

Aztec Monoliths as Time-Shaping Devices: Coatlicue, Piedra del Sol and Piedra de Tízoc

DOI

<http://dx.doi.org/10.11606/2179-0892.ra.2019.165226>

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ABSTRACT

This article presents a new interpretation of the most famous artistic monuments manufactured by the Aztecs, or Mexica, of Ancient Mesoamerica in the 15th and 16th centuries. Going beyond traditional artistic and iconographic interpretations, it strives to understand these huge works as beings endowed with “agency” that organized and controlled the flow of time and space, the “chronotopes” constructed by the Mexica. The analysis shows the magnitude of the networks mobilized by the Mexica to build these monuments, and also the effects they strived to achieve through them, all within the frame of their “ritual” actions to keep the cosmos working.

KEYWORDS

Chronotope,
Monumental Art,
Aztecs, Mexica,
Ritual, Agency

Monolitos astecas como instrumentos de moldar o tempo: Coatlicue, Pedra do Sol e Pedra de Tízoc

RESUMO

Este artigo propõe uma nova interpretação dos monumentos artísticos mais conhecidos elaborados pelos astecas ou mexicas da Mesoamérica antiga, nos séculos XV e XVI. Além das tradicionais interpretações artísticas e iconográficas, tenta compreender estas obras imensas como seres dotados de “agentividade” que organizavam e controlavam a forma e fluxo do tempo e do espaço, os “cronotopos” construídos pelos mexicas. A análise mostra a magnitude das redes mobilizadas pelos mexicas para construir esses monumentos e também os efeitos que visavam obter com eles, dentro do marco de ações “rituais” para manter o funcionamento do cosmos.

PALAVRAS-CHAVE

Cronotopo, arte monumental, Aztecas, Mexicas, ritual, agência

This article will analyze three very well-known Mexica, or Aztec, stone monuments: the Piedra del sol, the Piedra de Tízoc and the Coatlicue.¹ All three have been celebrated as outstanding examples of a highly original art style and as compelling representations of the Mexica and Mesoamerican world-view. However, the archaeologists, art historians and anthropologists have been unable to reach an agreement on the meaning of their complex iconography and their symbolism. Even the proper titles for these three spectacular works of art have been the subject of heated dispute.

My aim is to propose a new way of understanding these monuments, one that takes into account not only their “meanings”, iconographic, mythological, or religious, but also their “functions”, that is, the effects they were supposed to have on the human beings, divinities and the reality that surrounded them, particularly on time and space. I will also seek to understand their agency, that is, the capacity they were ascribed to act purposefully and to engage in meaningful relations with other beings in complex processes of exchange and mutual transformation (Gell, 1998: 17).

This analysis shall take into account the iconography of these three works, and their symbolic meanings, taking advantage of the many valuable interpretations that have been made of them. However, it will go beyond these readings to take into account their materiality, their size and shape, that is, their “magnitude”, a fundamental element of their intended function. This magnitude is inseparable from the vast and complex networks of humans, deities, objects and knowledges that were mobilized to produce them, and also later to utilize

1 In English-speaking countries this Nahuatl-speaking people is more commonly known as the Aztecs, however the term Mexica, meaning inhabitant of the city of Mexico-Tenochtitlan, is more accurate historically.

them, and to make them work, ritually and materially, in order to produce an effect on other beings, and on reality itself (Latour, 2005).

My contention will be that the monuments functioned as time-shaping devices. In this sense, they did not only represent the different chronotopes of the Mexica, that is, the varied configurations of space and time that they had conceived and that they constructed through their actions, but they were also meant to help keep them working, to guarantee the flow of time and the organization of space, and to organize a network of relations between different human, divine and natural agents in the ways that ensured the continuity of the political and cosmic order constructed by the Mexica State and its elites.

SHAPE AND MEANING

A brief description of the size, shape and general disposition of the three monuments will allow us to approach their different functions in shaping time and space.

The Piedra del sol, or Sun Stone, is a shallow disc of basalt, not entirely cut out from the large rock from which it was sculpted, which appears to have been broken. The whole rock weighs 24,590 kilograms. The disc has a diameter of 3.60 meters and its lateral face is less than 20 centimeters thick (Matos, 2009: 263). Thus, the ratio between the height and width is 1:18, creating a fundamentally flat almost bi-dimensional shape. The main face of the monument is carved with an intricate concentric pattern of figures associated with the Sun in its many different aspects, the thin lateral face is adorned with star signs.

There is some debate about the way in which this monument was displayed. The Dominican historian Diego Durán refers very likely to this stone as a “table for sacrifices and offerings” and adds that it was located on the top of Templo Mayor (Durán, 1967: 323). This suggests that the stone was originally placed horizontally, not vertically as it has been displayed since its discovery in the 18th century (Matos, 2009: 263-264).

The Piedra de Tízoc, Stone of Tízoc, has a cylindrical shape with a diameter of 2.65 meters and a height of 93 centimeters. The ratio of height to width is therefore of 1:2.85. The top side of the monument was carved with solar motifs of rays (similar to those found on the Piedra del Sol). The center of the stone is hollowed out in the shape of a bowl and a canal abutting the side of the stone, probably meant to dislodge blood, appears to have been carved after the rest of the decoration. The side of the stone is profusely decorated with a repetitive series of 15 couples of male warrior figures engaged in combat.

This monument, and a very similar earlier one known as the Piedra del Ex-Arzobispado, are identified by the 16th century histories as *temalácatl*, or stone spindles (Tezozómoc, 1997: 215-228). As we shall see below, they were located

close to Templo Mayor and were associated with the performance of a sacrificial combat, during the feast of Tlacaxipehualiztli, The playing of people.

The Coatlicue is a self-standing anthropomorphic figure. Its shape is more organic than geometric, though its parts are arranged in rigorous symmetries. The statue is 2.50 meters tall; its maximum depth is 1.15 meter, and its maximum width is 1.60 meter (Fernández, 1972: 115). The whole massive figure leans forward, so that its top hangs in front of its base by approximately 20 cms. The body represented in the statue is clearly feminine and human, but its head is made of two coiled serpents, its hands are jaguar claws, and its feet, eagle paws. Adornments of human skulls and hearts surround her neck.

Though we have no clear indication of the ritual use of this monument, there are indications that it was placed, alongside other three similar figures, on the top of the main temple of the Aztec ritual center (Boone, 1999: 204).

