



# Our Voice

Everything around us is connected: societies involve links, junctions; life is a latticework of elements, situations, and affections. Social groups replicate themselves in small social, academic, family units, in groups united by similar interests and congeniality that also relate to each other and with their surroundings.

During this pandemic, digital networks and emotional links have kept us united; we've been able to get news, know what's going on with the virus, and how to protect ourselves or even how to grieve. We've established communication with others; we've worked in academic groups or on common causes, and, parallel to that, we've related to each other thanks to affection and empathy.

In a poem where he talks about war, Jorge Luis Borges writes of "the weave of man." But precisely the cohesion that for a very long time made it possible to win battles, becomes essential for life, for creating and ensuring the permanence of everything alive. All life, including even the very basic, implies connection: the universe, our cells—our neurons that communicate inside our body—, our bodies for pleasure and procreation; for every element and day-to-day process—no less complex for being day-to-day— of what it implies to be alive.

This issue of the magazine centers on weave or connection precisely because we think that it has been fundamental in the times we are going through now, when networks have allowed us to communicate with each other and when social and emotional fabrics have kept us in the best possible conditions as human beings. At the same time, we have seen how embroidery or sewing have become forms of communication that not only embrace tradition, but also the possibility of rebelling through a new language. So, they have turned into tools for speaking, for decorating, for comforting, and for protesting.

Symbolically, webs make room for whatever we want to think, for desire itself, love, family, art that cannot be explained without referencing interconnections and communicating voices. Even violence, consumption, pain, desolation, and death imply combinations, links, oppositions that make no sense without their other side, the positive.

Based on the crosscutting theme of connections, this issue explores the universe as an expanding cosmic web; the neurons that facilitate our internal communication; music, which is at the same time the combination of sounds and rhythms, stimulates our senses; social movements, whose success is based to a great degree on how strong the relationship of their members and groups are, constituting a system. It also analyzes the violence that encroaches upon the basic fabric of society and the negation of rights, or, the politics that feed resentment, and all the things that avert these negatives, like sisterhood, therapeutic processes, or the analysis of our societies' important processes, such as reflecting on migration, seen from the point of view of netnography, a recent research tool, or the networks and links created through art, literature, embroidery, and the very possibilities we have of communicating with each other.

I would like to point out that during the pandemic, this magazine itself has faced obstacles, but it has not stopped production or getting out to its readers thanks to the connections among all of us and the powerful latticework that culture represents for filling our confinement with meaning. **MM**

Astrid Velasco  
CISAN-UNAM Coordinator of Publications  
And Editor of *Voices of Mexico*



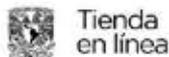
- La muerte de Arquímedes: implicaciones sociales de la inteligencia artificial y el manejo de datos masivos
- Peligros y beneficios de la inteligencia artificial en nuestra sociedad
- Cómo las redes sociales distorsionan nuestra percepción de la realidad
- ¿Debemos confiar en los algoritmos?
- Entre Atenea y Prometeo, el deambular de Germinal Cocho Gil, un generoso y sabio científico
- Breve introducción a la filosofía de la ciencia. Una obra de Samir Okasha

número 135

- La poesía de Borges y las matemáticas: un colectivo de aprendizaje
- La geometría de trayectorias de bicicletas
- La ciencia en la escuela: una propuesta de educación alternativa
- Didáctica desarrolladora en educación básica: formación integral en el proceso de enseñanza-aprendizaje
- Enseñanza de las ciencias por medio del modelo indagatorio: las Ferias de Ciencias Naturales
- ¿Qué es una disciplina científica y cuál es su método?
- Las primeras universidades



venta en línea



Ya puedes adquirir algunos de nuestros ejemplares con tarjeta VISA O MASTERCARD en la tienda en línea de la Facultad de Ciencias de la UNAM: "Plaza Prometeo"; en la siguiente liga:

<https://tienda.fciencias.unam.mx/es/86-revista-ciencias>

De venta en:  
Sanborns,  
y puestos  
de periódicos



Teresa Jiménez\*

# Julieta Fierro Unravels the Cosmic Web

**A**strophysicist Julieta Fierro is a full-time researcher at the UNAM Institute of Astronomy; she has also been the head of outreach and a professor at the UNAM School of Sciences. She has dedicated her career to disseminating science, making big contributions, and has held posts such as the presidency of the International Astronomical Union Education Commission, of the Mexican Academy of Professors of the Natural Sciences, and of the Mexican Association of Science and Technology Museums. She is a full member of the Mexican Academy of Language.

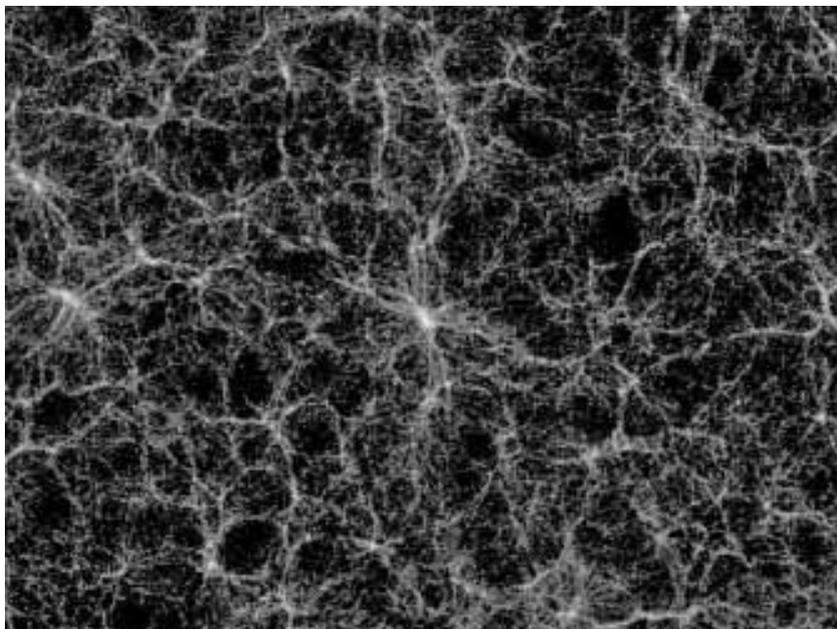
In this conversation, Professor Fierro explains the universe on the grand scale: how it forms a web, how matter is woven together, why the stars shine, why they stop shin-

ing, and how we know that something invisible exists, among other wonders of the universe.<sup>1</sup>

## Voices of Mexico (vm): How do you define the University's web?

**Julieta Fierro (JF):** If we could look at the universe as a whole, what we would see is a distribution known as the “cosmic web.” The bright objects we know, the galaxies, are arranged on enormous filaments, long conglomerates of galactic clusters. The spaces between the filaments are mostly empty: that’s where the name cosmic web comes from. To know how this kind of web was formed, we have to go back to the origin of the universe. But, how do we know it had an origin? It turns out that the universe is expanding; it is dilating faster and faster. By measuring its velocity, we can calculate when it began expanding: 13.8 billion years ago. In fact, no star is more than 13 billion years old.

