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## The Aztec Temporal Universe

The idea of the universe can be employed interchangeably with cosmos, which alludes to the order of the universe or the order of the world. (*Cem*)*Anahuac* ([entire]"next to the water") or *cemanahuatl* ("continue something on to the end/persevere in something") are Aztec categories for "universe" or "world" in Nahuatl, the language of the Aztecs and the Nahua.<sup>1</sup> Sometimes translated as "place or land surrounded by water", this linguistic evidence signifies that the Aztec had a spatial and philosophical concept of universe. How the universe was experienced by the Aztecs constitute a vast topic.

### The diverse Aztec universe

The Aztecs (a.k.a. Mexica), a Nahuatl-speaking nomadic society, were part of the final Nahua group who migrated around 1100 AD to the Valley of Mexico. The Aztec founded and inhabited the cities of Tenochtitlan and Tlatelolco (today Mexico City) in 1345 AD. A Triple Alliance – comprising the cities Tenochtitlan, Tetzaco and Tlacopan – was established in 1428 AD. The political and military confederation of the Triple Alliance created a hegemonic rule in Mesoamerica. The military advanced Aztecs dominated the Triple Alliance, and their city Tenochtitlan became the supreme capital of a short-lived but a geo-politically expansive empire until the Spanish conquest in 1521 AD.<sup>2</sup>

As with other cultures, the Aztecs conceived the universe in various modes. The structure of the Aztec cosmos consists of different upper- and underworlds, i.e. realms of various levels of the universe.<sup>3</sup> The Templo Mayor of the Aztec capital Tenochtitlan was envisioned as a center of the cosmos and empire.<sup>4</sup> Moreover, the Aztecs identified with various places of origin: Aztlan and Chicomoztoc. These are represented in manuscripts and *mapa*

*mundi*. For instance, cartographic manuscripts from the Cuauhtinchan archive (1525-1565) produced by indigenous peoples of the *Altepetl* (city) of Cuauhtinchan in Puebla, Mexico exemplify *mapa mundi* of not only the Aztec capital but also of the related Nahua.<sup>5</sup>

Cosmology usually speaks to the origins (i.e. *cosmogony*) of both space and time. In this brief essay, we will look into some ways Aztec time was organized in the universe. Aztec calendars emphasize that temporal realities were ritualized.<sup>6</sup> These temporal rituals also mapped out space in various ways as shown especially in the 52-years calendar and the New Fire ceremony. The ritual practices of calendar time are associated with a culture's worldview and the notion of the human condition (cosmology). These ceremonial undertakings are therefore related to the perception of the cosmological past and of the future, of when the earth and the human beings came into existence and of how and when time and the world eventually shall come to completion.

### The 52-years calendar (Calendar Round)

Several of the Mesoamerican calendars consist of series of interlinking cycles. The largest cyclical calendar in Mesoamerica is termed the Calendar Round of 52 vague years. The Calendar Round incorporates a combination or an intersection of two distinct but interlocking calendars, the 260-day calendar and the 365-day calendar, over a period of 18,980 days. The 260-day calendar is composed of twenty-day names (sp. *veintena*) permuted with thirteen-day numbers (sp. *trecena*). Twenty multiplied with thirteen amounts to 260 days. The twenty-day names had a supernatural patron and were associated with natural phenomena.

### The Aztec 260-day calendar (*Tonalpohualli*)<sup>7</sup>

1. Cipactli (caiman/crocodile)
2. Ehecatl (wind)
3. Calli (house)
4. Cuetzpalin (lizard)
5. Coatl (snake)
6. Miquiztli (death)
7. Mazatl (deer)
8. Tochtli (rabbit)

9. Atl (water)
10. Itzcuintli (dog)
11. Ozomahtli (monkey)
12. Malinalli (wild grass)
13. Acatl (reed)
14. Ocelotl (oselot)
15. Cuauhtli (eagle)
16. Cozcacuauhtli (vulture)
17. Ollin (movement)
18. Tecpatl (flintknife)
19. Quiahuitl (rain)
20. Xochitl (flower)

