

FERNANDO PALMA
RODRÍGUEZ

ĀMANTĒCAYŌTL:
AND WHEN IT
DISAPPEARS, IT IS SAID,
THE MOON HAS DIED

CANAL PROJECTS



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Āmantēcayōtl: Indigenous Technologies and the Cultivation of Life

Sara Garzón



Fernando Palma Rodríguez (Mexican, b. 1957) studied electrical engineering in the early 1980s at the Instituto Politécnico Nacional de México. Afterwards, he pursued an artistic career in London and graduated with a dual degree in Studio Art and Art History from Goldsmiths University (1988–1992). In 1994, the artist exhibited his first robotic artworks in the Rijksakademie van beeldende kunsten in Amsterdam, where he earned an M.A. in programmed-based sculpture (1994–1996).

Ever since then, Palma Rodríguez has become a pioneer of Indigenous robotic art. His interest in machine-human behavior was expanded by an interrogation of the ideologies, uses, and designs of western technologies. Central to his practice is an emphasis on Indigenous ancestral knowledge, both as an integral part of contemporary life and as a way of shaping the future. According to the artist, Indigenous technologies are built on the lessons learned from harvesting the soil; they offer entry into the earth-based practices that help sustain and nourish life in community. “In working the land,” says Palma Rodríguez, “life merges into creation, nature into culture, and ultimately, art into technology.”¹

¹ Fernando Palma Rodríguez, “On Snakes, Flowers, Art, and Technology,” unpublished article.

Indigenous technologies—a broad field of knowledge and creation—can be more eloquently expressed through the use and theorization of robotic art. Robotic art, like most practices of digital art, operates with computer-based software and relies on systems and networks. Since the 1970s, robotic art has dealt more directly with behavioral issues. Experiments such as Nam June Paik and Shuya Abe's *Robot K-456* (1968), Thomas Shannon's *Squat* (1966), Gordon Pask's *Colloquy of Mobiles* (1968), and Norman White's *Ménage* (1974), among others, have become emblematic of robotic art of the twentieth century. However, unlike these precedents, Palma Rodríguez's machines invoke critical issues of machine behavior and visitor response that embody the total social network of Indigenous technological thinking. Through robotic art, he delineates a technological framework premised on other-than-human ontologies and are oriented toward relational epistemologies, which are neither external to people nor an extension of human potency. While the history of robots has been historically determined by automatization and control, the Indigenous idea of robotics advanced by Palma Rodríguez, especially in his new installation, *Āmantēcayōtl*, calls for an urgent reorientation of these technologies towards the principles for the cultivation of life.

I. 1994 the first Robotic Works: *Greetings Zapata Moles*

As a result of new economic policies and a renewed belief in the promises of technological progress that characterized the information age of the 1990s, Palma Rodríguez noted how striving towards modernization through urban development, communication technologies, and the privatization of nature led his hometown, an Azteca-Chichimecas and Nahuatl-speaking community, towards social fragmentation and cultural dissolution. The art installation at Rijksakademie van beeldende kunsten titled *Greetings Zapata Moles*, not only demonstrated Palma Rodríguez's knowledge of mechatronics and cybernetics, but is also become an important intervention into the entrenched relationship between colonialism, environmental destruction, and technology evident through the transformation of the artist's homeland.

Greetings Zapata Moles was made of four mechanical characters depicting a family. Repurposing sewing machines, the artist transformed the machines into mythical cyborgs. Embodying the famous Mexican figure of the *luchador*, the devices were disguised with vibrantly colored *lucha libre* masks. Employing the aesthetics of the *lucha libre* fighters, Palma Rodríguez's characters follow the social movement of public defenders who also dressed up in *luchador* outfits to organize their communities against structural violence and inequality. The two main cyborgs in *Greetings Zapata Moles*, "El Super Ecologista" and "La Super Barrio," drew on actual urban superheroes who fought environmental destruction and pollution along with corruption and marginalization. The reference to these social activists related to the immediate local conditions of urban sprawls in Mexico, which suffered not only from a polluted environment, but also from severe water scarcity.

Palma Rodríguez's concern with his changing local environment, however, cannot be divorced from the effects that the rampant privatization of natural resources has had in Latin America through the enforcement of free trade agreements, specifically after the signing of the General Agreement on Tariffs and Trade (GATT) in 1986 and then the North American Free Trade Agreement (NAFTA) in 1994. Noting the effects that policies for free market exchange had on the local environment, art historian Amy Sara Carroll stated that:

One year after the earthquake measuring 8.1 on the Richter scale rocked Mexico City, claiming over ten thousand lives, Mexico opted to join an unnatural disaster of comparable magnitude—the General Agreement on Tariffs and Trade (GATT). What followed was the nearly complete formalization of Mexico's open economy. The hemispheric disaster capitalisms that ensued led many to invent novel names for the era's more viscerally felt realities."²

By equating the devastating effect of the 1985 earthquake with that of free trade agreements, Carroll delineated the impact that neoliberalism would have in transforming Mexico's contemporary art scene. The economic policies were faced with resistance from Indigenous communities as well, especially the Army of National Liberation Emiliano Zapata (EZLN), which emerged as a contestation against globalization and the privatization of nature. In describing the EZLN uprising, historian Craig Benjamin claimed that the Zapatistas chose to announce war against the Mexican

state on January 1st, 1994, precisely when the NAFTA agreement came into effect. They were deeply aware of the developmentalist fallacies promulgated by the Mexican state and its antiquated ideologues of capital accumulation.³

While Palma was not in Mexico during the years of 1988 to 1994 to witness firsthand the signing of the NAFTA agreement and the rise of the EZLN in Chiapas, he was influenced by their land struggle through his mother's activist role. In addition to fighting for Indigenous autonomy and land rights, she also protested the implementation of neoliberal policies as promulgated by NAFTA.⁴ This period marked a turning point in the consolidation of environmental violence, and exacerbated the continued oppression of Indigenous communities and destruction of the Earth. In 1992 at the global conference *La Cumbre de la Tierra*, former Mexican president Carlos Salinas de Gortari argued that the importance of supporting an environmentally responsible agenda was contingent on the ability to enable the advancement of technology essential for catalyzing economic growth in the developing world.⁵ *La Cumbre de la Tierra* was an important inflection point since, as explained by scholar Carolina Toro Pérez:

[...] a new way of negotiating with nature was established. Private transnational corporations emerge as the most adequate actors to deal with and solve the needs "of the poor" and of future generations.⁶

At the service of modernization and the expansion of capitalism, the ethos of western technology development inherently upheld inequality, oppression, and subjugation that precluded Indigenous people from sustaining their own forms of life. Palma Rodríguez's robotic artworks not only contest the destruction of the environment, but also question the belief that western technology is a guarantor of environmental sustainability.