\* Editor-in-chief of *Voices of Mexico*; tejian@unam.mx.



Dunlap University

The cosmic web. Each bright point is a cluster of galaxies.

**vm: What is the thread that ties the web together?**

**JF:** Energy and matter. Due to vacuum research during the last century, it was discovered that energy is fluctuating everywhere. Let's use as an example a box where it would be possible to remove absolutely all matter—this is impossible because the walls of a box evaporate. But let's just suppose it were possible—, even so, there would still be energy fluctuating inside the box. These fluctuations of the vacuum, called a false vacuum, can generate one or several universes. Invisible fields exist in a vacuum, such as the gravitational field, the magnetic field, the quantum field, the field that generates the Higgs particle, all of which fluctuate and permeate the universe, even where there is no matter. (By the way, the Higgs particle is responsible for giving particles mass.) Thirteen billion, eight hundred million years ago, energy was liberated from vacuum and cosmic expansion began. Two kinds of matter were created: so-called dark matter and common, everyday matter. We should remember Einstein's equation  $E=mc^2$ , which means that if energy exists, matter can be generated.

Dark matter does not emit light, or reflect it, or disperse it, or absorb it: that is, this dark matter is invisible. How do we know it exists? Because it attracts visible objects. If we consider the Earth, it attracts the Moon because of its gravity, or the Sun attracts the planets and that's why the Solar System doesn't disintegrate. Dark matter attracts visible objects. If we add up all the observable matter in any galaxy (stars and gas and dust clouds), the mass of the visible objects is not enough to keep a galaxy from evaporating, for its stars not to leave its gravitational pull. Thus, we can infer that dark matter exists, matter that exerts gravity and is invisible. This means that when the

cosmos began to expand, in the first instants of the early universe, the energy freed up from the vacuum produced dark matter and ordinary matter, the kind we're made up of: protons, electrons, neutrons.

The early universe produced the energy responsible for its own expansion, which constitutes 70 percent of what exists. Dark matter, which produces gravity and which we can't see, makes up 26 percent of everything in the universe; and the other 4 percent is ordinary matter, which makes up the stars, the planets, and human beings. How do we know this? By studying radiation: light is 0.005 percent of the content of the universe.

Using telescopes, analyzing the radiation from the stars, and, of course, applying our extraordinary brains, we've come to infer the nature of the cosmos. In addition, we've also observed that the early universe wasn't perfectly homogeneous; it had irregularities, and, as it expanded, matter settled into the cosmic web: galactic clusters, visible and dark matter merged into filaments that surround matter-free spaces.



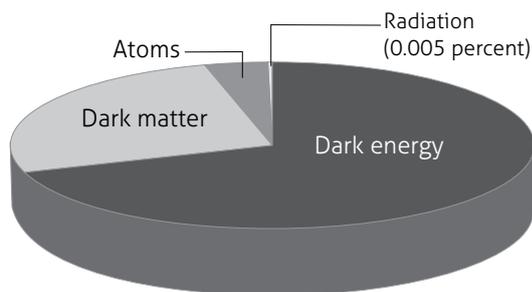
The cosmos's background radiation shows us the non-homogeneities of the early universe.

The region of the cosmic web where our galaxy, the Milky Way, is located is called Laniakea. The name means "open skies" or "immense heaven" in Hawaiian. Some of the world's most powerful telescopes are on Mauna Kea, one of the volcanic islands of the Hawaiian archipelago, which is why that language is used to name some stars.

**vm: What does it mean that the universe is a web? What would happen if the galaxies didn't group together?**

**JF:** If there were no fluctuations in density, that is, if the universe were perfectly homogeneous, no stars, or galaxies, or planets would have formed. For stars to form, there must be variations in density. In the densest places is where gases can come together to create stars. If the

THE CONTENT OF THE UNIVERSE



The most common thing in the universe is dark energy, which is responsible for its expansion; 26 percent is dark matter; 4 percent, ordinary matter, and only 0.005 percent, radiation.<sup>2</sup>

universe were completely homogeneous, the clouds where new stars, planets, and smaller celestial bodies originate would not have been formed.

In the large scale universe, visible matter is distributed in the cosmic web: 100 billion galaxies with an average of 100 billion stars each. We should note that besides stars, galaxies contain clouds of gas and dust, the interstellar medium, which is where the new stars and planetary systems are born.

### **vm:** What is the cycle of the stars?

**JF:** When the universe was formed, only two chemical elements existed: hydrogen and helium. We're talking here about the early universe, when it was less than three minutes old.

We can imagine the cosmos as an expanding gas that cools as it expands. As that happened, the universe's temperature dropped more and more until the gas made up of hydrogen and helium was able to conglomerate in clouds, and inside those clouds the first stars were born. They were made up exclusively of hydrogen and helium. Atoms at the stars' nuclei fused and generated new elements such as nitrogen, carbon, and oxygen, the substance of life.

At the end of their evolution, stars expand—this will happen to the Sun in 4.5 billion years—and hurl new elements into space. The biggest stars explode, and when they do, their atoms collide with each other, forming the heaviest chemical elements like iron, gold, or lead, for example. These elements are less abundant than carbon, nitrogen, and oxygen because they are only formed during stars' explosions.

The matter the stars expel mixes with the interstellar medium gas and dust clouds to form new star systems,

including planets. These stars in turn will hurl substances into space that will mix with other clouds. In this way, generations of stars follow each other. The most recent ones have a larger number of elements like carbon or oxygen. Millions of generations of stars existed before the Sun did, and thanks to the elements that they processed, planetary systems like our own were formed that require considerable amounts of elements like calcium, silicon, or iron.

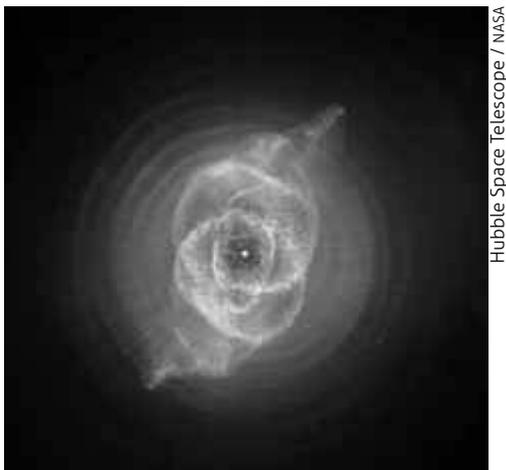
The Solar System was formed just like the others, starting with a gas and dust cloud from the interstellar medium about 4.6 billion years ago. The star formed at the center with almost all the matter from the cloud; what was left over formed the planets; and later, life appeared 3.8 billion years ago when the Earth cooled and numerous comets collided with it, bringing water from the outskirts of the solar system where they had formed.