The first day in the 260-day cycle is 1 Cipactli followed by 2 Ehecatl, 3 Calli, 4 Cuetzpallin, 5 Coatl, 6 Miqitzli, 7 Mazatl, 8 Tochtli, 9 Atl, 10 Itzcuintli, 11 Ozomahtli, 12 Malinalli, 13 Acatl, 1 Ocelot, 2 Cuauhtli, 3 Cozcacuauhtli, 4 Ollin, 5 Tecpatl, 6 Quiahuitl, 7 Xochitl, 8 Cipactli, 9 Calli, 10 Cuetzpallin etc. The last day of the 260-day cycle is 13 Xochitl. After 260 combinations, the day 1 Cipactli returns.<sup>8</sup>

The Mesoamerican 365-day calendar, called *Xiuhitl* in Nahuatl, is quite similar to the solar year but reflects instead a "vague" year. The actual length of the solar year incorporates 365.2422 days. The vague year or the traditional Mesoamerican 365-day calendar, without leap days, was a quarter of a day or about six hours short of the solar year. The Mesoamerican 365-day calendar has eighteen time units (sp. *veintena*) of 20 days each. The last and nineteenth *veintena* of the year contains only five days. Eighteen multiplied with twenty plus five amounts to 365 days.

### **The Aztec 365-day calendar (*Xiuhpohualli*)<sup>9</sup>**

1. Izcalli
2. Atlcahualo
3. Tlacaxipehualiztli
4. Tozoxtonli
5. Hueytozotli
6. Toxcatl
7. Etzalcualiztli
8. Tecuilhuitontli
9. Hueytecuilhuitl

10. Tlaxochimaco
11. Xocotlhuetzi
12. Ochpaniztli
13. Teotleco
14. Tepeilhuitl
15. Quecholli
16. Panquetzaliztli
17. Atemoztli
18. Tititl
19. Nemontemi<sup>10</sup>

The first *veintena* is Izcalli. 1 Izcalli continues with 2 Izcalli, 3 Izcalli etc. until 19 Izcalli and the installation of 1 Atlcualo 2 Atlcualo, etc. The last days of the 365-day cycle are 18 Tititl, 19 Tititl, and the five days of Nemontemi, 1 Nemontemi, 2 Nemontemi, 3 Nemontemi and 4 Nemontemi. After 365 days the *veintena* of 1 Izcalli returns.

A permutation of the 260-day and the 365-day cycle form a period of 52 vague years since it will take 18,980 days for a juxtaposed date of the 260-day calendar and the 365-day calendar to be repeated in the Calendar Round. A Calendar Round consists therefore of a 52 x 365 day or a 73 x 260-days cycle (94,900 days or 52 vague years), which can be compared to a European century for many indigenous people in Mesoamerica. According to the Spanish ethnographer-missionary Fray Bernardino de Sahagún (1499-1590), the longest me count of the Aztec was one hundred and four years (*Huehuetiliztli*), which the Nahuatl called a 'century'.<sup>11</sup>

A Calendar Round was completed when the four Year Bearers of the 365-day calendar each had ruled 13 vague years. The Aztecs perceived the 52-year cycle as comprising four 13-year cycles in one great 52-year cycle. The 13 number cycle was repeated four times, generating 52 uniquely named years in a 52-year cycle ( $4 \times 13 = 52$ ), which can be divided into four 13-year quarters. A round circle or calendar wheel of 52 years was divided into four parts. Every part, which represented a cardinal direction, contained thirteen years.<sup>12</sup> The 52-year cycle subdivided into four periods of thirteen year contained the four Year Bearers:

1. Tochtli (Rabbit)
2. Acatl (Reed)
3. Tecpatl (Flint)

#### 4. Calli (House)

The 52-year cycle began with *Ce Tochtli* (1 Rabbit) where the number one proceeded to thirteen for four times (of the four Year Bearers) until the return of same date. The 52-year cycle was divided into the four quarters, *tlapilli*, began respectively with the date of the four Year Bearers, *Ce Tochtli* (1 Rabbit), *Ce Acatl* (1 Reed), *Ce Tecpatl* (1 Flint) and *Ce Calli* (1 House). *Tochtli* (Rabbit) was oriented toward the south, *Acatl* (Reed) to the east, *Tecpatl* (Flint) was associated with the north, and *Calli* (House) with the west. Each cardinal direction was ruled for thirteen years. Hence we got this spatial-temporal order of the 52-year calendar:

1. *Tochtli* (Rabbit) of the south
2. *Acatl* (Reed) of the east
3. *Tecpatl* (Flint) of the north
4. *Calli* (House) of the west

The 52-year calendar had both a historiographical and a prophetic function. It was consequently calculating the historic past and future. The dates of the different 52-year cycles were not distinguished in their endless repeating cycles. The Aztec kept records of all chief incidents like ruler biographies, genealogies, wars, plagues, astrological signs, famines, etc., registered in this way.<sup>13</sup> The 52-year count implied also a historical-prophetic cyclical principle of a repetition, although not an exact reproduction, of like-in-kind events in the years of the same name. H.B. Nicholson has designated this principle as "pattern history".<sup>14</sup> Historical prophecies could hence be integrated in the 52-year count.<sup>15</sup>

#### The 52-year calendar ritual practice of time

The Aztecs celebrated a cardinal fire-ritual called *xiuhmolpilli* ("A binding of the new year") at the end of the 52-year calendar cycle. An ancient fire was replaced by a new one on a sacred mountain within a day's walk of the ceremonial center of Tenochtitlan at the end of the Calendar Round. The last known 52-year ritual of the Aztec empire was held in the year 1507AD (Ome Acatl or 2 Reed) when Moctezuma the Second (1466-1520) was ruler (*Tlatoani*).

The New Fire ceremony of the 52-year calendar cycle was a major ritual

connected to the stability and renewal of Mexican cosmology and politics. After the collapse of the Aztec empire, the 52-year calendar fell into disuse but the agricultural 365-day calendar and 260-day divinatory calendar survived in minor communities (sp. *pueblos*).<sup>16</sup> As we shall now elaborate, this ritual practice of time has implications for our understanding how the Aztecs conceived their distant past and the cosmogony, organization of quadripartite space of the natural world, and eschatological notions of their destiny.

### A symbolic ritual practice of cosmogonic time

There was a general belief in a creation of five world-periods or ‘Suns’ in Aztec religion and philosophy. The majority of the sources designates each world-period with a name, which consists of a date from the 260-day calendar, where the day-name convey the manner in which each Sun or world-epoch would be terminated. The following five world ages or world eras are presented here in a chronological e.g. temporal linear order:

1. Nahui Ocelotl (“4 Jaguar”)
2. Nahui Ehecatl (“4 Wind”)
3. Nahui Quiahuitl (“4 Rain”)
4. Nahui Atl (“4 Water”)
5. Nahui Ollin (“4 Movement”)

The creation of the fifth world is told in a variety of colonial sources, which have been summarized by Miguel León-Portilla, H.B. Nicholson<sup>17</sup> and Wayne Elzey.<sup>18</sup> There are discrepancies in the details of the variant accounts of the Aztec creation story – in part due to the various indigenous informants who came from different communities. We will keep to the adaptation provided by Sahagún, in book III and book VII of *The Florentine Codex*<sup>19</sup>, since the most complete account of the ritual proceedings were presented by him.

In a short passage of book III, ‘The Origin of the Gods’, of *The Florentine Codex* it is declared that the deities gathered in the historical city of Teotihuacan when the world was in darkness. The sun and moon were still to be created. The deities debated who was to carry the burden, *tlamamalli*, which meant who would be sacrificed to become the sun and the moon.<sup>20</sup> Book VII of *The Florentine Codex* expands on the information given in Book III. The deities, who gathered in a counsel in Teotihuacan, said: “Come hither, O gods! Who will carry the burden? Who will take it upon himself

to be the sun, to bring the dawn?"<sup>21</sup>

Two gods, Tecuciztecatl and Nanauatzin, volunteered. They did penance, fasted and sacrificed their own blood, and scattered incense for four days on a hill specially made for these two deities. It is believed that this hill is replicated in the pyramid of the sun and the pyramid of the moon in Teotihuacan.<sup>22</sup> The city of Teotihuacan, an ancient metropolis of Central Mexico not far from Tenochtitlan, was accordingly believed by the Aztecs to be the scene of the creation of the sun and the moon by the deities. It was perhaps comparable with the Mesoamerican archetype mythic city Tollan, "place of reeds", which is celebrated as the home of the culture hero and royal religious specialist Topiltzin Quetzalcoatl.<sup>23</sup> Thereafter: "And then, also, at this time, the fire was laid. Now it burned, there in the hearth. They named the hearth *teotexcalli*".<sup>24</sup>