II. Āmantēcayōtl: And when it disappears, it is said, the moon has died

Since his student show in 1994, Palma Rodríguez has made a variety of robotic agents that speak to new understandings of technology and its relationship to Aztec cosmovision. Some of his earliest pieces include the cyborg machines *Coyote-brother* (1996), *Second in Charge* (1997), *Mixcoatl, snake-cloud* (1997), and *Tonanatzin, our mother* (2002). However, Palma Rodríguez's most emblematic machine is an embodiment of the Aztec deity *Huehucōyōtl*. The *Huehucōyōtl* is a Mexican deity in Aztec cosmology also known as the Old Coyote. A composite between human and animal, this celestial figure is noted for having the capacity to navigate between variegated and contradictory ecosystems. Palma Rodríguez's engagements with the *Huehucōyōtl*, through both performative reenactments and robotic activations, elicit

³ Craig Benjamin, "The Zapatista Uprising and Popular Struggles Against Neo-Liberal Restructuring," *Labour, Capital and Society* 27, no. 1 (1994): 112–113.

⁴ Palma speaks to the influence that the Zapatista uprising had on his family who declared themselves in solidarity with the movement, especially his mother. In a personal interview with Palma's mother, she described her involvement with the EZLN in its early years when she took trips to Chiapas until one day she was told by Subcomandante Marcos to organize in the town that she was coming from. As a result she founded the Asociación Civil Calpulli Tecalco de la comunidad de San Pedro Atocpan—a school dedicated to the recuperation of the Nahuatl language and dissemination of Nahua traditions and culture, in which Palma collaborates not only to further study the language, but to help preserve the history and memory of Nahua communities from the central region of Mexico. Fernando Palma Rodríguez, and María Angélica Rodríguez, Interview with Sara Garzón, November 10, 2019.

⁵ Francisco Gil Villegas, "Política y protección del medioambiente en México durante el gobierno de Carlos Salinas de Gortari," in *Medio Ambiente*, ed. Antonio Yúnes-Naua (Ciudad de México: Colegio de México, 1994), 124.

⁶ Carolina Toro Pérez, *Ecología política en la mitad del mundo. Luchas ecologistas y reflexiones sobre la naturaleza en el Ecuador* (Quito, Ediciones Abya-Yala, 2017), 17. [My translation].



the coyote's shapeshifting powers. The artist's invocation of the Old Coyote, more so than a personification of the deity, is a practice of becoming and recuperation of Aztec cosmologies.

Fernando Palma Rodríguez's largest installation to date, *Āmantēcayōtl: Auh inihcuac huel ompoliuh, mitoa, ommic in meztli* (May–July 2024) presents an installation of robotic sculptures invoking Mesoamerican deities and their relationship with the ancient Milpa practice. The Milpa is an ancient crop whose teachings help define the notion of Indigenous technologies. Emulating a cornfield at the slopes of the Teuhtli Volcano in Milpa Alta, Mexico, the installation at Canal Projects features three robotic entities that represent different deities of the Aztec pantheon. Together, they elucidate the birth of corn and the sacred relationship that exists with the harvest of the Milpa.

The Milpa is a plot of farmland centered around the harvest of maize (corn). Palma Rodríguez explains that in the traditional Milpa, a practice at least 3000 years old, maize, bean, and squash are commonly grown together. Each plant benefits the



other, forming a symbiotic relationship. Beans release nitrogen into the soil through their roots, essential to the fertilization of maize plants. In turn, maize stalks grow taller providing a scaffold for the bean plant to climb, elevating the blossoming flowers crucial to pollination. Finally, the large squash leaves grow abundantly amongst the Milpa, covering large areas in shadow that are so thick that hardly any weeds can grow underneath. The Milpa is, therefore, not exclusively planted for human consumption, but is sown as an offering to the soil and as nourishment to the nonhuman actants that also depend on its presence. In addition, the Milpa cannot be worked alone, it is intergenerationally and collectively grown. Harvesting over several months is hard work, requiring long hours under the sun, cold, or rain.

The Indigenous peoples of Milpa Alta harvest the Milpa on the slopes of the Teuhtli volcano. The Teuhtli volcano, located on the southern outskirts of Mexico City, is approximately 14,00 years old and rises to 2,700 meters above sea level. The volcano is a natural geographical limit that demarcates the border between Milpa Alta and Xochimilco. While geologically the volcano is characterized as dormant, this sacred figure is everything but idle. On the contrary, many expressions of life lie within and

emanate from it. Here, the *Teuhtli*, an ancient deity whose name in Náhuatl stands for “venerable lord,” spiritually conditions contemporary agricultural traditions and community practices.⁷

The *Teuhtli* is only one of the rival mythical volcanic deities that exists in the greater valley of Mexico. It stands in proximity to the ancient warrior *Popocatepetl* and *Iztaccíhuatl*, which in Náhuatl translates to “white woman”, but is proverbially known as the “sleeping woman.”⁸ According to Aztec legend and oral tradition, these three sacred volcanic deities are the providers of water, minerals, and seeds needed to cultivate and nurture the land of their respective geographic positions and topographic structures.⁹ The “venerable lord,” for instance, continues to grant fertile ground, weather, water, and seeds for the success of the harvest for nearby communities.¹⁰

⁷ Homero Aridjis, “El Popocatepetl, HISTORIA Y LEYENDA,” *Artes de México*, no. 73 (2005): 8–11.

⁸ David Carbajal López, “Iztaccíhuatl: de diosa a princesa,” *Signos Históricos* 23, no. 46 (2021): 286–315.

⁹ Calpulli Tecalco, *Nemiliz Tlacuilolli Xopantlacualli. La leyenda del Xopantlacualli. La comida del tiempo verde y relatos de la milpa* (San Pedro Actopan, México: Instituto Nacional de los Pueblos Indígenas, 2019), 7.

¹⁰ Marco Buenrostro, “Las bondades de la milpa,” *Ciencias* 92–93 (October 2008–Marzo 2009): 30–32.

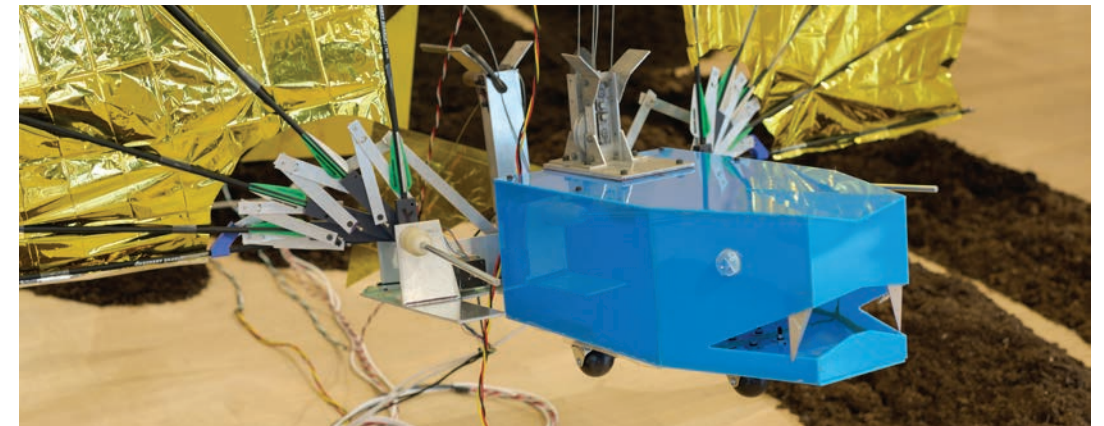
Situated in the center of the exhibition, is a Milpa field with a watchful mechanical *Cincoatl* snake stretching above. According to Palma Rodríguez, farmers throughout time have encouraged the *Cincoatl* snake to roam their crops. In fact, the name *Cincoatl*, is often translated as “snake-friend of maize corn”.¹¹ In ancient codices and across Mesoamerican iconographies, the snake is associated with a vision of the underworld. However, in the exhibition, it erupts from above, for *Cincoatl* is known to be a transgressor between earth and sky.¹² To the side of the snake is *Tezcatlipoca* (Jaguar lord), which translates to “smoking mirror,” is the god of the Great Bear constellation and the night sky.¹³ *Tezcatlipoca* is a prolific shapeshifter, who commonly appears in the form of a large jaguar, also referred to as “Heart of the Mountain.”¹⁴

¹¹ Palma Rodríguez, “On Snakes, Flowers, Art, and Technology,” unpublished article.