Despite their obvious differences in shape and decoration, these three stone monuments share two common features: their extraordinary size, which we shall discuss in the following section as we analyze their magnitude, and the plurality of symbolic meanings conveyed by their iconography. The specialists have argued ceaselessly about the correct identification of the figures depicted in all three works. The face in the center of the Piedra del Sol could belong to the sun god Tonatiuh, the nocturnal sun Yohualtecuhtli, or the earth deity, Tlaltecuhli. Similarly, the warriors depicted on the side of the Piedra de Tízoc could be representations of individual rulers, whole ethnic groups, or even divinities. Finally, the female figure of the Coatlicue has been identified with the earth goddess of that name, but also with other female deities and a horrendous supernatural predator known as tzitzímitl.

One of the main contentions of this article is that this plurality of identifications was entirely deliberate. As ritual objects (Houseman & Severi, 1998), the stones represented and incarnated beings that had more than one identity and were engaged in a process of transformation. Also, they embodied a plural and even contradictory set of relations between divine and human agents. Johannes Neurath has proposed many works of art produced by Mesoamerican peoples to this date seek to represent and also help to produce these moments of ritual metamorphosis and their resulting ambiguity of identities (Neurath, 2013). In this article we shall demonstrate that the plurality of being and meaning, of identities and identifications, was key to the ritual and cosmic functions of the monuments we are studying.

NETWORKS AND MANUFACTURING

In this section I will try to reconstruct the protracted and complex processes that led to the manufacture of these monuments, not only as works of art, but also as objects, or beings, endowed with “secondary agency” (Gell, 1998: 17). This means

that they were believed to be able to act purposefully and to interact with the other beings, human and divine, within the complex networks in which they participated. Following Gell's proposal I will seek to understand the transformations that this process of production effected in the monuments, and also how their subsequent ritual and ceremonial uses were in turn influenced by the agency they acquired.

At the same time I will take into account the size of these monuments, as an index of their "magnitude" or "scale" in the sense that Latour gives to the concept: that is, their relation to a network of agents of a certain size and extension, and their capacity to mobilize and to be mobilized by a certain number of other agents, and to have a measurable effect on them and on the reality around them (Latour, 1993: 106-109).

Though we do not have much information about the process of elaboration of all three monuments, Diego Durán provides a detailed description of the failed attempt by the last Mexica independent ruler, Moteuhczoma Xocoyotzin, to build a new larger *temalácatl* to replace and surpass the Piedra de Tízoc (Durán, 1995: 552-559). According to this history, the *tlatoani*, or ruler, mobilized a numerous array of artists, priests, and entertainers to select, carve, and propitiate the stone, and an even larger contingent of carriers and technicians to transport it to Mexico-Tenochtitlan. However, their efforts were thwarted by the refusal of the stone to budge: after repeated efforts it allowed the carriers to move it only halfway and then refused to move further along. It even spoke to state its reasons with dramatic clarity: "O wretched people, O unfortunate ones! Why do you persist in your desire to take me to the city of Mexico? Behold your work is in vain since it is not my will to go there. But as you it this way, pull me and I will go as far as I wish but it will be to your harm!" (Durán 195: 253). Though Moctezuma spared no effort to force the stone to comply to his will, it finally fell into the lake and then returned on its own to its original location, whereupon the *tlatoani* had to concede defeat.

This narrative allows us to draw important inferences about the nature and the scale of the networks that had to be mobilized to manufacture the three monuments we are studying.

1 A vast number of people.

We can assume that the production of the monuments required the mobilization of human and non-human networks of significant magnitude. Hundreds of haulers were in charge of moving the stone, organized by their respective city-states according to a complex system of political negotiation and tribute extraction. They must have been led by foremen with experience in directing large groups of carriers in the complex choreography needed to transport such a heavy object. According to a modern estimate, up to 800

people were required to carry the rock for the Piedra del Sol (López Luján, 2009: 89). A considerable number of specialists, such as artists priests, musicians, jugglers, architects, divers, were also used to transform the stone, and provide it with the sacredness and agency that was required for it to work.

Other powerful agents were involved indirectly in the process, starting with the rulers of México-Tenochtitlan, who decided to commission the work, and the elites of the other *altépetl* who were convinced, or cajoled, to provide the necessary manpower, and including perhaps the gods and other supernatural beings who blessed and facilitated the process.

2 A powerful stone

Other key actors in these networks were the rocks themselves. We can assume that in the case of the monuments we are studying, the stones must have acquiesced and collaborated in the transformations they were subjected to and which provided them with an increasing degree of agency. This enhanced agency would be fundamental for the performance of the functions they were meant to carry out once they were carved and placed in their intended locations.

Therefore, the process of carving the sculpture involved not only a material transformation as they were given their final shapes, and their surfaces were inscribed with meaningful icons and writing, but also a series of ontological change. It should be understood as the creation, or fabrication, of a new kind of being, or agent, that would be endowed with very specific abilities and powers.

Following Gell's useful distinction we can assume that the stones had only "secondary" agency, that is, that their ability to act purposefully and to communicate with other agents was not a primary property, but was provided to them by the deliberate acts of the human agents that produced them (Gell, 1998: 17). The story of the failed *temalácatl* describes how, by dressing a stone with the paper attire of the god Tlaloc, covering it with the blood of sacrificed fowl and humans, singing and jesting in front of it, the artists, the priests, musicians and jugglers initiated this transformation. Using rich ethnographic data not available in this instance, Gell describes each stage of the complex artistic and ritual procedures required to create the sentient and acting objects he refers to as "idols" (Gell, 1998: 96-154), and we can assume that a similar protracted process was carried out with the Mexica monuments up to their final placement.

The story reproduced by Durán also proves that the secondary agency acquired by the stones was strong enough to thwart the plans of the humans if they so decided.

3 A large quantity of resources and knowledge

The networks built around the stones required the mobilization of a vast amount of material and intellectual resources, starting with the provisions needed to sustain the numerous contingents of carriers and workmen, and the tools, logs and cords used to carve the stone and pull it along to its final destination. Also fundamental was the deployment of specialized knowledges. Transporting such a heavy object required a very complex coordination of force and skill, and the story of the reluctant stone informs us that the Mexica called on the different abilities of their tributaries: some were stronger, some were more resilient, some, perhaps, better organized. The artists, the priests and jugglers, had to use their different specialized knowledges to transform the stone and awaken its secondary agency, and to persuade it to participate in the network. Also remarkable was the skill of the carvers that covered their surfaces with beautiful images and signs, according to a very precise program, and using only stone tools.

This vast network of knowledge must also have extended beyond those directly involved, to include the ruling councils of the Mexica, which decided when to build the stone and for what specific purposes, the diplomats that negotiated the participation of the tributaries in this huge enterprise, the priests and calendar experts that must have determined the most appropriate days to carry out the enterprise and enrolled the help of the deities.

4 The network became permanent

The large and complex networks created to produce the monuments did not cease to operate once they were finished and placed in their intended site, on and around the Templo Mayor of México – Tenochtitlan. Indeed, the objective of the whole undertaking was to create a durable anchor, a visible center, even a living heart for a vast, powerful and durable net of relations, one that would link the Mexica and other peoples in their world, the deities and other beings, the different levels of the cosmos, the past, the present and the future.