After the four days, when the penance was over, Tecuciztecatl and Nanauatzin were to become gods (*teutizque*). At midnight, the deities gathered around the hearth, *teotexcalli*, which had burned for four days. Four times Tecuciztecatl tried to throw himself into the flames of the hearth, but he ignominiously failed. Nanauatzin, spurred by the other gods, cast himself into the flames. Tecuciztecatl thereafter followed his example. The other deities sat waiting for the sun and moon to appear. Both the sun, Nanauatzin, and the moon, Tecuciztecatl, arose together.<sup>25</sup>

The 52-year calendar ritual, described above, symbolically reactualized the story of the creation of the sun and the moon thereby triggering both the end of one cosmic era (e.g. Sun or world-period) and the inauguration of the next cosmic era.

### A spatial-temporal ritual of the world

We have seen that time was ritualized, based on the events of creation, in the New Fire rite of the 52-year ritual. Space and time are closely linked in Aztec cosmology. Aztec time cycles and calendars were also related with the four cardinal directions (vertical space) of the world. This quadripartite cosmology was a classification system where a pattern of four divisions were related to colors, winds, deities, *tloques*, games such as *patolli*, *el volador*, the "Venus periods", the four divisions of Tenochtitlan etc.<sup>26</sup> The twenty-day names of the 260-day calendar were oriented to one of the cardinal directions each associated with a color. Page one of the *Codex Fejérváry-Mayer* represents the 260-day calendar oriented to the four directions. The

central Mexican god of fire, Xiuhtecuhtli, stands in the center of the scene in a delineation of time and space.<sup>27</sup> The four-day names Acatl (Reed), Tecpatl (Flint), Calli (House) and Tochtli (Rabbit) were associated with the four cardinal directions. These day names divide the thirteen weeks, or *trecena*, into four groups of 65 days. The *trecenas* were ruled by one of the four-day names, which also are known as the four Year Bearers.<sup>28</sup> The 365-day calendar moved in a yearly counter-clockwise succession where one of the four Year Bearers, each connected with a cardinal direction, ruled the 365-day year. The years and days were consequently spatially oriented.<sup>29</sup>

As noted, the 52-year time calendar count was also correlated with quadripartite space. The Aztecs perceived the 52-year cycle as consisting of four thirteen-year cycles in one great cycle. A Calendar Round was completed when the four Year Bearers of the 365-day calendar each had ruled 13 vague years. 13 number cycles were repeated four times, generating 52 uniquely named years in a 52-year cycle ( $4 \times 13 = 52$ ). A round circle or calendar wheel of 52 years was divided into four parts or four 13-year quarters. Each part represented a cardinal direction. The 52-year cycle was divided into the four quarters, *tlapilli*, which began respectively with Tochtli (Rabbit), Acatl (Reed), Tecpatl (Flint) and Calli (House). Tochtli (Rabbit) was oriented toward the south, Acatl (Reed) to the east, Tecpatl (Flint) was associated with the north and Calli (House) with the west. Hence we got this spatial-temporal order of the 52-year calendar:

1. Tochtli (Rabbit) of the south
2. Acatl (Reed) of the east
3. Tecpatl (Flint) of the north
4. Calli (House) of the west

The 52-year cycle subdivided into four periods of thirteen years, containing the four Year Bearers Tochtli (Rabbit), Acatl (Reed), Tepetatl (Flint) and Calli (House), began with Ce Tochtli (1 Rabbit) and went through the four Year Bearers thirteen times. Matlactli Omeyi Calli (Thirteen House), the sign of the west, was the last sign of the four thirteen day-period.<sup>30</sup> The 52 successive years hence moved through all four cardinal points. Time was transported through these directions (east, north, west and south) in the shape of a spiral.<sup>31</sup>