¹² Codex Chimalpopoca “The Death of Quetzalcōātl Anales de Cuauhtitlan,” sections 5 to 8. <https://pages.ucsd.edu/~dkjordan/nahuatl/ReadingQuetzalcoatl.html>.

¹³ Guilhem Oliver, “Huhucōyotl, “coyote viejo,” el musico transgresor ¿Dios de Los Otomíes O avatar Tecatlipoca?” *Estudios de cultura Náhuatl* 30 (Diciembre 2009), 119.

¹⁴ Oliver, “Huhucōyotl, “coyote viejo,” el musico transgresor ¿Dios de Los Otomíes o avatar Tecatlipoca?,” 119.



According to ethnohistorian Guilhem Oliver, *Tezcatlipoca* has different qualities, but perhaps the most important one is its association with the origin of corn.

Oliver underscores that in historical annals of the Maya Cakchiqueles, the Old Coyote was the only one to know about a secret place called Paxil where the corn was found.¹⁵ The Coyote’s indiscretions, moreover, revealed the very nature of the deity and that of the Mesoamerican people. At the secret site of Paxil, the Coyote’s farts disclosed his presence. The loud noise, which, according to the anthropologist Claude Lévi-Strauss can also be interpreted as laughter, led to an explosive outburst. The Coyote’s entrails imploded, spawning the origin of corn. The insides of the coyote were made of corn, signifying the origin of the Mesoamerican people and consequently their staple food for nourishment.¹⁶ Lévi-Strauss further associates

¹⁵ Ibid., 123.

¹⁶ Ibid.

the smoking mirror outburst of *Tezcatlipoca* as having an equivalent characteristic of revealing in an explosive form, the corn nature of both deity and people.¹⁷

The *Cincoatl* snake glides above the Milpa while the *Huehuecōyotl* and *Tezactipoclas* interact with viewers, embodying practices and traditions involved in relating, caring, and being in community with the land and technology. Palma Rodríguez notes to this end that:

Technology has led us to an ecological disaster, but it can also save us if we do not keep it separate from perception. When one understands that the snake is a network of energy, we understand that what we are talking about is the earth, because the earth is clothed in energy. A tree is energy, the sky is energy, the sun is energy, and then existence is a network of energies. And this is quantum physics, where there is no division between my flesh, the air, the table. We are all an energetic sea.¹⁸

The Aztecs revere many snakes, so much so that they are central to many myths and practices that are relevant to this day. They appear in architecture, in vases, in murals, and in offerings for the dead. What did the ancients aim to illustrate in such a profusion of snake symbols? Together, the mechanized entities of the exhibition make evident the sacred relationship that exists between Nuhua cosmologies and its entwinement in the cultivation of the Milpa.

Palma Rodríguez's machines speak to the agency and intentionality of these sacred figures, which, being based on the cultivation of life, aid in the construction of livable worlds. Yuk Hui's definition of "cosmotronics" is relevant here, as he explains that:

Cosmos does not refer to outer space, but, on the contrary, to locality. Each culture has its own cosmology, which is a product of its own geography and the imagination of its people. Cosmologies are not purely scientific theories about space like astral physics, but embedded in daily life, in the way we relate to other humans, to non-humans, to other natural resources, and to the environment as a whole.¹⁹

Working at the intersections of land and cosmology, Chilean anthropologist Luis Razeto Migliaro defines Indigenous technologies as bearing the capacity to cultivate life. Here the networked ideas of technological knowledge are the product of "saber criar la vida y dejarse criar por la vida,"²⁰ which loosely translates to, "knowing how to cultivate life and letting life cultivate you." This notion accurately captures a particular definition of the technological that not only undermines the self-proclaimed universality of western ideas of creation, tool making, and design but repositions the logics of technological knowing towards life-granting and earth-based paradigms.

An Indigenous relationship to technology centers on the recuperation of ancestral knowledges, practices, and worldviews—orientations that are capable of establishing intersubjective relationships with the environment, ancestors, and even time. In other words, Indigenous technology goes beyond the idea of technology as a materialized

¹⁷ Ibid.

¹⁸ Angélica Abelleira, "Fernando Palma: mecatrónica con una cosmovisión indígena," *PasoLibre* (Enero 20, 2020). <https://pasolibre.grecu.mx/fernando-palma-mecatronica-con-una-cosmovision-indigena/> [My translation].

¹⁹ Yuk Hui, *Art and Cosmotronics* (New York: E-flux, 2021), 41.

²⁰ Luis Razeto Milagro, "Presentación," en *Manos sabias para criar la vida – Tecnología Andina*, eds. Juan van Kessel y Horacio Larraín Barro (Quito: 49 Congreso de Americanistas, 1997), 6.