If we looked at our hand or any part of our body with an electronic microscope, we would be surprised to imagine that each carbon, nitrogen, and oxygen atom had been in the nucleus of a star, and when that star died, it hurled all these atoms into space, which finally became part of our body. That is, we come from the stars. In addition, each proton of every one of those atoms has been traveling through the universe for 13.8 billion years: each one entered a star, became part of another element, and when it concluded its evolution, the star sent the new atoms out into space, which gave rise to another star, the creation of new elements, which then ended up expelled into space, mixing with the cloud that gave birth to the Solar System. So, each one of our protons has been going in and out of stars for 13.8 billion years, and have become part of life.



Hubble Space Telescope / NASA

In 4.5 billion years, the Sun will hurl its outer atmosphere into space, which will contain the chemical elements it created through thermonuclear reactions.



Cloud forming a planetary system.

**vm: So, is it infinite regeneration?**

**JF:** No, the moment will come when stars stop forming, the interstellar medium gas will be exhausted. The existing ones will burn out. The universe will continue to expand and it will be colder and colder.

For example, when the Sun's life cycle ends, it will expand and lose its outer layers, its nucleus will slowly cool; the Earth will evaporate; all matter on Earth will become part of another cloud; and new planetary systems will certainly be formed. But the stars' energy runs out more and more, and there will be no more gas and dust clouds from which new stars could be born.

One characteristic of physics, and therefore of astrophysics, is that if you know the conditions of a system, you can know what its past was like and you can predict its future. It's difficult to define time; but science measures it based on the increased disorder. For example, in order to live, human beings create disorder: the light of the Sun comes and is absorbed by plants, and then we eat them and obtain energy. Nevertheless the plants cannot use the energy we emit to generate more fruits or vegetables; because not enough of it is useful. All the energy of the universe is degrading, and there are fewer and fewer gas and dust clouds to form new stars. So, in trillions of years all stars will burn out. How can we know how long stars last? The thermonuclear reactions that take place in the stars' nuclei can be calculated; how much matter is transformed into energy. For instance, it's possible to calculate how much energy the Sun is emitting and how much matter is being transformed into energy, using the  $E=mc^2$  formula, and infer how long the Sun's evolution will last.

All the ancient galaxies no longer have gas; their stars are burning out and they no longer form stars. It's interesting to imagine how, in a billion years, our galaxy, the Milky Way, will merge with the Andromeda galaxy, and during that integration, many stars will be formed. But after that, the interstellar gas will get used up and there will no longer be any new stars.



In a billion years the Andromeda galaxy will merge with our own.

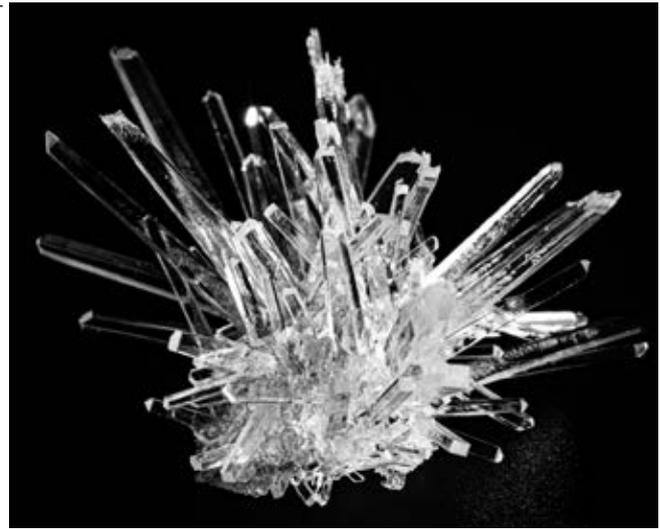
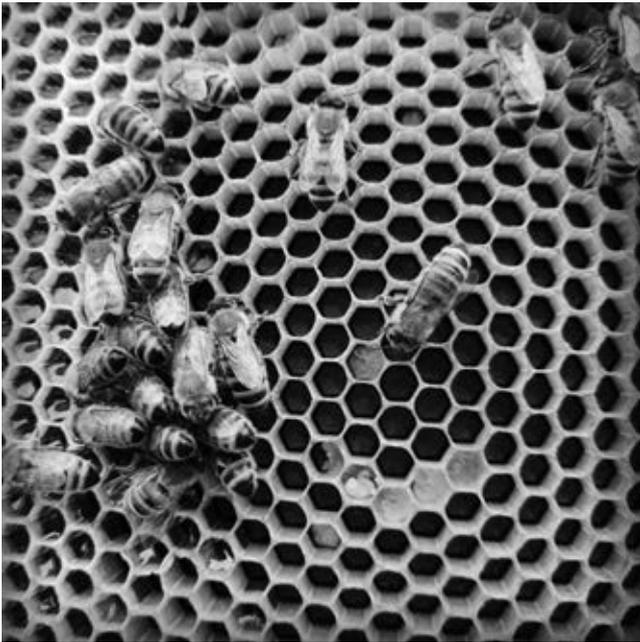
In addition, since the universe is expanding, it's dilating with the cosmic web. The voids between the filaments are increasing in size.

**vm: What analogy would you make with this cosmic web on Earth?**

**JF:** In nature, large groups of objects called emergent phenomena appear spontaneously and unpredictably. For example, if we place an ant on a table, it will begin to walk from one side to the other until it becomes exhausted and dies. If we put ten ants on the table, the same thing happens. But when we have 1000 ants, they begin to organize; some go and look for water; others, for food; others find a place to make a nest. This is an emerging phenomenon. Another example are neurons: a single neuron is pretty stupid, but in our brains, which have 100 billion neurons, we witness emergent phenomena: if there is a stimulus, a group of neurons gets fired up that enables thinking, creating, or communicating. Emergent phenomena occur in the universe. Matter is organized in galaxies, and galaxies, stars, planets, and life are created in the cosmic web. **MM**

▼  
**Notes**

- 1 julieta@astro.unam.mx.
- 2 Chart developed by the author.



Aleida Rueda\*  
javier cruz\*\*

## Weaving Wonders With No Purpose at All

Ringo Starr has been almost universally liked for decades as probably the most affable member of the Beatles, the nicest guy in the universe who might have benefited from that incredible stroke of luck of being in the picture when the band decided to look beyond Pete Best. Every now and then you would read about him being one of the most underrated drummers in the history of rock, but he was rarely praised beyond his niceness and sense of humor.

But take a stroll down memory lane on the Internet nowadays —look up something like “Ringo genius” — and

you’ll be surprised not just by the sheer number of entries defending the proposition, but mostly by the depth, detail, and, indeed, passion of the arguments. Take, for instance, the analysis of Ringo’s creativity in the song *Tomorrow Never Knows*, as presented by George Hrab.<sup>1</sup> He describes the drumming as a “pattern” that provides “space” and something solid “upon which the song could be built.” Hrab makes no mention of Richard Starkey’s childhood, but the man himself does in an interview with fellow musician Dave Stewart, of Eurythmics fame. Recounting the year and a half spent as a sickly child in a hospital, Ringo recalls that when a drum kit arrived in his room, “I wanted to be a drummer from that day.”<sup>2</sup>

Lovely as the anecdote may be, the truly interesting revelation came a few seconds earlier: “I learned to knit in the hospital.” It appears that the future master of drum-

\* Academic at the UNAM’s Complexity Sciences Center (c3) Communications Unit; aleidarueda@gmail.com.