Space and time of the Calendar Round were intimately intertwined. The

four Year Bearers has reigned thirteen years each when the 52-year cycle has passed. When a period of 52-years was completed “the years were piled, the thirteen-year cycle had four times made a circle.”<sup>32</sup> Time and space, completed and exhausted at the termination of the 52-year cycle, had to be symbolically renewed and recreated in the 52-year calendar ritual. This was manifested in the ritual proceedings. In the New Fire ceremony of the postclassical Aztecs the new fire was brought out to all directions of the empire (*inic ie nouiiampa vmpa oioaloque*, “(Having come) from all directions”) by the fire religious specialists.<sup>33</sup> The “all directions” presumably corresponded to the four cardinal directions. Sahagún continued his relation by declaring that after the fire was lit and “the New Year” started, incense were offered to the four cardinal directions in the courtyard. Then the people cast incense into the hearth.<sup>34</sup> This hearth conceivably symbolized the center of the universe. Folio 46 of *Codex Borgia* depicts the deities lighting the new fire to create morning light before the world was made. A religious specialist of Quetzalcoatl drills a fire in the heart of the jade of Xiuhtecutli-Chantico under the supervision of the Ciuacoatl. The spirits of the fire disperse in the four cardinal directions.<sup>35</sup> Sahagún explains quite categorically that the “idols” and the contract with the indigenous deities (so-called “devils”) were renovated but he also implies that space and time were renewed in his interpretation of the 52-year count in book IV of *The Florentine Codex*.<sup>36</sup> The character of the 52-years calendar and the ritual proceedings therefore implies that not only time but also the spaces of the world were ceremonially observed in a symbolic-ritual spatial-temporal fashion.

#### Temporal eschatology of the universe and the 52-year calendar ceremony

The Aztecs structured their past (history), present and future (prophecy) after a computation of 52 vague years in a reckoned time sequence. The 52-year calendar cycle was in some sources considered to be a subunit of a world period or world age, where the four previous world ages consists of a sequence of 676-364-312-676 years in *Leyenda de los soles*<sup>37</sup> and 676-676-364-312 years in *Historia de los Mexicanos por sus Pinturas*.<sup>38</sup> The duration of each of these world ages are exact mathematical multiples of 52-year cycles.<sup>39</sup> The world age of 676 years incorporates 13 x 52-year cycles, the world age of 364 consists of 7 x 52-year cycle, and the world age of 312 year embodies 6 x 52-year cycles.

The 52-year calendar was the longest time count observed by the Aztecs. Thus they felt obligated to ritually renew the cosmic cycle lest the universe would be annihilated. The emblematic 52-year ritual was accordingly a calendar ending and a calendar introducing ceremony in order to secure the endurance of the Aztec cosmos.

This ritual renewing was symbolized by the drilling of a new fire in Mesoamerica.<sup>40</sup> A new fire was ignited before an important enterprise like war, dedication of structures, prognostication of omens etc.<sup>41</sup> Fire was a ritual technique, “a centrepiece of the Aztec cult”, but also linked with a variety of purposes, meanings and ceremonial contexts.<sup>42</sup> The new fire of the 52-year calendar had the symbolic meaning of a renewing. *Codex Borbonicus* illustrates (fol. 34) that the 52-year calendar ritual included a ritual burial of year bundles, symbolizing 52 years of the ancient cycle. The *xiuhmolpilli* (binding of years) ceremony reflects that a certain unit of time, i.e. 52-years of the Calendar Round, has been completed, whereas the successive drilling of a new fire represented the introduction of the new 52-year cycle.<sup>43</sup>