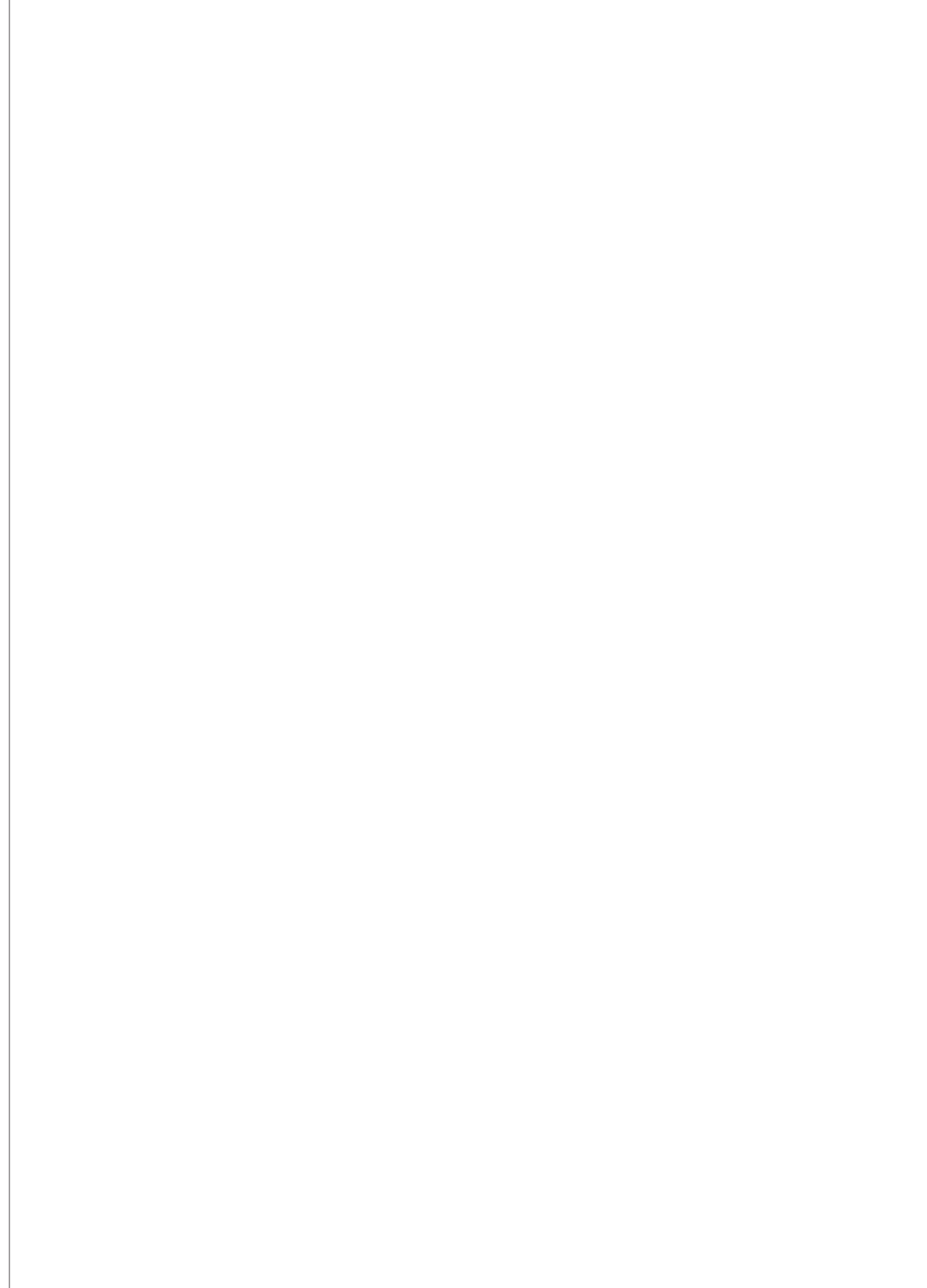


external technical apparatus that mediates social relations and subjectivities. Instead, it refers to a logic constituted from within the social relations between humans and non-humans, thereby accounting for a multiplicity of knowledge and modes of knowing.

Āmantēcayōtl: *Auh inihcuac huel ompoliuh, mitoa, ommic in meztli* is the materialization of the technological thinking of Fernando Palma Rodríguez, whose robots are embodiments of the complex relationship that exists between cosmology, technology, and land. Palma Rodríguez's robotic *Tezactipoclas*, *Cincoatl*, and *Huehuecōyotl* are not a mere instrument of representation, but a manifestation of the world-making practices that transform the very utility of the machine from solely an apparatus into a network, or web, of human and non-human relationalities. These cyborgian and robotic artworks, moreover, bring into being the cosmological orders and ethical engagements that produce, contain, and weave together the technological thinking that emanates from the cultivation of life in the Milpa.









Notes around the Teuhtli volcano

Eduardo Makoszay Mayén

The intention of this text is to generate an immersive approach for understanding the Teuhtli Volcano through a biocultural framework. The volcano is located in the south of the Anahuac valley, a territory which is now commonly referred to as Mexico City. Although recently the volcano has experienced a severe drought, its slopes were once riverbanks, and according to Nahua mythology, a hidden aquatic world was contained in its interior.

Although Xochimilcas and Momoxcas share the Nahua language and their proximity to the Teuhtli volcano, their everyday lives are intersected by different ecosystemic flows, bringing forth specific contextual techniques. Xochimilcas inhabited and developed a lacustrine landscape, while Momoxcas developed ways of life related to the mountain area. This difference is evidenced by their Pre-Hispanic dwellings: most habitational structures in Xochimilco were made of plant materials erected on *chinampas*, and in Milpa Alta, dwellings were mainly made of volcanic rock. Although modernization has attempted to standardize life in all planetary ecosystems, Xicala Ferriz from Calpulli Tecalco has shared with me that there is still a great biocultural difference between living in the mountains of Milpa Alta and interacting with the Xochimilcas who are still living in the canals. Their microclimates are different, and therefore, cultural elements such as their diets are different.

The Nahuatl word for mountain is *tepetl*, the word used for town or city is *altepetl*, combining the words *atl* (water) and *tepetl*. This linguistic resonance between actual mountains and cities can be placed as a continuation of the self-similar relation between *teotls* and mountains, and can be taken further by considering *tepictotons*, which are edible *ixiptlas* of mountains-tlaloques made of amaranth dough. These amaranth sculptures can be shaped as mountains or as anthropomorphic *tlaloques*, sometimes referred to as *angelitos* [little angels], and were part of festivities concerning the request for rain. *Yalo tepetl* is the Nahuatl name for the request of rain, and it directly references the Mesoamerican understanding that mountains contain water. Thus, Johanna Broda has described mountains as “atmospheric deities that master the meteorological cycle.”¹

The Life(s) of a Mountain-Being

Around the year 1,000 A.D., three Chichimeca groups established themselves on the slopes of the Teuhtli volcano. It is said that the Chichimecas turned into Nahuas by eating maize when they arrived in the region. These three groups came to be known as Tlahuicas, Xochimilcas, and Momoxcas (Milpaltenses). Like the rest of the groups that established themselves in the Anahuac valley, they came from Chicomoztoc: a place with seven caves whose location has never been confirmed.² While the Tlahuicas and the Xochimilcas developed lacustrine modes of life through the creation of *chinampas* (anthropogenic islands for habitation and agriculture), the Momoxcas developed their life in relation to the mountains, taking advantage of rocks and the uphill topography. For the three of them, the Teuhtli volcano became a guardian or counselor.