After their creation, the stones became loci for what has traditionally been defined as ritual activities: offerings, sacrifices, propitiations, acts of petition etc. They were also part of what have been regarded as political ceremonies involving the Mexica, their allies, their subjects and even their enemies. Many have argued that they were sacred images; others, that they were supposed to be exhibited and admired as artistic work; finally, others have proposed that they were meant to work as pieces of political propaganda.

5 Machines

My contention is that the role of the monuments in their respective networks went well beyond the functions we usually attribute to works of art and propaganda, or even to religious objects. Specialists have proposed that religious images in Mesoamerica were more than icons, or symbolic representations of the deities, but worked also as *ixiptla*, representatives or sacred skins that became vessels for the embodiment of gods in the world (Gruzinski, 1994: 60; Carreón, 2014; Bassett, 2015). *Ixiptla* could be made of stone, of grains and paper, but there were also living human *ixiptla* (Nava, 2013).

While the Coatlicue was very likely intended to work as an *ixiptla* of the various divine entities it represented, I would argue that its function extended beyond embodying them; as did that of the other two monuments. The long laborious process that gave them their particular shape and decoration, the magnitude of the network mobilized by their huge size, the privileged locations in which they were placed, conferred on them a powerful secondary agency that allowed them to collaborate with and strengthen the human and divine agents that interacted with them, but also to transform them.

In this sense, the monuments were very much like the complex devices we call machines. They were meant to accomplish a set of specific tasks, and thus designed and shaped to that purpose. They were valued not only for their “beauty”, or “meaning”, but also for their “efficacy” and their “outputs”. I have placed these concepts in quotation marks because even in our modern society they are not always easy to distinguish. We frequently attribute an aesthetic value to the mechanic and electronic tools we employ, and interpret the various cultural meanings they can transmit within our social systems of hierarchy and taste (Bourdieu, 1979). As Gell argued with humor, we also attribute a fair amount of secondary agency to our machines: we interact with them as if they had personality, intentions and will, even though we never doubt that they are inanimate objects manufactured by humans (Gell, 1998: 17).

In the remainder of this article I shall strive to demonstrate that the three monuments were akin to machines because their shape and scale, their decoration and their materiality, produced what the Mexica regarded as a direct effect on the reality of the world, and also establishing and maintaining effective relations with the different agents that interacted with them. Also, as machines, they worked because they anchored a set of relations between humans, deities and the world around them.

More specifically, I propose that the stones were produced to shape specific “chronotopes”. This category, meaning literally “time-space”, was developed by relativist physics and adapted by Mikhail Bakhtin to refer to the meaningful

configurations and representations of temporality and spatiality constructed in different social and cultural realms, defining narrative genres, but also social institutions. This concept stresses foremost the intrinsic link between space and time, which cannot be experienced without reference to the other; it also signals the meaningful nature of both dimensions for the actions of humans, divinities and other agents, which are always embedded in a particular chronotope; conversely, it emphasizes the fact that time and space are not merely empty, external coordinates for these actions, but are actively shaped by them (Bakhtin, 1981). Indeed, the Mexica engaged in active world-making, through ritual and technical actions that allowed them to configure and maintain different organizations of time and space, which they regarded as fundamental for the continued existence of the cosmos (Navarrete, 2000; 2004). So, these three monuments were manufactured to represent distinct and specific chronotopes, but also to help shape them and maintain their orderly flow, and the corresponding relations between human beings, deities and other beings (Navarrete, 2016).

THE PIEDRA DEL SOL

As we have seen, the most striking physical feature of this monument is its shallowness. The 18:1 ratio between its circumference and its height creates a sensation of flatness, even of bidimensionality. Technically, we may even surmise that the difficulty of carving such a flat, wide disc could have been the cause of the apparent accident that fractured the rock and prevented the carvers from fully disengaging the carved cylinder from it.

The stone is adorned following a strictly concentric organization that creates an implicit hierarchy. The identity of the dominant figure in its center has been the subject of intense debate. Hermann Beyer, and many others after him, have proposed that the face must belong to Tonatiuh, the deity of the sun as it moves through heaven during the day, since it has key features of the iconography of solar figures in Mesoamerica, such as the “glasses” around his eyes and the horizontal turquoise bar inserted through his nose (Beyer, 1921). However, other authors have proposed the skeletal mouth without lips and the tongue in the shape of a sacrificial knife (*técpatl*) identify the figure as *Yohualteuchtli*, the god of the nocturnal sun as it travels through the underworld (Klein, 1978), or the earth deity *Tlaltecuhli* (Navarrete & Heyden, 1975). In favor of the identification with the divinities of the earth they point out that the name of the current sun is 4-Ollin (4-movement), since it is expected to be destroyed by an earthquake on that day. Also, the pair of claws holding human hearts to the right and left of the face are typical of the fierce earthly deities, since they have five fingers, corresponding to a mammal such as an ocellotl or jaguar, and not the four talons of an eagle, the

animal commonly associated with the heavens and the sun. Graulich has proposed that it could also be the god Xochipilli, the afternoon sun, a false star that combines the identities of the diurnal and nocturnal suns (Graulich, 1992).

Four year cartouches around this figure depict the other four suns that illuminated the earth apart from the present one, each of them named after the date of its destruction. Together the five create the logogram for Ollin, movement, the name of the current sun.

A circle around the central logogram represents the 20 calendar days of the tonalpohualli (count of the days), the basic calendar cycle of Mesoamerican time reckoning (Díaz, 2013). Around it, a larger circle depicts solar motifs, *quincunces* as well as glyphs of precious objects and blood. It is crowned by eight triangular figures that represent solar rays. On the outer edge of the monument we find two long Xiuhcoatl, or fiery serpents, whose heads meet at the “lower” extreme, with two figures emerging from their wide-open mouths. In the other extreme, where their tails meet is carved the sign 13-Acatl (Reed), which corresponds to the creation of the current sun and also, perhaps, to the date of the dedication or manufacturing of the monument, equivalent to 1479, under the rule of Axayácatl (Matos, 2009: 279). Finally, the shallow side of the stone is carved with star symbols representing the night sky, the realm of Yohualtecuhtli, the deity of the nocturnal sun.