\*\* Editor in the Journalism Unit of the UNAM General Office for the Dissemination of Science (DGDC); www.dgdc.unam.mx/labpdc; cruzmena@dgdc.unam.mx.

ming patterns between straight and swing and some invention in between learned the basics of the warp and weft weaving forms at the same time. Mere coincidence? Probably... yet one is tempted to make a connection with remarks made by the Mexican historian of medicine, José Luis Díaz, regarding the reasons why the human brain is stimulated —arguably into overdrive— by musical patterns: “The brain works based on rhythmic cycles,” he said in an interview on TVUNAM.<sup>3</sup> For its part, “musical language transmits emotions,” but the musical emotion “is not a primary emotion; it is highly sophisticated.” And that is why almost only human beings feel it. Yet, the human brain responds differently to these sorts of emotional “messages” than it does to more primitive emotional stimuli, such as fear, joy, or sadness.

Surely one big difference is that these basal stimuli are rather blunt, whereas music follows patterns, and these in turn excite the brain’s rhythmic tendencies. In this sense, then, one could wonder whether something apparently as simple as the weaving patterns Ringo learned in his hospital stays helped him create “Beatles” patterns later in life. Taking this notion beyond Ringo’s individual experience, perhaps other structures could produce similar emotional responses related not to musical rhythms but to visual aesthetics. Think of the visible metal network sustaining the Eiffel Tower or the arrangement of stone at Tulum’s Maya ruins, or even the extraordinary effect produced by Escher’s mesmerizing tessellations.

This last example is particularly interesting. A visit to the Escher Museum in The Hague is likely to trigger a healthy dose of emotional responses,<sup>4</sup> but among them will almost surely be profound admiration for the human being who designed these artistic patterns in the first place: Maurits Cornelis Escher himself. He did design some impressive tessellations, but he did not actually invent them. Indeed, patterns of repeating tiles can be found in nature, such as in honeycombs, mudcracks, scales on the skins of several animals, and a variety of crystal formations. Regardless of their relative aesthetic value, if these forms were to produce admiration... who should one admire?

Let’s go even further, much further, in opposing directions of the physical scale. The iridescent patterns formed by light bouncing off minute structures on the wings of some flying insects are surely admirable. So are the apparent arrangements of stars that night after night can

Patterns of repeating tiles can be found in nature, such as in honeycombs, mudcracks, scales on the skins of several animals, and a variety of crystal formations.

deeply move those still fortunate enough to be able to regularly enjoy the night sky.

We admire the sky and the light reflected from the wings of insects, and historically societies have come up with “creators” to admire for these “designs.” But, what if we accept the premise that there are no such creators... and indeed no design at all? What if these amazing things, and very many more, happened just..., well, just *because*?

At some level the question is philosophical, but it can also be addressed taking advantage of scientific reasoning. In the book *Fronteras de la Física en el Siglo XXI* (Frontiers of Physics in the Twenty-first Century), UNAM physicist Octavio Miramontes argues that the evolution of matter was inevitable. In other words, even if we started —conceptually— from the absence of matter, this *vacuum* is not *nothing*, for it is impossible to get rid of all manner of fields (electromagnetic, gravitational) and, crucially, fluctuations within these fields. “Quantum vacuum contains no particulate matter,” writes Miramontes, “but it does contain fluctuations which cause virtual particles to materialize, only to disappear at once, in mutual annihilation.”<sup>5</sup> These fluctuations produced the Big Bang, and only a few microseconds later, while the Universe underwent a rapid initial expansion, “matter condensed in its first manifestations,” goes the text.

Still, from there to the wings of butterflies, there is a lot of explaining to be done, and quantum field fluctuations can take us only so far. For the purposes of this story, let’s make a titanic fast forward to when planet Earth already exists,<sup>6</sup> properly equipped with the required inanimate context (oceans, some atmosphere, solid ground, climate) and perhaps a healthy dose of organic molecules floating about. Life is not there... not yet; but it will soon appear as the ultimate patterned structure: the living cell. The thing to keep in mind at all times, though, is that what followed happened spontaneously, without agency, as a result of no intervention, with no purpose at all. It was desired by no one, it was designed by no one.

How, then, did a soup of organic molecules render a living cell? At this point, Miramontes demands from us that we pay attention to two tenets of the science of complex systems: *self-organization* and *emerging properties*. Self-organization is a characteristic process of complex systems, which Miramontes describes as “a set of similar elements interacting among themselves to generate emerging properties at the global scale.” Thus, self-organization “is an emerging order, generating without an intervening central control or a predefined plan.... This new order usually manifests itself as the spontaneous ... formation of space-time patterns where there were none before, and as the possibility of highly organized collective behavior, in the absence of predetermined designs.”

There may not be a plan, design, or central control, but there are the laws of physics to begin with. In particular the Second Law of Thermodynamics puts a direction on all spontaneous processes: they must happen in such a way that the entropy of the whole system in the final state is no less than in the initial state. Not ever. But there is a catch: as stated in textbooks and taught in classes, the Second Law applies to systems that are thermodynamically closed, isolated, and in equilibrium. Alas, life occurs in systems thermodynamically open and very much in interaction with the environment and, consequently, far from equilibrium.

“These are two separate worlds,” said Miramontes in a socially-distanced interview with us. Yet, even for open systems, if their energy input is cut and they are left on their own, they will tend to evolve toward states of lowest energy, and do so spontaneously. So, the question is whether the theoretical body of thermodynamics of dissipative systems away from equilibrium is good enough to account for the spontaneous emergence of single-cell living organisms from the soup of organic molecules. If this process is to be understood in the realm of complex systems, Miramontes’s text identifies the presence of a physical

Self-organization is an emerging order, generating without an intervening central control or a predefined plan.... This new order usually manifests itself as the spontaneous ... formation of space-time patterns where there were none before.

frontier separating the organism from its environment as a crucial condition for the emergence of self-organization and higher complexity levels. This is precisely what the cell membrane does: it isolates the interior of the cell from the outside environment, sustains differences in concentration of vital elements on both sides, and allows life processes to take place based on flows of matter and energy. So, can science explain the appearance of the cell membrane?