The volcanoes in the Anahuac valley such as Teuhtli, Iztaccihuatl, Popocatepetl, and Tlaloc are all part of the Trans-Mexican Volcanic Belt, which formed in the early Miocene and the intermediate Holocene. For the Nahuatl people, all of them were part of a race of anthropomorphic giants who inhabited the Earth. While the relation between Iztaccihuatl and Teuhtli is sometimes described as that of daughter and father, in other sources they are described as participants of a love triangle involving the Popocatepetl volcano, where Teuhtli and Popocatepetl fight for the love of Iztaccihuatl. The word “Teuhtli” is etymologically derived from *teotl*, but also means dust.³

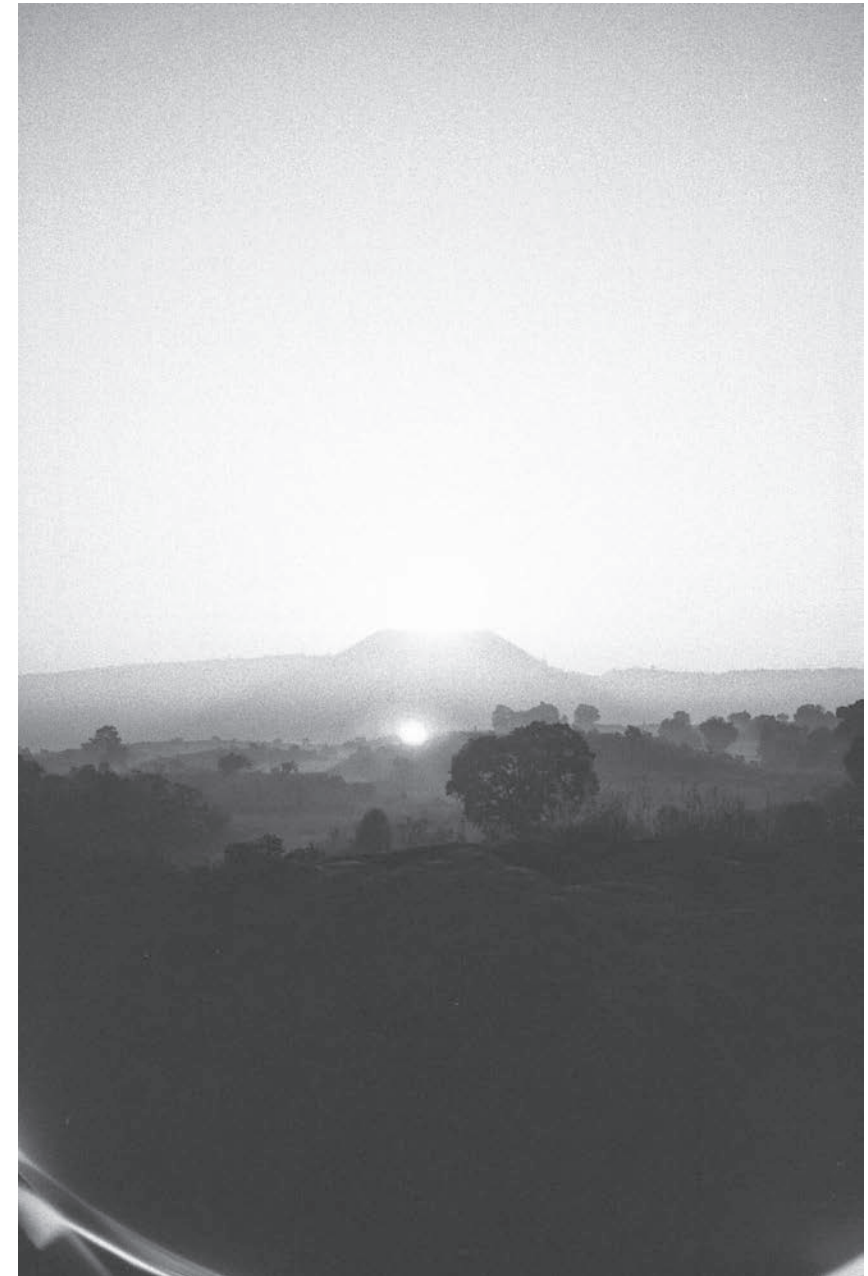
The anthological book, *Los cuentos en náhuatl de Doña Luz Jiménez* [The Nahuatl stories of Doña Luz Jiménez], published in 1979, features a couple of mentions of the Teuhtli volcano.⁴ Luz Jiménez, a Momoxca woman of great importance in the years that followed the Mexican Revolution, worked as a translator, writer and model for artists such as Diego Rivera (Mexico, 1886–1957), David Alfaro Siqueiros (Mexico, 1896–1974), and Tina Modotti (Italy, 1896–1942). In her “*Cuento sobre la Mujer Blanca*” (*Story About the White Woman*), Jiménez tells the story of people pleading with the Teuhtli to bring rain without hail for their *milpas*. For Jiménez, Teuhtli is both a volcano and a “dormant gentleman,” and in the need of rain, the Momoxcas collected money to buy turkeys, sheeps, and other ritual elements. After bringing

¹ Johanna Broda y Aurora Montúfar, “Figuritas de amaranto en ofrendas mesoamericanas de petición de lluvias en Temalacatzingo, Guerrero,” Montserrat Gispert (coord.), *Identidad a través de la cultura alimentaria*, (México: CONABIO, 2013), pp. 169.

² This was clarified to me by archeologist Thania Ibarra through personal communication.

³ At the moment I am writing these words, I still have not learned Nahuatl, and cannot reflect about this ambivalence further. See <https://gdn.iib.unam.mx/diccionario/teuhtli/161111>.

⁴ Even if the book's title includes Luz Jiménez name, the the authorship of the book was attributed to the United States authors Fernando Horcasitas and Sara O. de Ford. In a previous book, *De Porfirio Díaz a Zapata: Memoria náhuatl de Milpa Alta* [From Porfirio Díaz to Zapata: Nahuatl memory of Milpa Alta] (1989), Luz Jiménez is credited as a main informant within the book's introduction where Horcasitas offered several warm paragraphs about her life.



everything inside the caves as an offering to Teuhtli, the venerated Lord told them that it did not depend on his will alone, and sent the Momoxcas with the offering to the Tepozteco mountain. Tepozteco accepted the offering and told the people that rain will come soon, however, he entrusted them to stop by to greet the daughter of Teuhtli: the Iztaccihuatl volcano. Jiménez ends this story describing how the Momoxcas brought back little rocks and small pieces of hail, which “meant that rain will not lack and that milpasj will grow as they should.”⁵ Anthropologist Cecilia Lombó explains that this relational ambivalence between mythic beings is very common to Mesoamerican cosmogony. The geosocial life of mountain-beings happens within a scale and magnitude that exceeds the comprehension of modern people.

The Momoxcas believed that among this race of giants, Teuhtli and Popocatepetl were brilliant warriors, but rivals to each other, competing for the love of the same woman: Iztaccihuatl. Iztaccihuatl preferred Popocatepetl, but bore a child to Teuhtli: the small Yeteco mountain. Teuhtli and Popocatepetl overcame their rivalry when their world was attacked by endless tigers who they fought until the end. Losing the battle, Popocatepetl took Iztaccihuatl in his arms and escaped. Teuhtli stayed fighting until his death. While escaping, Iztaccihuatl died in Popocatepetl’s arms, so he left her lying down. Devastated, Popocatepetl came to his knees and looked at her forever.⁶ Iztaccihuatl and Teuhtli became dormant, while Popocatepetl continues his life as an active volcano. Teuhtli was covered in ice for some time, but eventually the ice defrosted and became the water source of the Xochimilco and Chalco lakes.

The Teuhtli volcano holds various archeological vestiges that lie in its slopes: rock-made structures and agricultural terraces currently used for nopal, corn, and amaranth monocultures. Listening to Angélica Palma and Héctor Celedón from Calpulli Tecalco, I understood that the terraces around the Teuhtli were sacred sites in which *teotls* were literally fed. The word *teotl* is commonly referred to as “god” or “deity,” although its full meaning cannot be translated into latin or germanic languages, since it exceeds estern concepts. *Teotls* are not only subjects, they are also actions or forces. For example, Tlaloc who is commonly understood as the Nahua god of rain and lighting is also the rain and the act of raining in and of itself. Heterogeneous elements such as corn, mountains, amaranth, and water are sometimes referred to as *teotls* too.

