. According to colonial sources, springtime was the time of some social and political celebrations, the time when groups started to get together.

The annual cycle of the Sun seems to be involved with other important marks of space conceived of by the Mocoví, such as the "corners" of Earth.

The Structure of the Terrestrial Plane and the Mocoví "Intercardinal Corners"

At this point we think it is appropriate to go into more depth about Mocoví concepts of the structure of the terrestrial plane (*'laua*). The testimonies of the Mocoví people in these communities agree with the idea of north, south, east, and west as portions of the horizon, as sides of an imaginary square that represents the terrestrial plane (see Figure 8).[8]

Thus, all that we have stated about east, west, north, and south among the Mocoví must be thought of in terms of the sides of a square and not as cardinal directions in the sense that we are familiar with. This square possesses four important features for the Mocoví apart from the sides: the four corners. The Mocoví call them *esquinas* (corners) in Spanish. Our fieldwork suggests that for the Mocoví these corners are related to the extreme positions of the Sun at sunrise and sunset during the annual cycle, that is, at the time of the solstices. Each of these corners has two names

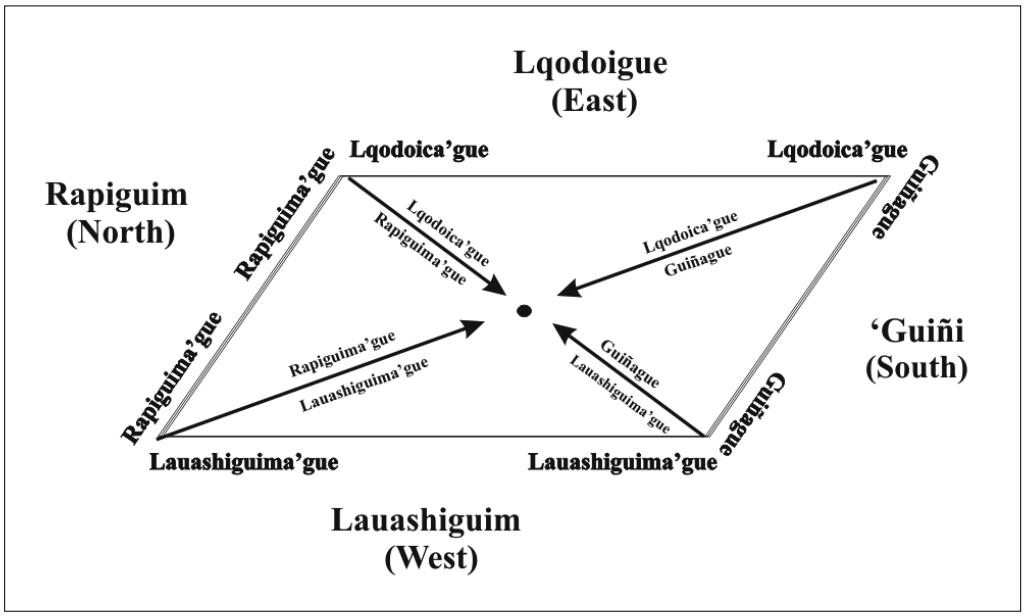

FIGURE 8. 'Laua, the intermediate earthly plane, is a quadrangle in which east, west, south, and north are sides, and the corners are related to the positions of the Sun at sunset and sunrise at the solstices and to the winds. Each corner is identified in two different ways, relative to the two different sides to which it is joined.

in the Mocoví language, each name representing the end of one of the sides that meet in that corner:[9]

- *Lqodoica'gue* means northeast and southeast, that is, one of the corners of the east (*lqodoigue*) side of the world.
- *Lauashiguima'gue* means northwest and sout west, that is, one of the corners of the west (*lauashiguim*) side of the world.
- *Guiñague* means southeast and southwest, that is, one of the corners of the south (*'guiñi*) side of the world.
- *Rapiguima'gue* means northeast and northwest, that is, one of the corners of the north (*rapiguim*) side of the world.

Here, the lines that join the corners of this square with the center have characteristics of "directed lines" and correspond approximately to those that we call NE, SE, NW, and SW. This idea of the importance of a quadrangular scheme of the terrestrial plane with its diagonals as important directions is consistent with what is observed in cultures of other American peoples.[10]

This idea of the "diagonals" is reflected again in the fact that the Mocoví terminology for the winds names them with the words used for the corners from which they come:

- *lqodoica'gue*: northeastern and southeastern winds
- *lauashiguima'gue*: northwestern and southwestern winds
- *guiñague*: southeastern and southwestern winds
- *rapiguima'gue:* means "toward the north"[11]

(On analyzing the previous terminologies, we think that this must be understood as "coming from the corners of the north.")