Mariana Benítez studies uni- and multi-celled organisms at the UNAM Center for Complexity Sciences. She told us that she has been pondering recently the artificial nature of the separation between biology, physics and chemistry when considering questions of this sort. In her research she frequently encounters processes from those three fields occurring simultaneously and in feedback: bacteria may aggregate due to surface tension, for instance (a purely mechanical effect), but these very bacteria will secrete substances that in turn modify the surface tension mid process. Nevertheless, the principles of non-equilibrium thermodynamics are there, she says. From genetic regulation networks (in the scale of cells) to resilience of ecosystems (a much bigger scale), “whether we make it explicit or not, we are using these very powerful principles.”<sup>7</sup> She has seen examples of cells organizing in geometric patterns that minimize surface tension, and thus overall energy. One such example occurs in the eyes of flies, but Benítez told us that thermodynamics helps us understand why the final pattern is the one it is, “but we couldn’t explain the whole process along each stage of development of the embryo, because it goes through a set of leaps in levels of organization along which it is hard to maintain continuity in explanation. Each leap in organization level seems to trigger different processes, so it will be important to develop broader conceptual frameworks.”

Miramontes appears to agree: “We don’t have yet the First, Second, or Third Laws of Complexity,” he said. Nevertheless, at least regarding the standing problem of the spontaneous assembly of the cell membrane, the thermodynamic theory—historically conceived with systems of much less complexity in mind—is not fundamentally wrong, although still insufficient. For both Miramontes and Benítez, some of the missing pieces will come from the science of complex systems.

Miramontes identifies one particular path to pursue: “The transition from a molecule in the realm of the in-

Increasing levels of complexity rendered patterns of cells we now call *tissue*, which is itself a word etymologically related to the Latin *texere*, meaning “to weave.”

animate to one in the realm of the living is an information transition. The molecule becomes capable of storing and subsequently transmitting information.” This happens at the molecular scale, lower than the cellular scale of the membrane problem, but, for it all to occur spontaneously, thermodynamics dictates that an increase in overall entropy must occur. Entropy is a rather uncomfortable variable, probably because it can be defined in different ways. Its original form was close to the more intuitive concept of energy, but most recent treatments define entropy precisely in terms of information. Moreover, seminal work from the 1980s aims at linking entropy with evolutionary theory.<sup>8</sup> According to Edward Wiley (University of Kansas) and Daniel Brooks (University of Toronto), “The addition of information to any system increases the entropy of that system” (a crucial condition for spontaneous phenomena); and, since “evolution may be described as a nonequilibrium process involving the conversion of information from one form to another,”<sup>9</sup> they propose a biological interpretation of entropy to account for the theory of evolution in terms of thermodynamics.

Much of the theoretical framework seems to be still in construction. We do know, however, that organic macromolecules found themselves enclosed within membranes of living cells. These membranes were the result of the spontaneous assembly of smaller molecules in patterns with favorable properties. The cells they allowed for eventually merged into multicellular organisms, which in turn produced more complex patterns capable of responding to stimuli from the environment and, in evolutionary time, adapting to it. Eventually, increasing levels of complexity rendered patterns of cells we now call *tissue* (muscle, connective, etc.), which is itself a word etymologically related to the Latin *texere*, meaning “to weave.”

In a sense, the circle is then closing. Physics and biology from the last couple of centuries give us hints of how it could possibly be that the relatively simple pattern of

molecules we call the cell membrane spontaneously formed, desired by no one and designed by no one. To better understand this foundational process, and the explosive chain of events that followed for eons up to the biological tissue that is somehow us, the scientists we read from and talked to point in the direction of new frameworks in the realm of the science of complex systems.

But the potential goes beyond explaining un-designed, amazing phenomena. Humankind has had some success making new designs by learning from nature. Lorena Caballero, a professor at the UNAM School of Sciences where she studies skin patterns on animals, entertained these ideas in an interview. “Systems that mimic nature must be adaptive and energetically optimized.” She insists on identifying and analyzing the interactions of the component parts of the system of interest, saying, “Emerging spaces and bio-inspired processes will be possible from the angle of complexity.”

Ringo explains the uniqueness of his drumming style on the basis that he was a left-handed individual playing drums set for right-handed people. This put him in situations in which patterns emerged as adaptive solutions of least effort. “I can’t struggle like that,” he told Dave Stewart. “It comes naturally to me or it doesn’t come at all.”

Un-designed, functional patterns obviously have come naturally to this world. Making sense of them, however, will probably demand novel forms of scientific research. ■■■

## Notes

1 George Hrab is a drummer with The Philadelphia Hunk Authority. His take on Ringo can be found at <https://www.youtube.com/watch?v=7CB8xToC-CU>.

2 <https://www.youtube.com/watch?v=3fbjHQxOZZU&t=201s>.

3 <https://tv.unam.mx/portfolio-item/musica-y-cerebro-2/>, minute 12:23.

4 A virtual visit is possible at <https://www.escherinhetpaleis.nl/>.

5 O. Miramontes, “Evolución y materia compleja,” in O. Miramontes and K. Volke, eds., *Fronteras de la física en el siglo XXI* (Mexico City: CopIt-arXives, 2013), <http://scifunam.fisica.unam.mx/mir/copit/TS0011ES/TS0011ES.html>.

6 Pun very much intended.

7 Interview with the authors.

8 For a thorough overview, see J. Collier, “Entropy in Evolution,” in *Biology and Philosophy* 1 (1986), pp. 5-24.

9 E. O. Wiley and Daniel R. Brooks, “Victims of History —A Nonequilibrium Approach to Evolution,” *Systematic Biology* 31, no. 1 (1982), pp. 1-24, <https://doi.org/10.1093/sysbio/31.1.1>.

Jorge Cadena-Roa\*

## Networks In Movement



Thomas de Luze / Unsplash.com

**S**ocial movements are a form of collective action. If we understand them like this, we will then ask how a certain number of people enter into contact, communicate with each other, and decide to act concertedly to achieve an end they have decided on, put forward demands to others using a range of forms of protest, and seek out allies. They resort to some form of organization, rudimentary, informal, and temporary as it may be. Even in large demonstrations, we see that people pick a starting and end point, carry banners and placards with the names of their organizations and their demands on them, express their determination to get what they want, and shout more or less shared slogans.

Demonstrations have the aim of reiterating to the public their demands and indicating that the demonstrators deserve what they're asking for and have enough num-

bers and power to overcome their opponents' resistance. As Charles Tilly put it, protests have the intention of consciously or unconsciously deploying performative and expressive resources that show the public and their opponents that those protesting are *wUNC* (worthy, united, numerous, and committed). Anti-crime marches that bring together victims of violence, whether perpetrated by organized crime or the authorities, show they are *wUNC*, as do the protests of the teachers' movement, whose participants are mainly government workers.

Since social movements are a form of collective action that implies a certain degree of communication and coordination by participants, the smallest unit of analysis is those who coordinate among themselves to demand that another party does or does not do something. The relations among these parties are not unidirectional, but are made up of interactions among them, and stimulate processes of co-evolution: those who participate in collective actions change reciprocally when they define reality

\* Researcher at the UNAM Center for Interdisciplinary Research in the Sciences and Humanities (CEIICH); cadenaroa@gmail.com.

The important nodes are those that are interconnected and whose presence or absence has consequences for what happens in a network.

and decide a course of action to influence others and as a result of the processes of change they initiate.