Pre-hispanic Nahuas were inherently collaborating with *teotls* in both as deities and as cosmic forces. Thus, the constitution of the cosmos happens when humans enter into feedback processes with *teotls*. Here, “cosmos” does not refer to the extra-terrestrial or super-natural. The cosmos surrounds and shapes us. We are not the cosmos knowing itself, we are the cosmos creating itself. Working the *milpa* fed the *teotls* and in response, the *teotls* helped people to maintain the order of the cosmos. When thinking about Pre-Hispanic Nahuas, this feedback process makes the “biocultural” concept affordable; meaning that there exists an intrinsic constitutive relation between the processes categorized as “nature” and “culture.”. These categorical distinctions can be avoided by using the “bioculture” concept instead. Participation in these biocultural processes brings forth perceptive images through which societies relate to one another and their environment.

The Nahua concept of *ixiptla* is commonly translated as an “image of” a *teotl*, in which the image and the portrayed being/force share an essential similarity and a

similar essence, enabling the catalysis of cosmic fluxes through it. Almost anything can become an *ixiptla*, a carved rock, a person, or a sculpture made of amaranth, but not everything is an *ixiptla*. *Ixiptla* can be translated as “wrapper-organs of sight, hearing, and voice,” allowing something to perceive and speak as a *teotl*. The french historian Danièle Dehouve describes:

...“wrapper” (*xiptlahtli*) refers to the act of covering oneself with the clothing of a deity to become its “personifier;” “eyes” or “face” (*ixtli*) is the word that summarizes the series of organs on which the ability to see, hear, and express oneself as the deity depends.⁷

The images used for the understanding of the world, whether scientific, historical or cosmological data, have a direct relation to the ways in which we interact with one another and our ecosystem. Aware that agriculture is an offering to the *teotls*, what could be the ecosystemic function of Nahua cosmogonic images for the contemporary modern structures?

Images of an Ecosystem

Microclimates around the Teuhtli volcano brought forth particular and contextual biocultures.

In an attempt to apprehend the Nahua Pre-Hispanic understanding of ecology we need to understand the cosmogonic oscillation between fact and fiction. Here, myths are constituted by ecological configurations, as much as ecological configurations are constituted by myths. The world is not an inert assembly of cold facts; colorful meanings appear when you pay enough attention. According to the Pre-Hispanic Nahuas myths, four *teotls* created the waters, where they raised a gigantic feminine half-fish, half-reptile named *Cipactli*.⁸ For the Nahua people, *Cipactli* is a “spatial concept that encompasses the totality of the cosmic perception.”⁹ In some versions of the story, Cipactli was sacrificed and her body was divided in two parts, one becoming Heaven and the other Earth. The sacrifice of Cipactli does not necessarily mean her death, as we continue to feel her presence in the form of earthquakes throughout the Mesoamerican region. On top of Cipactli’s body, the Cemanahuac was created. This is the territory where all the Nahua life takes place; including Chicomoztoc and the Anahuac valley. Teuhtli and his fellow mountain-beings are self-similar individual subjects and simultaneously they are part of Cipactli’s body.

Following amaranth agriculture in the Teuhtli volcano, it has become evident that there is an intrinsic—almost inseparable—relation between water and mountain. The mountain and lacustrine ecosystems around the Teuhtli volcano exchange metabolic fluxes through anthropic technical activities as evidenced every year in traditional amaranth agriculture. The Franco Xolalpa family invited me to document their ancestral techniques for amaranth cultivation. They take mud from the bottom of the Xochimilco canals to create seedbeds in the *chinampas*, where amaranth germinates until it reaches a height of 20–25 cm. The plants are then transferred to the slopes of the Teuhtli volcano at the start of the rainy season. While the soil around the canals

⁷ Danièle Dehouve, “Los tropos conceptuales en los códigos adivinatorios del Centro de México,” *Revista Española de Antropología Americana*, 52 (2022).

⁸ Ángel María Garibay, “Historia de los mexicanos por sus pinturas,” en *Teogonía e historia de los mexicanos, tres opúsculos del S. XVI*, (Ciudad de México: Porrúa, 1965), 25.

⁹ Gustavo Sandoval García, “Autosemjanza: una cualidad del espaciotiempo mexicana,” *Dimensión Antropológica*, vol. 53) (septiembre-diciembre, 2011): 42–68.

⁵ Luz Jiménez, *Los cuentos en náhuatl de doña Luz Jiménez*, (UNAM: México, 1979).

⁶ This is a common myth among contemporary Momoxcas and can be consulted here: https://teuhtli.blogspot.com/2012/04/teuhtli-mito-e-historia_01.html.



keeps a lot of moisture, the slopes of Teuhtli volcano mostly contain sandy soils. Unlike the weather in the north of the planet, Mesoamerica used to only have two stations—rainy and dry—but the arrival of each season has been disrupted due to the environmental impact of industrialization, leaving the farmers uncertain of when the rain will come.

One day we hiked the Teuhtli in the darkness of the twilight guided by Fernando Palma. From the summit of the volcano, the artificial lights twinkled over the surface of the drying Anahuac valley, compensating for the lack of stars in the sky. Guillermo Canek García refers to this experience as “a dark dawn that shed light on a sea of polluted clouds.”¹⁰ That morning, Esau Palma of Calpulli Tecalco told us about Las Pocitas, a large rock positioned in direct alignment to the Teuhtli volcano. Las Pocitas features carved incisions that symbolically mirror the surrounding ecosystem, including mountains, pools, craters, caves, canals, and terraces. If Las Pocitas is an *ixiptla*

¹⁰ Guillermo García Canek, “From These Dark Mirrors of the World: ‘The Rise of the Coyote,’” *Materia Abierta Summer School*, e-flux (October 4, 2022).

of the Teuhtli volcano and its surroundings, what are its ecosystemic functions? During the equinoxes, you can stand in front of Las Pocitas and you will witness the sun emerging from the crater of Teuhtli. This is a horizon calendar, which archeologists speculate was used by the inhabitants of the Anahuac valley to keep track of time and to understand when to conduct their agricultural processes. Depending on the time of the year, you can see the sun emerging from different peaks. In the winter solstice, the sun emerges from the peak of Popocatepetl. In the summer solstice, the sun will emerge from the Telapón volcano. Authors like Johanna Broda have conceptualized the idea of a “naked-eye astronomy” as a way to understand the annual oscillation of the sun upon the horizon.¹¹ Deciding the exact position for the placement of the rock which came to be known as Las Pocitas was only possible through systematic observation across multiple generations. For Broda, this systematic observation of natural phenomena allowed the prediction and orientation of social behaviors in relation to ecological knowledge. Taking this premise further, Gabriel Espinosa has called for an “atmospheric archaeoastronomy,” arguing that Nahuas could create symbolic understandings of the ecosystem by paying attention to diverse natural phenomena beyond the movement of cosmic bodies. For Espinosa, weather prediction involves a complex reading of the whole ecosystem, such as the conduct of insects, birds, amphibians, and so on, the aspect of vegetal species, the formation of chemical and physical phenomena such as hygrosopies, and bodily sensations described as meteoropatías, etc.¹²