Graulich proposed that this figure and the rest of the monument combined the diverse, even contradictory facets, states and beings of the sun, diurnal and nocturnal, terrestrial and celestial, as well as the plural deities associated with it:

We can conclude that the Piedra del sol represents this star in an exhaustive manner, since as an image of the deity it needed to be efficacious and functional. The Sun appears as a deity in itself and as the maker of the days and their parts — morning, midday and afternoon —, the years, the Suns and the ages of the world. It stresses the idea of the fifth sun as the synthesis of the previous ones. The star is the sun of noon, the sun of the union of the opposites, and therefore his face is partly solar and partly tellurical and partly fleshless bone. Meanwhile the sun beams in the outer disk are alternated with green stones of Tlaloc. (Graulich, 1992: 295)

My proposal is that the iconography of the monument was so exhaustive because its function was to assemble, organize and control all these different ontological, spatial and temporal aspects.

For this purpose, the flatness of the stone was fundamental, since it was a representation of the horizontality of the tlaltípac: thus the extreme of the stone we see as the “top” would have been oriented towards the East, or sunrise and the

“bottom” to the West (Graulich, 1992: 294). In this way the monument flattened the vertical movements and transformations of the sun through the heavens and the underworld, from Tonatiuh into Yohualteuhctli and back again, anchoring them to its surface and to that of the earth. This was not only an artistic strategy, motivated by the need to represent in two dimensions what actually took place in three, but must also be understood in relation to the ritual functions of the stone. Perhaps it allowed the human sacrifices carried out over this “table” to reach the three levels of the cosmos and exert an effective influence on them.

The Piedra del sol depicted exhaustively the chronotope of the Sun and was most likely built to shape it effectively and to help keep functioning. According to the Nahuatl cosmogonical narratives collected in the *Historia de los mexicanos por sus pinturas* (Historia de los mexicanos por sus pinturas, 2002) and the Florentine Codex (Sahagún 1950-70: 7, 3-8), this particular configuration of space-time was constructed with the creation of the sun and the beginning of its movement in the heavens, at the beginning of the current cosmic era. It was defined by the different cycles of solar movement as observed from the earth, through heaven during the day and through the underworld during the night. It was organized and represented by the two counts of the Mexica calendar, the *tonalpohualli* and the *xiuhpohualli*, two instruments that helped observing and predicting its regularities and its constant transformations. It was also finite since it was also expected to end catastrophically because of an earthquake, as indicated by its calendar name 4-Ollin (4 movement).

The relation between the current Sun and the other ones that had existed and had been destroyed was also a central theme of the monument. The 4-Ollin date sign is beautifully composed by the central face of the solar deities and the cartouches containing the final dates of the four other suns, that also defined the cataclysm that ended each of them: 4-ehecatl (wind), 4-quiahuitl (rain), 4-atl (water) and 4-océlotl (tiger). Several authors have proposed that the Mexica added their own fifth sun to the traditional narratives that mentioned only four (Graulich, 1982: 77-82; López, 1992). We can surmise that one function of this monument was to literally set on stone the existence of the new Mexica sun and to assert its centrality and supremacy in relation to the others. This would explain the primacy which accorded the date 13-Acatl (13 reed), placed on the eastern (now top) side of the monument, and associated with the creation of the current sun.

The monument also depicted and perhaps embodied the sun as the source of *tonalli*, that is the vital luminous and warm force that flowed between different cosmic levels and was shared by humans, deities and other beings, following the intricate pattern of the calendars, determining their identity and their destiny (López Austin, 1980: 223-252). Similarly, the long serpents that circle the outer edge of the disc are *xiuhcoatl*, fire serpents, a warlike manifestation of the power

of the sun, and the weapon of choice of Huitzilopochtli, the patron god of the Mexica. This appears to be the only allusion to warfare in the whole monument. There are also *chalchihuitl*, green stones, commonly associated with water and earth deities. This could be part of the effort to represent all the aspects of the sun in its different states of being, including those linked to the underworld and to death.

The organizing principle of this orderly synthesis of all the ontological aspects of the sun and its chronotope, was to construct centrality, and we can assume that this was also the main function of the monument. Thus, it organized these disparate elements according to a strictly concentric pattern around the physical center of the stone, occupied by the face of the diurnal/nocturnal/telluric sun, also a synthesis of the three vertical cosmic levels: heaven, underworld and *tlaltípac*. This centrality should have been activated by the rituals carried out around and on top of this table for sacrifices, when the heavens, the underworld and the *tlaltípac* were flattened and concentrated in the Mexica ritual center. Finally, it conflated the different chronotopes of the suns under the aegis of the current, or new one. Hence, the stone could be said to extend the powers of the Mexica, normally confined to the surface of the earth, and to the current sun, to the other cosmic levels and solar epochs. It also established and maintained the cosmic centrality of the Templo Mayor, and of México-Tenochtitlan, as the places around which the horizontal and vertical axes of the cosmos actually revolved.

PIEDRA DE TÍZOC

The Piedra de Tízoc was a *temalácatl*, or round spindle stone, and was intended to represent and to give form to the space-time associated with the Mexica “empire”, the Imperial chronotope. This particular configuration of space-time was centered on the Templo Mayor and it identified space with the expansion of the Mexica empire; it measured time through the reigns of the Mexica *tlatoque*, or rulers, and through the succession of conquests carried out by them, their god Huitzilopochtli, and their armies. Therefore, the iconographic features of the monument are similar to those contained in the historical accounts of this period registered in the codices, or pictographic books (Navarrete, 2011).

Its lateral face is decorated with 15 couples of nearly identical warriors: one figure represents the Mexica and is always shown holding the hair of a kneeling enemy captive, whose origin is identified by a toponym or ethnonym. This was a well-established pictographic convention for representing military conquest. The codices also depicted the names of each successive *tlatoani*, alongside his conquests. This monument, however, only includes the name of Tízoc, even though most of the conquests it describes were not achieved during his brief reign. However, two key features of the codices are lacking: the depictions of the

Templo Mayor of México-Tenochtitlan and its successive enlargements; as well as the year signs that mark the passage of time.

So, we can propose that the Piedra de Tízoc presents a simplified version of the Imperial chronotope, one that was related to the functions it was meant to carry out. As a *temalácatl*, this monument was intended to represent and to support one key feature of the Imperial chronotope: the expansion of the dominions of the Mexica through the accumulation of conquests, riches, and sacrifices that kept their empire and its space-time working. As we shall see, this unceasing increase in size was also supposed to ensure the continuation of the solar chronotope as a whole. So important were these monuments, that we know of at least three: a smaller one commissioned by Moteuhczoma Ilhuicamina in the mid-15th century (known as the Piedra del Ex-Arzobispado) which depicts 11 conquests (Solís, 1992); this one, carved a few decades later, which depicts 15; and the one that Moteuhczoma Xocoyotzin commissioned but which refused to be transported to Mexico-Tenochtitlan, which most certainly would have been larger and included more conquests. Indeed, the increasing size of the monuments themselves was a very explicit representation of the Imperial expansion of the Mexica. To understand how the monument could contribute to the continuous expansion of the empire and its chronotope, we must take into account that its name, *temalácatl*, stone spindle, implied a rotational movement. Chimalpain, a Náhuatl-speaking historian from the early 17th century describes the working of the *xiuhtlapohualli*, the 52-year count of the Mesoamerican calendar, precisely as the spinning of such a stone:

When they counted the years and they were complete they renewed them, made them start anew, just like in a *temalácatl* they made them turn around, made them return in their papers to count the years; from fifty two to fifty two years they renewed the count of the years, with each turn of the spindle (Chimalpain, 2003: 33; my translation into English).