In contrast with this relational perspective, others attribute individuals with certain traits or essences that are expressed when they enter into contact with someone else. From structural-functionalist perspectives, roles and interests are assigned to persons and groups as a function of the place they occupy in structures. From a relational perspective (that is, one that looks at interactions), new ideas, forms of behavior, orientations, and commitments arise. This is why it is important to identify the parties that interrelate and how, when, and where they do so, as well as which regularities and novel elements arise out of that. Social movements can be seen as relationships and groups of relationships among at least three parties: those making a demand, the party they demand should act, and the public.

While it is generally agreed that social movements represent a form of collective action and that the concepts of networks and the fabric of society are appropriate for describing the links among participants, allies, and opponents, sometimes references to them are no more than metaphors. However, analyzing networks allows us to identify the nodes that interrelate, describe their links through matrices and graphs, measure their characteristics and properties, and formalize and mathematically model the relations among them.

Graphically, the links between nodes are represented with lines; the nodes may represent individuals, groups, organizations, or institutions. Depending on their number and their links, this creates a network: a system of interconnections that express stable structural and interactive relationships. The former consist of the size of the network, its density, its centrality, and the sub-groups or clusters. Nodes that are not linked to any others are of no sociological interest; they represent isolated, disconnected individuals, alien to the network we are focused on. The important ones are those that are interconnected and whose presence or absence has consequences for what

happens in the network. The interactive properties are derived from the relationships among nodes: their form, transactional content, frequency, duration, and the direction of the flows of exchange (what flows from one node to another and back), and the combination or juxtaposition of certain networks vis-à-vis others (for example, between a neighborhood association, a political party, or a migrant settlement).

Network analysis allows us to understand structural and interactive relationships that depend on the way nodes link up. Not all are connected in the same way and some have closer ties than others. Not all those that could be part of a network are included, which means they are useful for also understanding exclusions and describing hierarchies. Networks can be more or less open. For example, organizations in the anti-crime movement call on the support of the entire population, but those with a revolutionary orientation, whether anarchist or Marxist, demand loyalty to their ideology and political objectives.

## Some Findings

Network perspective applied to the study of social movements has made it possible to note relationships, patterns, regularities, adaptation processes, learning, and co-evolution of the parties. A network perspective poses questions about who knows whom, how close they are to each other, what the degree of trust is among them, who is included and who is not, what the transactional content of the relationship is, and what impact the network's characteristics has on their origin, trajectory, and outcomes.

Network analysis makes it possible to show that the formation of the organizational fabric that fostered Mexico's transition to democracy resulted from the gradual creation of grass-roots organizations in the countryside, in unions, and in cities, which put forward demands based on the project of the Mexican Revolution but that were suppressed by an increasingly authoritarian state. With time, these organizations linked up in activist networks of civic, social, political, and institutional organizations—in the latter case, like universities and the Catholic Church—and from there came into contact with aggrieved populations distributed nationwide. These groups of aggrieved populations and their natural leaders established relationships with professional politicians and

came to understand that to advance their material demands and conditions, the country had to become democratic. Thus, over decades, the networks of alternative trust broadened out, facilitating their cooperation and rejecting the corporatist policies of the Institutional Revolutionary Party (PRI) and the state.

It is well known that not all those who would benefit from the achievement of social movements' aims actually participate in them. Not all women participate in the women's movement; only some do. The same is true of others like the student, environmental, and indigenous movements, as well as the others. But why, then do some participate and others do not? The answers vary: one is that participating in the production of a collective good is irrational and that the rational course of action is to scrounge off the result of other people's efforts. So, why participate in an environmentalist movement, for example, if when it achieves its objectives nobody can prevent me from breathing less polluted air?

Now, from the network perspective, the answer is that differential participation in social movements derives from the structural proximity of certain individuals to those movements' recruiting networks, which exercise a force of attraction, and the absence of networks opposed to that movement, which generate rejection. For example, young educated women would participate in movements to legalize abortion unless they are also linked to conservative groups, religious or not. In those social movements, as well as other forms of collective action, different networks strengthen or repel other networks.

Alberto Melucci and others have also studied the role of submerged networks in defining grievances that later become public and attempt to displace dominant definitions. In any case, interaction exists among competing or complementary formal and informal networks. This shows the importance of having an open mind when discerning relationships among nodes because they allow us to understand the social structures individuals are situated in and where they come from, how they develop, and how they influence movements. Not taking into account these grid-pattern structures has led some to believe that protests are spontaneous and to minimize the importance of the pre-existing connected makeup of the community.

Knowing that one out of every four participating organizations is not grass-roots, but a group created to lend aid, accompany, or provide services or political or legal in-

A network analysis allows us to observe that what social movements can achieve does not depend solely on their capabilities and power, but also on those opposed to them.

termediation, and that it has the support of international organizations and foundations reveals a great deal about the fabric of society in which protests develop in Mexico.

A network analysis allows us to observe that what social movements can achieve does not depend solely on their capabilities and power, but also on those opposed to them, and allies can make a definitive difference in this respect. The capabilities and power of social movements depend on the degree to which they are connected with other social and political actors and the support they get from them, whether these be political parties, legislative caucuses, the media, or groups that defend rights, provide strategic litigation, or promote social development. For example, if we compare the Oaxaca teachers' movement with the LGBTQ+ movement, we will find similarities. Both are social movements, but we will also see big differences in their way of presenting demands, and in what they have achieved since they emerged in the late 1970s.

The central pillar of the teachers' movement is a national teachers' union local, made up of those dedicated to an activity Mexicans value very highly: education. The LGBTQ+ movement has been so inclusive that it has turned into the movement of lesbian, gay, bisexual, transsexual, transgender, transvestite, intersexual, queer, and other identities (+). This means that it is a diffuse group of organizations without a central pillar similar to that of the teachers and one that seeks the recognition of the rights of a stigmatized, discriminated population. The teachers' movement has rested on periodical pressure-mobilization-negotiation cycles, centered on hikes in wages and benefits. The LGBTQ+ movement has followed an agenda to ensure the dignity of its members, which has implied cultural and legislative changes.

At first glance, it would seem that the teachers' movement's aims were easier to achieve than those of the LGBTQ+ movement. However, the latter has made considerable gains, while the former has not been able to leave behind its annual pressure-mobilization-negotiation cy-

cle. What explains this? There is no single cause, but the difference cannot be attributed to the number of people involved in these movements or the frequency of their protests. The difference seems to be that the LGBTTIQ+ movement is a plural, open, inclusive, non-ideological network, allowing it to receive support from powerful allies and to combine contentious politics with lobbying. By contrast, the teachers have encountered limitations in establishing lasting alliances outside their own ranks. ■■

### Further Reading

Cadena-Roa, Jorge, *Las organizaciones de los movimientos sociales y los movimientos sociales en México, 2000-2014* (Mexico City: FES, 2016).