Recently a Spanish friend—with whom I share a great enthusiasm for mountains—told me: “When you look from a summit, all mountains in the horizon appear to be the same.” But my direct experience learning from and with the Teuhtli volcano has shown me a quite different scenario. At least, speaking from the geographical position in which I have grown, all mountains and volcanoes are part of the fractalized body of Cipactli; meaning that they are self-similar but diverse geological formations. And apart from being geological structures, volcanoes are also subjects: mountain-beings. Thus, relating to a volcano is an intersubjective process. And as with all intersubjective relations, we should keep in mind that subjectivity is processual and ever changing. Even if a process of standardization has been transformed? in the Anahuac valley to impose the damaging one-size-fits-all models of modernity, it does not mean that we will stay like this forever. Visiting the Teuhtli volcano today, it is difficult to imagine water was once so present around and within it. Learning about the past ecological and cosmogonical configurations of the Anahuac valley can enable us to imagine a future ecosystem in which biocultural diversity can flourish. As Pre-Hispanic Nahuas were able to use their technical means towards the constitution of the ecological configurations to thrive, we could also find a way to overcome the current socio-ecological crises through the understanding and modulation of biocultural plasticities.

¹¹ See Johanna Broda, “Cosmovisión y observación de la naturaleza: El ejemplo del culto de los cerros en mesoamérica” en *Arqueoastronomía y etnoastronomía en Mesoamérica*, eds. Johanna Broda, Stanislaw Iwaniszewski, y Lucrecia Maupomé (Ciudad de México: Universidad Nacional Autónoma de México, Instituto de Investigaciones Históricas, 1991).

¹² Gabriel Espinosa Pineda, “Hacia una arqueoastronomía atmosférica,” en *Graniceros: Cosmovisión y meteorología indígenas en Mesoamérica*, eds. Beatriz Albores and Johanna Broda (México: UNAM, 1997), pp. 98.



The Microchip: A Microcosm of the world

Ruba Katrib

Working for three decades Fernando Palma Rodríguez was an early adopter of electronic arts. In his practice, the artist brings together his engineering skills through a combination of robotics and land-based knowledge. His representations of coyotes, snakes, and butterflies are derived from Nahua cosmology. However, more than simple representations of Indigenous life, the machines address issues ranging from land rights, climate change, to cultural erasure.

The sculpture *Nochanti Mochanti (Mi casa – tu casa)*, 2011, for example, evokes issues specific to the artist’s hometown in Milpa Alta, a municipality located on the southern outskirts of Mexico City. The piece models a house made out of scrap metal and wood. The exterior surface is plastered with newspaper, encased by word of daily events. The scrap metal comes alive, newly endowed with complex gestures that extend beyond their original functionality. Inside the house, a light flickers off and on, activated by motion sensors. The house then sits atop a pile of soil, a reference to the devastating strip-mining and resulting erosion taking place in the artist’s community.

The ways that multinational industry dispossesses people and pollutes land is evoked in the artwork by the way that the house seems to be sinking into the very

soil it sits upon. In Milpa Alta, like many places where such mining takes place, most of the resources mined or extracted are diverted elsewhere. That is why, the assumed gesture of hospitality referenced in the title *Nochanti Mochanti*, which in English translates to “my house is your house,” points to an inescapable interconnectedness, which is essential to the social contract suggested by it. That is, if you pollute my house, you are effectively polluting yours.

The art of robotics—a mode of artificial intelligence with futuristic associations—takes on a particular meaning for Palma Rodríguez, as he seeks connection to the natural, to the human, and to the earth through technology. The artist’s machines go beyond the original function of any motor or part. Through a sequence of movements, the works become fully animatronic, appearing more lifelike, more autonomous. By comparing a microchip to a world, Palma Rodríguez has evolved his kinetic manifestations out of these microcosms, which he sees as “a mirror of the world.”¹ He draws this observation from microprocessors not only because they resemble a labyrinthine city-like form, but because microprocessors are indeed composed of dozens of small parts coming from different countries. It is in this way that his works produce meaning. They are both representational forms as well as narratives embedded in the materials used.

When working with him on his first museum exhibition in the United States in 2018 at MoMA PS1, the installation of his works in the galleries was also in part, a recreation. The installation made evident that the machines are pieces that require tinkering, replacing worn out parts, and learning new computational languages to keep them running. Coming to life through electronic pulses and pathways, Palma Rodríguez’s sculptures move, react, and sometimes break down. They demand a type of care that is on par with the life that the artist breathes into them.

Nature and the environment are also central to his concerns. For Palma Rodríguez, it is all interconnected: the materials gathered, the subjects evoked, the movements orchestrated, and the languages used (from Nahuatl to Arduino). His works are born from these elements, poignantly endowed with meaning from the circuit board to the materials, to the palette, to the gestures his pieces make. The sculptures’ inherent and inert signs of life allow the objects to transform through silhouettes of visibility.

The artist’s found materials, moreover, are often in states of decay or disuse. The mechanical and electronic parts he employs are recycled and have limited time left. While the gestures of his sculptures build up into a complex choreography, they also wind down and wear out. In this sense, there is a tension inherent in the way that the mechanical sculptures function. They tend to sputter on and off. Many of his works also incorporate organic matter, further breaking with associations of the new and the synthetic attached to the man-made technologies he uses. By using animatronics, Palma Rodríguez suggests that human relationships to non-human entities need to be reframed entirely. Interrogating the state of nature today, which “has been deeply affected by electronics” the artist questions the degree to which we can separate nature from technology.

¹ “Although the coding and the electronics became further on, much more important, because through the mechanical world, I started thinking that the electronic gadgets that I was creating were not just a reflection of what I wanted to say, but actually were inviting, so to speak, many more people into the discussion because say for instance, the transistor may be made in Mexico, a capacitor may be made in Japan, a chip may be made in the USA or something like that. And then by allowing them to put them together, it became a mirror of the world where I was able then to see it more as a landscape rather than as just a medium to express myself.” Fernando Palma Rodríguez in conversation with the author, April 16, 2018.

While the machines seem to merge with nature, they are, in reality, part of nature. Perhaps one of the works that emblemize this is an ongoing series, called *Papalutzin* (2018–Present). This is a series of butterflies made of discarded aluminum cans. The wings, patterned by the colors and logos of the products they originated from, slowly flutter in a convincingly rhythmic fashion. When several of the *Papalutzin* are arranged together, they truly become a kaleidoscope. For the artist, the butterfly has several critical purposes, and for the Nahua, they are a measure of environmental health.