Thus, we can propose that the round shape of the stone represented and shaped time as a spinning, ever recurring count, one in which repetition takes primacy over linearity and succession. However, the fact that the Piedra de Tízoc contains no dates would seem to belie calendrical association. In order to understand this absence, we should examine the ritual uses of the monument.

Both Durán (1995: 225-229) and Alvarado Tezozómoc (1997: 215-228, 239-240), a Mexica historian heir to the historical traditions of the *tlatoque* of that city, assert that the *temalácatl* were used in the so-called gladiatory sacrifices during the feast of *Tlacaxipehualiztli*, Flaying of people. In this ritual, one of the most distinguished captive foreign warriors was tied to this rock, given mock weapons to engage in an uneven combat against fully armed Mexica soldiers. Once defeated, the captive was sacrificed and flayed, and his skin was used for very complex ceremo-

nies (Clendinnen, 1985: 69-72). These ritual combats were grand occasions and it was customary for the Mexica tlatoani to invite foreign dignitaries from conquered lands to witness them, sometimes even the rulers of lands that had not been conquered yet, but were already considered future targets of imperial expansion.

The ritual use of the *temalácatl* established a direct link between the conquests of the past, depicted on the side of the stone, and the rituals of the present, since the warriors were captives from polities that had already been subjugated by the Mexica. Indeed, Townsend and Umberger have proposed that the figures on the monument could be read as a program for the realization of the ritual battles around the stone (Townsend, 1979: 47). We can posit that the latter reenacted, even reactualized in the present, the combats that had taken place in the past. In that sense it was not so far-fetched, or mendacious for Tízoc to associate his name with the victories achieved by his predecessors, since he intended to actualize them through ritual (Umberger, 1998: 248-249).

Ritually, the monument also established a link with the upcoming conquests of the Mexicas. Durán and Tezozómoc inform us that the Mexica rulers ordered ambitious military campaigns in order to capture enemy warriors that would be sacrificed in the dedication of their *temalácatl*. Similarly, the prospective subjects of their expansion were invited to witness these ceremonies, and to get acquainted with their impending destiny.

In this sense, the *temalácatl* eliminated the temporal distance between the conquests of the past, the present and the future. They were integrated into a single movement of expansion through accumulation: ever more Mexica victories, ever more sacrificial combats, ever larger stones to depict and accompany them. For this spinning, cumulative time, dates were not important, since the aim was to bridge the time gap between events in a continuous flux of combat and sacrifice. The round shape and the large dimensions of the stone embodied this continuity by representing and shaping a recurrent time.

Spatially, the Piedra de Tízoc is firmly anchored on the *tłaltícpac*, the surface of the earth. The vertical face of the monument, where the couples of warriors are displayed, has star signs on top, representing the heavens, and the maws of *Tlaltecuhli* on the bottom, representing the underworld. Thus, the military victories of the Mexica are explicitly located in this cosmic level. This is true even though the top of the stone is carved with a solar disc, not unlike that of the Piedra del Sol, but much simpler since it only depicts its rays. At its center lies a basin, apparently meant to receive the blood of the sacrificial victims. We can propose that in its function as *cuauhxicalli*, eagle receptacle, or container for sacrificial blood (López Austin, 2009: 463-467), the monument established a direct, functional link between the *tłaltícpac*, the realm where the human agency of the Mexica was deployed and where the sacrifices were made, and the sun who was fed by them.

In this way, the Piedra de Tízoc helped shape a chronotope that was markedly different from that of the Piedra del Sol, since its time was not defined and measured by the calendar and its regularities; its space was also more strictly confined to the *tlaltícpac*, though it also sought to influence the movements of the sun in other cosmic levels. Furthermore, this chronotope was shaped entirely by the actions of the Mexica in collaboration with their patron god: time flowed and accumulated only as a result of their military campaigns and their victories, and also of the sacrifices they carried out; space was exclusively defined by their successful military expansion and the constant flow of captives towards the center of the cosmos in Mexico-Tenochtitlan.

This primacy of human agency could also explain the ambiguous identity of the figures representing the Mexica depicted on its vertical face, a subject much debated. They are anthropomorphic and appear to represent a generic Mexica warrior with traditional Toltec attire, but also have the severed foot of the gods Huitzilopochtli and Tezcatlipoca (Umberger, 1998: 243), and the headdress of Xiuhtecuhtli (Olivier, 1997: 91-93); one of them is identified with the name glyph of Tízoc, which would suggest that all of them are representations of the ruler, but we know that he did not actually carry out all the conquests depicted on the stone (Wicke, 1976). My contention is that the figures were actually meant to be all these different things at once: gods, humans, royals, warriors. Victory was the product of the successful combination of the agency of the Mexica ruler and of his people, the bravery of the human warriors and the strength of Huitzilopochtli. This human and divine military power of the Mexica was also confirmed and strengthened by the bravery displayed by their enemies, both in the battlefield, as carved on the stone, and during the sacrificial combats carried out around the monument (Fujigaki, 2015: 187-190).

We can propose that the function of this monument was to work as a huge cosmical spindle that entwined all these forces, divine and human, royal and plebeian, military and ritual, Mexica and foreign, into a continuous, uninterrupted accumulation of time and space, one that would not be interrupted as long as the Imperial chronotope functioned. In this way the monument helped create and shape a very earthly and human kind of time and space.² Its chronotope stands in sharp contrast with the Piedra del Sol, which depicted and shaped the cosmos as a symmetrical, self-working mechanism that revolved around the movements and transformation of the sun, punctuated by the calendar, and in which human agency played only a marginal role.

This Imperial chronotope of the Piedra de Tízoc, however, was also intimately linked to the cosmic chronotope of the Sun. A key part of the ideology of the Mexica State was its claim to be responsible for keeping alive the Sun and its chronotope, and the identification between the fate of the empire and that of the current

2 This configuration is similar to Viveiros de Castro's description of the way in which warfare and cannibalism created the time and the historical memory of the Tupinamba (Viveiros de Castro, 2002: 224-228).

solar epoch as a whole (Caso, 1946: 103; León-Portilla, 1983: 249-257). From my point of view, this operation involved a shift in magnitude in two opposite directions: through monuments such as the Piedra del Sol and the Piedra de Tízoc, the Mexica sought to expand the symbolic and effective reach of their human, ritual, military and political activities to the whole cosmos; at the same time, these also helped to flatten, and reduce the scale of this universe to that of the earthly political and military network of domination of the Mexicas. In this way, the *tlaltípac*, the surface of the earth, became the *cemanáhuac tenochca tlalpan*, literally the “unity surrounded by water of the tenochca on earth”, a cosmic whole that was quite literally identified with the dominions of the Mexica and their allies.