Pharo has argued that the structure of the 52-year calendar ritual follows the pattern sequence of a *rite de passage*.<sup>44</sup> Sahagún has outlined the liminal or marginal period to be conceived by the Aztecs as dangerous and filled with anxiety and psychological terror. This is quite logical since the cyclical 52-year count was the longest acknowledged calendar of the postclassical Aztecs, which might imply that time be finally terminated at the completion of this time reckoning. It was therefore imperative for human existence that time was renewed so that a new 52-year calendar could be introduced. In reality, Sahagún, in his narration and explanation of the ceremonies, diagnoses the 52-year calendar ritual psychologically as an apocalyptic/eschatological ritual. He writes in book IV of *The Florentine Codex* that a fear of the end of the world prevailed among the people when the 52-year cycle was approaching its completion<sup>45</sup>, depicted on folio 43 of *Codex Borbonicus*. The night of the day Ome Acatl(2 Reed) of the New Fire Ceremony was a time of fear and terror of the end of the world. A psychological relief befell the people when they realized that the New Fire was lit on the top of the hill Huixachtlan. The new fire was a signal to the people that the world would continue to exist for another fifty-two years.<sup>46</sup> If we are to trust Sahagún's interpretation, the essential rationale of the Aztecs of ritually observing the end of a 52 year cycle was not only an apprehension for the termination of a calendar but more importantly for historical time and consequently for human existence. The Aztecs thought that time could eventually end on

Ome Acatl because the sun might not rise and the *tzitzimime* would then devour humanity. Only the New Fire ceremony could help to avoid the decline and decay of historical time. The 52-year calendar was for that reason a ritual reaction by a religious system to avoid cataclysmic annihilation of the universe. This 52-year ritual can hence be categorized as apocalyptic or eschatological.

### The apocalypse of the fifth and present world age (Sun): Nahui Ollin

The central eschatological idea in Aztec temporal philosophy focuses on a massive cataclysmic earthquake prophesized to finish off the present fifth world (Nahui Ollin).

We recall that the postclassical Aztecs conceived that there have been four world periods or ages (Suns) and that humanity are now living in the fifth world age. Every world age ended by a calamity and its inhabitants were either destroyed or transformed into another life form. The majority of the sources bestow upon each world age the names Nahui Ocelotl (4 Jaguar), Nahui Ehecatl (4 Wind), Nahui Quiahuatl (4 Rain), Nahui Atl (4 Water) and Nahui Ollin (“4 Movement”) after stations of the 260-day calendar. The names of the world ages indicate the character of the age, presumably the date of when it would be terminated, and in what manner the world and its inhabitants were exterminated. The contemporary (fifth) world age will then meet its inevitable completion on the date Nahui Ollin (“4 Movement”). The word *ollin* or “movement” is associated with a catastrophic world-ending earthquake. Earthquakes were and are not an uncommon natural feature in Central Mexico. *Annals of Cuauhtitlan* relates of this destruction of the earth:

Movement is the day sign of the fifth sun, called Movement Sun, because it moves along and follows its course. And from that what the old people say, there will be earthquakes in its time, and famine, and because of this we will be destroyed.<sup>47</sup>

The fifth world age would hence be terminated by an earthquake followed by famine and darkness.<sup>48</sup>

The renowned and indeed fascinating Aztec “Calendar Stone” a.k.a. “*Piedra del Sol*” (“Sun Stone”) contains the signs of the five world ages from the 260-day calendar.<sup>49</sup> The Nahui Ollin sign enclose the center of this stone monument with 260-day calendar signs of the four previous world ages chronologically beginning in the upper right in a counter clockwise

procession: Nahui Ocelotl, Nahui Ehecatl, Nahui Quiahuitl and Nahui Atl. In Aztec cosmology, the Calendar Stone represented through the 260-day signs not creations but the destructions of the world ages. Concerning the spatial-temporal world ages signs: four cardinal directions and a center are combined with the 260-day calendar; Townsend emphasizes the quadripartite cosmological orientation with imperial territory and sovereignty as illustrated in the iconography of the stone.<sup>50</sup>

Carrasco has written about the cosmic paranoia of Aztec cosmological thought in his analysis of the Great Aztec Temple.<sup>51</sup> A cosmovision so dedicated to overcoming profound celestial and terrestrial instability symbolized by repeated destructions and recreations must have left the religious specialists and nobles with a sense of deep insecurity. The eschatological ideology of an annihilation of the world of Nahui Ollin reflects this cosmic paranoia and a sense of apocalyptic horror in Aztec society. This future catastrophic cosmic earthquake might very well take place not just on the day but also in the year Nahui Ollin. It was this psychological commitment to the periodic and impeding doom of the world that may have led the Aztecs to interpret the Spanish arrival and their widespread military alliances with Aztec enemies to claim that the cosmos had turned against them once and for all.

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## Notes

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