“¿Qué hay de nuevo con las redes mexicanas de organizaciones civiles?,” in Jorge Cadena-Roa, ed., *Las organizaciones civiles mexicanas hoy* (Mexico City: UNAM, 2004), pp. 155-187.

“State Pacts, Elites, and Social Movements in Mexico’s Transition to Democracy,” in Jack Goldstone, ed., *States, Parties, and Social Movements* (Cambridge: Cambridge University Press, 2003), pp. 107-143.

Cadena-Roa, Jorge, and Javier Hernández Santiago, “Oaxaca: clientelismo, protesta y elecciones,” in G. Zaremberg and M. Muñoz, eds., *Redes y jerarquías* (Mexico City: Flacso-IDRC, 2013), pp. 99-121.

Melucci, Alberto, *Acción colectiva, vida cotidiana y democracia* (Mexico City: El Colegio de México, 1999).

Tilly, Charles, “Contentious Conversations,” *Social Research* no. 65 (1998), pp. 491-510.

**INSTITUTO MATÍAS ROMERO**

**Precio por ejemplar: \$79.00**  
**Suscripción por un año, 3 números, \$165.00**  
(En el extranjero USD \$25.00)

**Forme su colección**  
Números atrasados \$55.00  
(En el extranjero USD \$8.00)

 [imrinfo@sre.gob.mx](mailto:imrinfo@sre.gob.mx)  
<http://www.gob.mx/imr>  
<https://revistadigital.sre.gob.mx>

República de El Salvador Núm. 47, Col. Centro  
Alcaldía Cuauhtémoc, Ciudad de México, C. P. 06080

**Informes:** (55) 36 86 50 00 Exts. 8268 y 8247  
y (55) 36 86 51 48

**Revista Mexicana de POLÍTICA EXTERIOR**  
PUBLICACIÓN QUIMESTRAL  
THE 2010 AGENDA: FIRST FIVE YEARS TOWARDS SUSTAINABLE DEVELOPMENT  
A UN PROGRAMA DE CAMBIO EN EL DESARROLLO DE LA INDUSTRIA  
Procedente: Alejandro Alatorre  
Artículo: Martha Delgado-Pedraza • Bárbara Villanueva Elgueta • José Ramón López Puente • Miguel Ángel Calchauer López • Carlos del Socorro García López • Julia and Nilsa Alvarado Díaz • Francisco Álvarez Romero Beck • Roberto López and Lorena Noya • Edith González  
Suscripción: \$79.00  
INSTITUTO MATÍAS ROMERO  
REVISTA DE RELACIONES EXTERIORES  
PUNTO 4722



Moisés Pablo / Cuartoscuro.com

Luis Raúl González Pérez\*

## Reflections on the Web of Violence And the Denial of Rights

Except when exercised legitimately by authorities, violence implies the negation of norms and of the effective validity of rights. It undermines the bases of the fabric of society and is an attack against individuals. Different kinds of violence exist, with differing degrees, scopes, and forms of expression, the most evident of which are those linked to the insecurity our country is experiencing and those based on gender, ethnicity, sexual orientations, or ideological differences, among others. Over the last several years, we Mexicans have had to learn to live with violence and understand it as a given in our reality. It is something we know will exist and that most people can do practically nothing about, except to hope not to be yet another of its victims.

This uncertainty has no reason to exist; the logical thing would be to assume that the safety of individuals and property should be reasonably guaranteed by the state and that violence outside the law should be exceptional and responded to decisively by the authorities. Unfortunately, this is not the case in reality. If a person is victim of a crime, in most cases, he/she faces red tape and bureaucratic requirements to even make a complaint, and it will probably not be dealt with in a timely, efficient manner. This means that those responsible for the illegal conduct will not be held accountable under the law.

Illegitimate violence usually implies the commission of a crime, which means when it is repeated and goes unpunished, people expect less and less from institutions and mistrust and distance themselves from them. When a crime is committed, people often say things like, “Happily it was just a matter of money,” or “Material things can be replaced,” or “Of all the bad outcomes, this is the

\* Coordinator of the National Autonomous University of Mexico's University Human Rights Program (PUDH-UNAM) and professor at the UNAM School of Law; lrgonzalezp@unam.mx.

least of them.” Frequently, they even paradoxically think that a person was fortunate or had a good day when, for example, having been the victim of a mugging or an assault, he or she is unhurt or has “only” slight injuries after the incident. In this scenario, in which it would seem that impunity and the failure of justice have been institutionalized, many people opt to not report the crimes they are victims of because they consider the intervention of the authorities useless and just a waste of time.

The authorities’ ineffectiveness in preventing insecurity and violence, as well as in guaranteeing that those who break the law are punished for it is one of the main reasons that this kind of behavior not only continues but is propagated. On the one hand, a vicious cycle is established in which the authorities justify the paucity of their results with the argument that impunity exists because most people do not report the crimes they are victims of. However, this overlooks the fact that, even when the number of reports is lower than the number of crimes really committed, when crimes are reported, the percentage of those solved and the perpetrators prosecuted under the law is very low. According to the 2020 National Statistics and Geography Institute (INEGI) National Survey on Victimization and Perception of Public Security, in 2019 a little over 29 percent of households included at least one member who was the victim of a crime, with a total estimate of 22 300 000. While 92.4 percent of crimes were not even reported, of the 7.6 percent actually reported, only 69.1 percent were investigated. Of those, 44.5 percent were not followed up or the investigation provided no answers.

These figures clearly show that when a person commits a crime, the probability of being arrested and punished is very small, which is why those who decide to do so do not consider it a real risk. The fact is that every day, women are attacked or killed, people are kidnapped, robberies with violence and extortion are committed, and people are abused, among other crimes, because those who perpetrate them know and feel that they can do so and they will probably not be held accountable. When society realizes that those responsible for acts of violence and other crimes escape being investigated and punished according to the law, it creates a public perception that the authorities are useless or only of limited value and that norms can be followed or applied discretionally. This makes it impossible to encourage and consolidate a cul-

The very existence of levels of impunity as high as those in Mexico is an incentive for crimes to be committed over and over again, for violence to persist.

ture of legality based on an unavoidable commitment to the rule of law.

Everyone should be reasonably certain that the different authorities will comprehensively fulfill their obligations, always act in accordance with the law, enforce and apply the existing norms, and set a basic priority that guarantees that day-to-day living can proceed with minimal safety. In Mexico, these suppositions are not fulfilled. That is why to a great extent, society as a whole perceives the authorities as having abandoned it to its own devices; this creates fertile ground for crime and violence to continue.

The problem is not that Mexico lacks norms or institutions. We have a wide variety of them for criminal proceedings, both in terms of content and of procedure, and a broad, complex institutional system for the administration of justice. However, clearly the efforts in terms of norms and institutional design are insufficient for solving the existing problems. Impunity subsists in most cases, becoming “*de facto* impunity,” a phenomenon in which, despite the fact that norms and institutions exist, for some reason that transcends or is alien to the legal system, they are not applied or do not operate. The forms are covered, but the essence is left to one side.