However, the Mexica were keenly aware that their Imperial chronotope was finite, both in time and in space, just like the solar chronotope. They knew that one day their turn to rule over the world would end, and the whole imperial machine they had built would be destroyed. This would be both a historical cataclysm, concerning them as a people, their city and their power, and also a cosmic one, encompassing the current sun and its whole cosmos.

COATLICUE

The Piedra del Sol and the Piedra de Tízoc share a circular shape, and are carved with complex geometrical compositions of different parts and beings that stand in a clear relation to each other. Both monuments can be easily recognized as cosmograms that aim to represent and maintain order and regularity in the world and its chronotopes. Coatlicue, in stark contrast, is a highly idiosyncratic representation of an anthropomorphic being and its form is organic not geometric. Though art historians have analyzed the complex combinations of symmetry that organize its different parts (Fernández, 1972: 146), the first impression that it provokes is that of a monstrous creature, a chimera made of different beings.

The monument is a depiction of a female being, clearly recognizable within Mesoamerican and Aztec conventions by its exposed breasts and its *cueitl*, or skirt, in this case a weave of entwined serpents. Her head is made of two snakes that curl up from its neck and meet on top, creating a symmetrical double visage. Her arms are feline paws and her feet are eagle claws; there are animal maws on its elbows. Furthermore, she wears a collar with human hearts and severed heads and a belt with a skull in front.

One interpretation of this complex assemblage of beings is that they represent a dismembered sacrificial victim: the serpents sprouting from its severed neck are also jets of blood, her hands and feet have been substituted by animal claws. The ferocious maws on her elbows and knees have led several authors to identify the figure with Tlaltecuhli, the earth deity that was dismembered at

the beginning of time in order to separate heaven from earth (Boone, 1999: 192). As such, it can be regarded as a defeated enemy of the victorious Sun which currently rules the cosmos (Graulich, 1991). In turn, the prominent ophidian features, and the serpent skirt, have bolstered the association with Coatlicue (her skirt is made of serpents), the earth goddess and mother of Huitzilopochtli. Other iconographic features have led different authors to associate her with other feminine earthly deities, or even with the god of death, Mictlantecuhtli, though it has unmistakable feminine features (López Luján, 2009). More convincing is the identification proposed by Boone with a *tzitzímitl*, a monstrous celestial creature that descended to earth to devour children whenever the sun was obscured by an eclipse, and who would tear apart and destroy the whole of humanity at the end of the current solar era (Boone, 1999: 197-198).

As in the case of the other two monuments, I would argue that the ambiguity in the identity of this figure was deliberate, since it was meant to represent a being in ritual transformation, as a sacrificial offering, or someone who was the sum of different human, divine and animal creatures. Therefore, we can interpret it as the conjunction of previous and future states of being, and with different cosmic levels. As an earth goddess, she belonged to the underworld, and to the distant past, before the creation of the current solar chronotope. She embodied the chaos that needed to be destroyed so that the solar order could emerge, and the sacrifices that enabled the creation of the space-time inhabited by the current sun, and by the Mexica. The monument would reproduce and reenact this defeat, to celebrate and confirm the supremacy of the solar chronotope. In contrast, as a *tzitzímitl*, the monument belonged to the heavens, from which these terrible beings would descend at the end of the current era. It established a link with the future apocalyptic time after the solar chronotope and the Imperial chronotope would collapse. Hence, it anticipated the inevitable victory by the forces of destruction that lurked beyond the cosmos that was so painstakingly maintained by the Mexica. In this case, we can propose that the magnitude of this monument was meant to enable the Mexica and their divine allies to control these alien powers, so that its function would not be celebratory or commemorative, but rather preventive and apotropaic.

By embodying the identities of the earth goddess and the celestial *tzitzimime*, by representing the victories of the past and the inevitable defeat of the future, the monument materialized in the Templo Mayor of Mexico-Tenochtitlan, the center of the solar and Imperial chronotopes, a third configuration of time and space, the chronotope of the mountain. This was the immanent and never-ending space-time that existed outside, and thus before, alongside, and after, the ephemeral constructed chronotopes of the different suns and their inhabitants. In temporal relation to them it belonged at the same time the past,

the present and the future; spatially, it surrounded them from the underworld below and from the heavens above, dimensions that were intimately related in their foreignness to the *tłaltípac* (Mikulska, 2015).

In the Mexica narratives that relate the birth of the god Huitzilopochtli from the belly of the goddess Coatlicue (Sahagún, 1950-70: vol. 3, 1-5) and also the fate of an embassy sent by the Mexica ruler Moteuhczoma Ilhuicamina to Aztlan, the original home of his people, with the aim of bringing presents from the god to his long forgotten mother (Durán, 1995: 268-278), this space-time was presented as a place where time did not flow and where nothing happened. The creatures that inhabited it were neither gods nor humans, since the distinction between these types of beings emerged only with the birth of the sun, and they did not age or die. Coatlicue in particular was described as being horrifyingly ugly as a result of her perpetual mourning for her lost son and thus appeared to be a suffering victim; at the same time, however, she foretold that Huitzilopochtli would return by her side after his inevitable defeat and ruin, which a certainty that turned her into a threat to the power of the Mexica (Navarrete, 2016).

Since it lay beyond the *tłaltípac*, and thus the space-time where human beings were capable of exercising their agency, this chronotope was inaccessible to humans in their ordinary states of being, and with their ordinary bodies. Only *nahuales* (Martínez, 2011), that is, people who were capable of acquiring other corporalities, could reach it, and many of them were killed in the attempt.

According to Boone (Boone, 1999: 204), López Austin and López Luján (López Austin, 2009: 459-461), this statue and three other monuments depicting similar feminine horrific beings were placed on top of the main temple of México-Tenochtitlan, in the center of the Mexica cosmos, surrounding the sanctuary of Huitzilopochtli. The former argues that they were located there to commemorate the victory of the sun over the deities of the earth, the latter, that they were used as symbolic cosmic trees that held up the heavens.

My proposal is that these were meant to embody the external chronotope that engulfed the limited portion of the cosmos that was actually under Mexica control and that would inevitably overwhelm it. Their presence in the innermost sanctum of Templo Mayor allowed the Mexica priests to confirm the transient superiority of the solar order, and its chronotope, over the chronotope of the mountain; they could also be used to placate and control the insatiable *tzitzimime* that would devour mankind in the future.