The Influence of the Conquest

Throughout this work we have been drawing together and comparing the material obtained from chroniclers, the ethnographies from the beginning of the twentieth century, and our own fieldwork among the Mocoví of present time. This is possible because, with some surface differences, the deep logic that structures Mocoví thought maintains an important continuity.

The key concepts, the importance of the Sun and the Moon and the ideas of "path" and "abundance cycle," are current today among the Mocoví people of the communities studied. This happens despite the use of European calendars, almanacs, clocks, watches, and European conceptions of space because of the Mocoví participation in the labor activities of an important agricultural region. The fact that many of these communities are still in rural areas (despite the progressive destruction of the *monte*) and the people live most of their community lives in the open air has favored observations of the sky, in particular of the Sun and the Moon, in everyday life.

Even modern agricultural work leaves some space for the creative interaction of traditional logic and new realities. The same Mocovíes who inoculate cattle or help in harvesting transgenic soybeans still keep their traditional ideas about reasons for the prosperity of crops and cattle.

In the studied communities, the males who work actively in the Creole labor market have fluid management of Creole terminology referring to space and time. They use European terms to designate the cardinal points in Spanish and read European calendars, important to their work as laborers in agriculture. Nevertheless, what is required from the Mocoví laborers in this field is practical knowledge that enables them to interact with the productive system that was imposed on them; there is ample margin in the ambiguity of the terms so that diverse meanings can be applied to them, connected with traditional concepts.

On the other hand, the Mocoví possess a strategy of integrating the techniques and knowledge of the *white* man into the local *cosmovisión,* which consists of assuming that much of the knowledge that resolves problems that arose with the appearance of white men must obviously come from them. This is clearly evidenced in the Mocoví adoption of European medicine to treat diseases that were not conceptualized as such within Mocoví traditions. Something similar occurs with the concepts of space and time.

In the case of women, it is remarkable that their meager interaction with the Creole implies a much more reduced domain of Spanish concepts. There is also a lesser need to make their ideas compatible with the Creole labor world. Therefore, they tend to think of time and space in terms of a more traditional logic. Due to their important role in the raising children of both genders, their role must be carefully taken into account.

The progressive mechanization in growing soybeans and cotton has produced an increasing migration of the Mocoví to nearby urban centers and with this migration comes access of young people to new products, interaction with the Creole, and a longer period of formal education. This is generating complex dynamics, which is outside the scope of this article. However, all the work we have performed with Mocoví bilingual teachers suggests that traditional logic generates important emotive reactions when meeting directly and suddenly with elements of other *cosmovisións*. Diverse types of reactions are found, ranging from attempts to absorb one of the systems into the other to skepticism with respect to both *cosmovisións*.

It is important to remember that traditions are not in general as homogeneous and consistent as our reconstructions suggest. But when we talk about traditions, mainly oral, the role of local variants and the specialists (elderly people, *pi'xonaq,* church ministers, and teachers) takes on central importance. It is necessarily a more plastic and multiform way of conceiving of what is called *cosmovisión* to be aware of traditions and subtraditions of groups because even when they were hunters-gatherers, they lived in smaller communities that gathered together only at certain seasons (Barth 1987). Examples of this are mentioned by missionaries who refer to the change in the vocabulary of some groups of Mocoví families due to the fear of mentioning the name of a dead person (Paucke 1942–1944 [1749–1767]). Because of the use of nouns as proper names, this leads to small bands deciding to replace the name of some thing or animal with a new name, at least for a time.

Conclusions

When analyzing the way in which the Sun (female) and the Moon (male) are used to mark space and time among the Mocoví people, we have seen how the concepts of "abundance cycle," "series of power-fecundity," and "path" turn into structural axes of experiences.

Thus, we must be very careful to avoid projecting on Mocoví concepts our own space-time schemes when interpreting some surface similarities between the two systems. The concept of temporal cycles in terms of the renewal of the generative or fecund capability makes them qualitatively different from their occidental counterparts.

We have shown how these cycles not only constitute temporal "marks" but also help in defining space. The daily movement of the Sun, the Moon, and the stars supports the Mocoví concept of verticality associated with the opposition between the northern horizon and the southern horizon, which we find coherent with what is observed in other American groups. The cycle of the Moon is related, as we have shown, to the opposition and the sense of the pair western horizon/eastern horizon. In this context, the quadrangular shape in which the Mocoví people conceive the terrestrial plane leads us to conceive of north, south, east, and west "sides," rather than as straight directions.

On the other hand, the extreme positions of the Sun at sunrise and at sunset, and the nomenclature for the winds, confirm the importance of the "corners" in this quadrangular configuration and the associated "intercardinal" diagonal directions.

These ideas about the structure of space and time are still seen in the Mocoví communities we visited and are the basis through which they reinterpret the occidental system of measures of space and time with which they are in constant contact. We are talking about living concepts that dynamically adapt to this situation. In fact, the Mocoví people use Spanish vocabulary referring to time and space orientation fluidly, and they are used to wearing watches and checking calendars, which in fact regulate the economic production system of which they are a part.