The particular species he depicts in this work is the North American Monarch, which is currently endangered. Migrating across North America, from Mexico to Canada, the insect also traverses human made borders, impervious to such delineations. For the artist, the butterfly’s migratory route also operates as a metaphor for the North American Free Trade Agreement (NAFTA). Conjuring environmental, economic, and political issues in works that flicker and flutter emphasizes their temporal, as well as ephemeral qualities. In the works, discarded material like the millions of soda cans piling up in landfills, are recycled and come to life as a representation of nature. The cans are also a part of informal economies that emerge around re-use, with people collecting them and selling them to recycling stations for small amounts of change. The cans themselves, as everyday products, migrate and cross borders like the butterfly, moving with more ease than people do across the same checkpoints. The invisible hands of commodity exchange allow them to circulate.

As the interrelations between people and more-than-human actants become more fraught, Palma Rodríguez sees electronics as an intermediary that has not only changed how humans live, but also how they communicate, even altering their voices and hearing. We are so embedded and conditioned by digital technologies, says the artist, that “we no longer speak like humans, but rather we speak in a digitalized way because we spend more time listening to people through these sorts of things than actually speaking to each other.”² The way that technology mediates human interaction, even altering our voices, our timbre, and cadence of speech is a provocative notion. Suggesting that we not only talk through robotic machines programmed with AI—like a smart phone—but actually talk like robots.

And so when human behavior is altered through technology, so is language. This fascination with language is critical to how Palma Rodríguez conceives of his sculptures, they are semantic embodiments. This linguistic concern extends to his daily life. In Milpa Alta, along with his family, Palma Rodríguez works to preserve Nahuatl. The language, as he has described it, is sculptural; made by stacking the logosyllabic words to create compound words and meanings. Therefore, it is a “language where you will sculpt reality through words.”³ Within Palma Rodríguez’s assemblages, the constructions of language are mirrored in his forms. The global language of electronics—programs like Arduino and of consumer goods—coming together with the specific languages of Nahuatl and the natural word erupt into a multi-lingual chorus. Each one informs the other. Palma Rodríguez uses them to weave together stories that emerge from the micro, from a silicon chip or electric signal, and extend to the macro, such as cosmologies and origin stories.

Palma Rodríguez often represents important deities and figures within Nuaha cosmologies, such *Quetzalcoatl*, and with *Coyotl*, or the coyote, as a recurring entity.

² Palma Rodríguez in conversation with the author, April 16, 2018.

³ Palma Rodríguez in conversation with the author, April 16, 2018.

In one work, *Xi mo matlazacan ce cehce* (2006), Palma Rodriguez turns ladders, put on wheels, into a grouping of towering two-headed coyotes. Their heads are made with cardboard, a flimsy material, yet with mouths filled with menacing teeth. The coyotes unexpectedly jolt around the room and branches stick out of the ladder steps. Equipped with motion sensors, the threatening movements are limited, as the coyote is leashed or, in this case, circling a loop. The coyote, also known as a trickster figure, here is tamed. Their teeth are flimsy, their heads bob with their staccato movements. Still threatening, but ultimately contained, the coyotes glide across the floor in circuitous patterns. Technology brings them to life, but the limits of such effects is apparent. The freedom of the coyote has been circumscribed and with multi-fold effects. The coyote is also a self-portrait, a figure that appeared to Palma Rodriguez in dreams and which has become an alter-ego. The metaphor is apt, as Palma Rodriguez straddles many worlds in his works that perhaps seem at odds—such as nature and technology, at-risk Indigenous languages and computer programs, inanimate objects and animation—which are represented by the push and pull of the coyote sculpture's movements. Yet, he importantly flattens these distinctions by making the case that technology is ancient as well as something new. He shows how all languages are ways for humans to construct, and create, their perception of the world. Palma Rodriguez avoids distinctions, and instead places his works on a continuum where a range of matter and concepts, including the past and future, can be contained in his objects.

Palma Rodríguez's sculptures are not merely static objects but dynamic reflections of the world around us. Through his innovative blend of technology and Indigenous social thought, Palma Rodríguez's practice serve as a poignant reminder of the interconnectedness between human actions and their impact on the environment. By intertwining the global language of electronics with the specific nuances of Nahuatl, he creates a multilingual dialogue that speaks to the convergence of past, present, and future. The works demand attention, engagement, and introspection, inviting viewers to contemplate the intricate web of relationships that bind humanity to the natural world. As we navigate an increasingly digitized existence, his art serves as a reification of the timeless wisdom embedded in ancient traditions and the urgent need to harmonize technological progress with ecological sustainability.





Biographies

Ruba Katrib is the Curator and Director of Curatorial Affairs at MoMA PS1, New York where she oversees the museum's program and is a member of the leadership team. At PS1 she has organized exhibitions such as Rirkrit Tiravanija: A LOT OF PEOPLE (2023), Daniel Lind Ramos (2023), Jumana Manna: Break, Take, Erase, Tally (2022), Frieda Toranzo Jaeger: Autonomous Drive (2022), Greater New York (2021), Niki de Saint Phalle: Structures for Life (2021), Simone Fattal's retrospective in 2019, as well as solo shows by Edgar Heap of Birds (2019), Karrabing Collective (2019), Fernando Palma Rodríguez, and Julia Phillips (2018). From 2012–2018 she was the Curator at SculptureCenter in New York, where she organized over twenty exhibitions including 74 million million tons (2018, co-organized with artist Lawrence Abu Hamdan) and solo shows with Carissa Rodriguez, Kelly Akashi, Sam Anderson, Teresa Burga, Nicola L., Charlotte Prodger, Rochelle Goldberg, Aki Sasamoto, Cosima von Bonin, Anthea Hamilton, Araya Rasdjarmrearnsook, Magali Reus, Gabriel Sierra, Erika Verzutti, and David Douard. In 2018, Katrib co-curated SITE Santa Fe's biennial, Casa Tomada, along with José Luis Blondet and Candice Hopkins. She regularly writes for periodicals and museum catalogs.

Fernando Palma Rodríguez (Mexican, b. 1957) lives in the agricultural region of Milpa Alta outside Mexico City, where he runs Calpulli Tecalco, a non-profit organization dedicated to the preservation of Nahuatl language and culture. Central to Palma Rodríguez's practice is an emphasis on indigenous ancestral knowledge, both as an integral part of contemporary life and a way of shaping the future. Fernando Palma Rodríguez lives and works in San Pedro Atocpan, Mexico. He was the subject of a retrospective at Museo de Arte Contemporáneo de Oaxaca (2017). His work has been included in group exhibitions at FRAC des Pays de la Loire, Carquefou, France (2016); Parallel Oaxaca, Mexico (2016); Nottingham Contemporary, England (2015); the Biennial of the Americas, Denver, Colorado (2015); Museo Universitario del Chopo, Mexico City, Mexico (2014); and SITE Santa Fe, New Mexico (2014). Also, there was an exhibition of his work at MoMA in NYC called In Ixtli in Yollotl, We the People (2018).

Eduardo Makoszay Mayén is a filmmaker and writer. His interests oscillate between ecology, technology and cosmogony in Mesoamerica. His projects have appeared in multiple festivals, publications, museums and exhibitions. He works with Trama Mutua, a collective that fosters dialogue around symbiogenesis, and with Instituto de Técnicas Contextuales, a collective focused on biocultural diversification.

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Fernando Palma Rodríguez
Āmantēcayōtl: And When it Disappears, it is Said, the Moon has Died

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