These functions were potentiated by the horrifying aspect of the Coatlicue. As a mutilated victim, or an emerging being, she was meant to be uncanny, to produce horror and fear, since she embodied forces and creatures whose existence denied the order that allowed the human and divine beings to live (Graulich, 1991: 386).

The horror of the Coatlicue proves that the Mexica were keenly aware of the

finite nature of the chronotopes within which they existed, but its presence in the heart of the Mexica sanctuary also demonstrates that they were not truly fatalistic, that they were willing to employ all the capabilities of their political and religious agency, and that of their deities, to try to control the forces that would destroy them one day.

CONCLUSION

The aesthetics and functionality of the Piedra del Sol, the Piedra de Tízoc and the Coatlicue were at the same time different, even opposed, and also complementary. All three embodied key aspects of the plural and contradictory cosmic order, or rather orders, that were maintained in motion by Mexica political, technical and ritual action. The first manifested the regular movements and transformations of the Sun through the heavens, the surface of the earth and the underworld, according to the rules of the solar chronotope. The second potentiated the power of the conquests and ritual sacrifices of the Mexica as the main dynamic forces for the accumulation of time and the organization of space within the Imperial chronotope. Both monuments were meant to confirm the centrality of México-Tenochtitlan, and of the agency of the Mexica, in the workings of these complementary cosmic orders.

As such it is logical to consider them as “propaganda,” following the proposals by Townsend (1979) and Marcus (1992), since they were visually and physically compelling assertions of the power of the Mexica State and its intimate relations with the cosmic order. I have striven to demonstrate, however, that their function went beyond stating an ideological, or even religious, message: they were intended to actually help produce and maintain the cosmic order they represented; their shape and magnitude guaranteed that the rituals and sacrifices carried out around and on top of both would keep their respective chronotopes running in a literal way, not only metaphorically.

Formally and functionally, Coatlicue represents their opposite: the chronotope of the mountain that had to be destroyed, or at least sacrificed, in order to create them, and that would unavoidably overwhelm them in the future. Thus, it embodied cosmic “disorder,” or rather the forces that lay outside the reach of the current cosmic order. As such it contributed to another key aspect of the agency that the Mexica exerted in their plural cosmic order: they acted not only as the guarantors of the continuity of the solar chronotope and as the main producers of the accumulation of time, riches and power in the Imperial one: they also sought to confront and restrain the forces and beings that existed beyond it.

This article has argued that the magnitude of the monuments was instrumental in accomplishing their different functions and enhancing the agency of the Mexica.

Only because of its sheer size could the Piedra del Sol accomplish the “flattening” of the vertical movements and transformations of the sun through the cosmic levels, thus making them present in the tlaltícpac where they could be subject to human influence through rituals and sacrifice. The cosmic centrality of the new Mexica sun, 4-Ollin, could only be established symbolically and also physically through the spectacular display of resources and material that placed it in the middle of the stone and of the cosmos. Similarly, only a large and heavy temalácatl was able to make time spin, conflating the past, the present and the future in a single cumulative thread of victories, sacrifices and even more victories and sacrifices, linking the Mexica and their enemies and expanding time and space. Finally, the size and horror of the Coatlicue were the only way to properly embody the power and the menace of the forces looming beyond the solar and Imperial chronotopes, and also to keep them at bay, to subject them, however fleetingly, to the power of the Mexica and of their gods.

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CONTRIBUTION BY AUTHOR: Not applicable.

REFERÊNCIAS

HISTORIA DE LOS MEXICANOS POR SUS PINTURAS

2002 “Historia de los mexicanos por sus pinturas”, en *Mitos e historias de los antiguos nahuas*, ed. R. Tena CNCA, México. , pp. 15-111,

BAKHTIN, Mikhail

1981 "Forms of Time and of the Chronotope in the Novel. Notes towards a Historical Poetics", In *The Dialogical Imagination. Four Essays by M. M. Bakhtin*, M. Bajtin. University of Texas Press, Austin. pp. 84-258.

BASSETT, Molly H.

2015 *The Fate of Earthly Things. Aztec Gods and God-Bodies*. University of Texas Press, Austin.

BEYER, Herman

1921 *El llamado "Calendario Azteca": descripción e interpretación del cuauhxicalli de la "Casa de las Águilas"*. Verband deutscher Angehöriger, México.

BOONE, Elizabeth

1999 "The 'Coatlicues' at the Templo Mayor." *Ancient Mesoamerica* (10):189-206.

BOURDIEU, Pierre

1979 *La distinction. Critique sociale du jugement*. Édition de Minuit, París.

CARREÓN, Emilie

2014 "Un giro alrededor del ixiptla", In: *XXXVI Coloquio Internacional de Historia del Arte. Los estatutos de la imagen, c*, eds. L. Báez y E. Carreón,. Universidad Nacional Autónoma de México-Instituto de Investigaciones Estéticas, México: 247-274

CASO, Alfonso

1946 "El águila y el nopal." *Memorias de la Academia Mexicana de la Historia* 5(2): 93-104.

CHIMALPAIN, Domingo

2003 *Primera, segunda, cuarta, quinta y sexta relaciones de las Différentes Histoires Originales*. Instituto de Investigaciones Históricas-Universidad Nacional Autónoma de México, México.

CLENDINNEN, Inga

1985 "The Cost of Courage in Aztec Society." *Past and Present*, 107:44-89.

DÍAZ, Ana

- 2013 “Tlapohualli, la cuenta de las cosas. Reflexiones en torno a la reconstrucción de los calendarios nahuas.” *Estudios de Cultura Náhuatl* 46:159-197.

DURÁN, Diego

- 1995 *Historia de las Indias de Nueva España e Islas de Tierra Firme*. Consejo Nacional para la Cultura y las Artes, (Cien de México), México.
1967 *Historia de las Indias de Nueva España*. Editorial Porrúa (Biblioteca Porrúa 36), México.

FERNÁNDEZ, Justino

- 1972 *Estética del arte mexicano. Coatlicue, el Retablo de los Reyes, El Hombre*. Instituto de Investigaciones Estéticas-Universidad Nacional Autónoma de México, México.

FUJIGAKI, Alejandro

- 2015 *La disolución de la muerte y el sacrificio. Contrastes de las máquinas de transformaciones y mediaciones de los rarámuri y los mexicas*. Universidad Nacional Autónoma de México, México.

GELL, Alfred

- 1998 *Art and Agency. An Anthropological Theory*. Clarendon Press, Oxford.