However, the survival of earlier logical traditions shows that beyond the changes of superficial features, the deep structures possess enough plasticity and vitality to adapt and reinterpret new elements.

We have mentioned the importance of understanding the nonunified, nonhomogeneous character of oral traditions. Then the role of specialists in knowledge (ancient people, *pi'xonaq,* ministers, teachers) becomes central in the creation of local variants. The process of contact between the traditional ways of seeing the cosmos and the elements that have given the Mocoví their contact with the national society is much more complex than the simple duality of conservation/acculturation.

Notes

1. The important leadership of Cacique Catán and his father, Pedro José, is part of a long process of leadership fortification in Mocoví communities. The origins of this process were at first associated with the necessities related to the equestrian hostilities among other Indian groups (Susnik 1972) and later with the necessities imposed by contact with the national society (Trinchero 1998).

2. Many people everywhere do and did similar things.

3. It's interesting to consider the possibility of a similar relation to the Maya *cosmovisión* (Ashmore 1991; Freidel, Schele, and Parker 2000:422; Tedlock 1992). Scholars have differed with regard to specific readings of the directional Maya glyphs, as well as to the question of whether they refer to the Sun's path (east, zenith; west, nadir) or instead to the cardinal directions (east, north, west, south) (Bricker 1988; Closs 1988a, 1988b; Coggins 1988). Stross (1991) proposed that in Classical times alternative programs of directional symbolism—one based on the Sun's path and another on the cardinal directions—were employed in Maya script and iconography. The unmarked normal referents of the "north" and "south" glyphs were zenith and nadir, respectively, whereas the direction zenith also implied north and nadir also implied south (Stross 1991). Schele suggests that the relations of north to up and south to down are related to the Milky Way as the world tree (Freidel, Schele, and Parker 2000:422). At dawn in mid-August, the Milky Way stands erect, running through the zenith from north to south. It becomes the axis of the heavens, the raised-up sky.

4. Similar expressions exist among the Matsigenka from the Peruvian Amazon (Baer 1989). According to Ulrico Köhler (Baer 1989; Köhler 1991), the most usual criteria to conceptualize the Moon's cycle are the (1) Moon's positions (at sunset for the first half of the cycle—new Moon to full Moon—and at dawn for the second half); (2) shape of the Moon; (3) age of the Moon (birth to death); and (4) time of the Moon's rise (for the second half of the cycle). Interestingly, Köhler mentions for Mesoamerica the following facts: The cycle begins with the first visibility of the Moon on the western horizon; the principal points of this cycle are first visibility, full Moon, last visibility, and invisibility (Baer 1989; Köhler 1991). Köhler (1991) also mentions many examples in which the important points are only first visibility, crescent Moon, full Moon, and invisibility.

5. The heliacal rise is the first appearance of a celestial object above the eastern horizon, just before the Sun appears.

When we consider this as an ethnoastronomic category, we must take into account the fact that the height above the horizon at which an asterism can be seen varies because of several factors. In this case, we should consider it to be 10º–15º above the horizontal plane.

6. The Sun's rising point on the horizon moves during the year, describing a "back-and-forth" movement around the cardinal point east. The extreme points are reached on dates called the solstices, about June 21 and December 21.

7. He suggests that the dead would be buried with their heads in the direction of north.

8. In this sense, Closs (1988a:392; 1988b) argues the Maya terms for north, south, east, and west must have referred to relatively wide sectors of the horizon. Šprajc suggests that in the Maya culture east, west, north and south correspond "to extensive and loosely delimited extents in different contexts. When applied to the horizon only, they may have been approximately delimited by the sky-bearers or world corners, whose locations, according to the recently accumulated and mostly ethnographic evidence, coincided with the solstitial points on the horizon" (2004:162). Similar considerations about the corners of the world are pertinent for the Warao of Venezuela (Sánchez 2004; Wilbert 1981) and for the Mapuche of southern Chile and Argentina (Grebe, Pacheco, and Segura 1972). Sosa (1991) makes similar considerations among Maya Yucatecos and mentions similar dispositions among the Tikopia, Warao, Chukchee, and Quechua.

9. Interestingly, the same was mentioned for the Maya Yucateco construction of the names of the corners of the world. For example, the northeast corner is *lak'in yéetel s<a>man* (east by north) or *s<a>man yéetel lak'in* (north by east) (Sosa 1991:195).

10. See, for instance, Freidel, Schele, and Parker (2000:68, 418–419; Sosa 1991) for a discussion of this idea among the Mayas.

11. A certain type of northern wind is called *Huaquiaxaic* (name of a type of armadillo that digs in the soil). The association seems to be between the sound that the animal produces when digging its burrow and the one that the north wind makes.

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