GRAULICH, Michel

- 1992 “La Piedra del Sol”, en *Azteca-Mexica*, ed. J. Alcina. Sociedad Estatal Quinto Centenario, Madrid: 291-295
1991 “Les grandes statues aztèques dites de Coatlicue et de Yollotlicue”, In *Cultures et sociétés, Andes et Méso-Amérique: mélanges en hommage à Pierre Duvio*, ed. R. Thiercelin,. Publications de l’Université de Provence, Aix-en-Provence. Pp: 375-419
1982 *Mythes et rituels du Mexique ancien préhispanique*. Académie Royales de Belgique, Bruselas.

GRUZINSKI, Serge

- 1994 *La guerra de las imágenes. De Cristóbal Colón a Blade Runner (1492-2019)*. Fondo de Cultura Económica, México.

HOUSEMAN, Michael; Severi, Carlo

- 1998 *Naven or the Other Self. A Relational Approach to Ritual Action*. Brill, Leiden.

KLEIN, Cecelia

- 1978 "The Identity of the Central Deity on the Aztec Calendar Stone." In: *The Art Bulletin*. 58(1):1-12.

LATOURE, Bruno

- 2005 *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford University Press, Nueva York.
- 1993 *We Have Never Been Modern*. Harvard University Press, Cambridge.

LEÓN-PORTILLA, Miguel

- 1983 *La filosofía náhuatl. Estudiada en sus fuentes*. Universidad Nacional Autónoma de México-Instituto de Investigaciones Históricas (Serie de Cultura Náhuatl, 10), México.

LÓPEZ AUSTIN, Alfredo

- 1980 *Cuerpo humano e ideología. Las concepciones de los antiguos nahuas*. Universidad Nacional Autónoma de México-Instituto de Investigaciones Antropológicas, México.
- 1992 "La religión y la larga duración: Consideraciones para la interpretación del sistema mítico-religioso mesoamericano." *Journal of Latin American Lore*: 53-62.
- 2009 *Monte Sagrado-Templo Mayor*. Universidad Nacional Autónoma de México-Instituto de Investigaciones Antropológicas, Instituto Nacional de Antropología e Historia, México.

LÓPEZ LUJÁN, Leonardo; Fauvet-Berthelot, Marie-France

- 2009a "El arte escultórico de los mexicas y sus vecinos", In *Escultura monumental mexicana*, Matos, Eduardo & López Lujan, Leonardo. Consejo Nacional para la Cultura y las Artes, México. Pp: 71-114

LÓPEZ LUJÁN, Leonardo

- 2009b "La Coatlicue." *Escultura monumental mexicana*, Matos, Eduardo & López Luján, Leonardo. Consejo Nacional para la Cultura y las Artes, México.

MARCUS, Joyce

- 1992 *Mesoamerican Writing Systems: Proganda, myth and history in four ancient civilizations*. Princeton University Press, Princeton.

MARTÍNEZ, Roberto

2011 *El nahualismo*. Instituto de Investigaciones Históricas- Universidad Nacional Autónoma de México, México.

MATOS, Eduardo

2009 “La Piedra del Sol o Calendario Azteca”, In *Escultura monumental mexicana*, Matos E. & López L., Consejo Nacional para la Cultura y las Artes, México. Pp: 231-29

MIKULSKA, Katarzyna

2015 “Los cielos, los rumbos y los números. Aportes sobre la visión nahua del universo”, In Díaz, A. *Cielos e inframundos: una revisión de las cosmologías mesoamericanas*, ed.,. Universidad Nacional Autónoma de México-Instituto de Investigaciones Históricas, México. Pp: 109-174

NAVA, Rosario

2013 “De la Adoración de los Reyes Magos al ixiptla de color negro. Las capacidades de la imagen indígena frente a la imagen renacentista.” *Concinnitas. Revista do Instituto de Arte da UERJ* 01(22):82-110.

NAVARRETE, Carlos; HEYDEN, Doris

1975 “La cara central de la Piedra del Sol: una hipótesis”. *Estudios de Cultura Náhuatl* 11:354-376.

NAVARRETE, Federico

- 2004 “¿Dónde queda el pasado? Reflexiones sobre los cronotopos históricos”, In *El historiador frente a la historia: El Tiempo en Mesoamérica*, (cord.) V. Guedea., Instituto de Investigaciones Históricas- Universidad Nacional Autónoma de México, México. Pp:29-52
- 2016 “Entre a cosmopolítica e a cosmo-história: tempos fabricados e deuses xamãs entre os astecas.” *Revista de Antropologia de São Paulo* 59(2):86-108.
- 2000 “The path from Aztlan to Mexico, on visual narration in Mesoamerican códices.” *Res. Aesthetics and Anthropology* 37:31-48.
- 2011 “Writing, Images, and Time-Space in Aztec Monuments and Books”, In *Their Way of Writing: Scripts, Signs and Pictographies in Pre-Columbian America*, eds. Boone, E. & Urton, G.,. *Dumbarton Oaks Research Library and Collection- Harvard University Press, Cambridge*. Pp: 175-196

NEURATH, Johannes

2013 *La vida de las imágenes. Arte huichol*. Artes de México, México.

OLIVIER, Guilhem

1997 *Moqueries et métamorphoses d'un dieu aztèque. Tezcatlipoca, le «Seigneur au miroir fumant»*. Institut d'Ethnologie, Paris.

SAHAGÚN, Bernardino

1950-70 *The Florentine Codex, General History of the Things of New Spain*, trans. Dibble C. & Anderson A. J.O.. The School of American Research-University of Utah, Santa Fe.

SOLÍS, Felipe

1992 "El temalácatl-cuauhxicalli de Moctezuma Ilhuicamina", In *Azteca-Mexica*, ed. J. Alcina Sociedad Estatal Quinto Centenario, Madrid: 225-232.

TEZOZÓMOC, Hernando Alvarado

1997 *Crónica Mexicana*, eds. G. Díaz y G. Vázquez. Historia 16, Madrid. pages

TOWNSEND, Richard F.

1979 *State and Cosmos in the Art of Tenochtitlan*. Dumbarton Oaks, (Studies in Precolumbian Art & Archaeology, 20), Washington, D.C.

UMBERGER, Emily

1998 "New Blood from an old Stone." *Estudios de Cultura Náhuatl* 28:241-256.

VIVEIROS DE CASTRO, Eduardo

2002 "O mármore e a murta: sobre a inconstância da alma selvagem" In *A inconstância da alma selvagem*, Viveiros de Castro, Eduardo. Cosac & Naify, São Paulo. Pp: 181-264.

WICKE, Charles R.

1976 "Once more around the Tizoc stone: a reconsideration." *Actas del 41 Congreso Internacional de Americanistas* varios: 209-222.

Received on 10 September, 2019. Accepted on 15 October, 2019.