The fact that the law is not followed or enforced affects individuals’ rights, but also implies a violation of collective human rights. Mexico is a democracy in which human rights have been at least formally established as the basis for institutional activity. Despite this, multiple issues subsist that contradict the dignity of persons; at least ideally, this should not happen in a law-abiding democratic and social state. Reflecting on the factors that have allowed this state of affairs to prevail in the country and, above all, about what can be done to change it, is of vital importance.

In the first place, we need to break out of the circle of resignation and even indifference that a large part of society is immersed in. The state’s obligation and responsibility to ensure that each and every one of its acts is

carried out in strict compliance of the law are undeniable, as are the promotion, respect for, protection, and guarantee of human rights. It is also true, however, that without the citizenry's active participation, demanding transparency and accountability as well as denouncing and unmasking their absence, the authorities will be under less pressure to act in accordance with the norms and to completely fulfill their functions. Democracy is much more than mere formal procedures for electing the authorities; for it to function, people must also play a more active, responsible role, rooted in solidarity, with regard to public issues.

Respect for and compliance with the law, as well as the recognition of a common dignity that identifies us and makes us recognize in the other a person with equal rights, powers, and capabilities, are values that begin in each member of society, which underline the key for seeking to prevent violence, strengthen legality, and open the door to true tolerance, inclusion, and pluralism. This is the basis for the need for society to strengthen its link to and internalize democracy and human rights as part of its daily existence. The aim of this is to shed patterns of behavior or even cultural practices that promote violence and the infringement of rights, replacing them with others that form the basis for respect, peaceful living, and legality.

In this sense, it is particularly urgent to undertake a real, decided battle in society—not just a rhetorical one—against corruption, something inevitably linked to breaking the law and to the impunity we are beset with. For many, corruption is an inherent part of exercising power, which finds fertile ground for its development in bureaucracies, subject to ineffective, non-transparent regulations without real mechanisms for accountability and that contravene the logic of good government that should reign in the public administration. Corruption is a factor that fosters and aids in perpetuating illegality, inequality, poverty, and exclusion, but above all it is the direct cause of impunity.

In our country, the perception reigns that every situation involving the violation of a norm can be “fixed” and

is not punished; that obeying and enforcing the law is not something certain, but can be the object of negotiation, which depends on each person's economic resources, relations, or political connections. When corruption is the habitual practice, the function of institutions and the nature of laws themselves are perverted; laws are seen as an obstacle that people must overcome to achieve their goals, the best way to which is the manipulation of public power that permits corruption. The consequences of this kind of behavior affect everyone, since it means that rights are no longer in effect, and that, in particular, access to justice is not real but selective. However, those most affected will always be the marginalized, the poorest, those with the greatest dependence on public goods and programs.

This is why it is unavoidable that we must think about and construct a new way of living together that reflects and materializes the kind of society we want to be; a society in which peace, respect for others, the due exercise of rights, the timely fulfillment of obligations, tolerance, solidarity, and inclusion have a place. As I have mentioned, many factors and conditions can be counted among the elements that make up the web of violence and the denial of rights. One is that the state does not fulfill its function of creating the conditions for the consolidation of a safe environment in which the rule of law prevails, and does not honor its basic obligation of being the guarantor of human rights. The very existence of levels of impunity as high as those in Mexico is an incentive for crimes to be committed over and over again, for violence to persist, and for practices opposed to human dignity like torture, disappearances, and homicides, to continue.

Clearly, the main responsibility for this situation changing lies with the state, but society cannot remain indifferent in the face of it and must take a more active role to break the vicious circle made up of violence, impunity, and the denial of rights. Mexico needs to strengthen its institutions and its rule of law. An organized, informed, committed society is called upon to be the driving force and main actor in this process. It must supervise and demand that the authorities on different levels and orders of government become the true professional, responsible, service-oriented bodies that rule and base their actions on obeying the law and respecting human rights. The web of violence, impunity, and denial of rights can change if we understand and deal with it. ■■■

We need to break out of the  
circle of resignation and even  
indifference that a large part of  
society is immersed in.



D. Tamara Martínez Ruiz\*  
Zoe González Martínez\*\*

## Building Sisterhood Sketch of a Living Concept

You're not alone! You're not alone! You're not alone!  
It was all of us! It was all of us! It was all of us!  
Touch one and we'll all answer!

Slogans like these, among many others, sing out in our country's feminist marches. The masses shout these slogans especially when a single demonstrator speaks in public, writes or paints on a monument

or the street, or is apprehended by the police. The rest of the women marchers show their solidarity, empathy, and compassion for the sisters through their songs. They enter into a wave that embraces the differences among women, that envelops them in an identity and turns them into a single force: feminism. Throughout history, feminist women have dedicated themselves to constructing that common space, the safe space of understanding and mutual support among women that today we can call sisterhood.

For feminism, the notion of sisterhood is a shared understanding of the structural causes that put women at a relative disadvantage *vis-à-vis* men. Solidarity and empathy are fundamental for understanding the conditions that limit other women's actions, positions, and experi-

\* Professor at the Morelia UNAM campus of the National School of Higher Studies and head of the UNAM Coordinating Office for Gender Equality; tamara\_martinez@unam.mx.

\*\* Student in political science and international relations at the Center for Economic Research and Teaching (CIDE); zoe.gonzalez@alumnos.cide.edu.

People see in feminism the protest against the macho-boss, and not the rest: our being women together, the practice of relationships among women and the possible liberation of our bodies.

ences. This understanding can be expected first and especially from women themselves, since, taking into account the differences in their lives, and although to a different extent, all of us are oppressed by the same patriarchal structure. This very comprehension, empathy, and accompaniment is what has allowed us to exist and resist down through history, as well as to consolidate our feminist movement that has demanded rights and freedoms for more than 200 years.

The concept of sisterhood arose out of feminist groups in the second half of the twentieth century. Groups for reflection, mutual support, and dialogue organized by feminist women allowed them to express the thoughts and feelings that were not understood by people around them, particularly men. These groups made women feel heard, understood, and accompanied. They became aware of the importance of solidarity and support among women in feminism, since we are the ones who know where we have come from, what social structures limit us, and can understand what our peers experience. Thus, without necessarily implying friendship, sisterhood emerges as a way of behaving among women based on the understanding of the patriarchal structures that limit our bodies and condition our behavior. It is a rejection of the patriarchal, misogynistic discourse that establishes competition and confrontation among women as our natural state.

Because of the experiences shared in consciousness-raising groups, and given the need for a space for understanding and empathy, feminist women coined the concept of sisterhood (*sororidad* in Spanish; *sororité* in French; *sororità* in Italian). In the book *Non credere di avere dei diritti* (literally, Don't Think You Have Rights), the Women's Bookstore of Milan presents a series of chapters that develop the importance of women accompanying each other for their own emancipation and self-awareness. The writers from the cooperative, active since 1975, lay out the creation of the first formal feminist collectives in Western Europe in the second half of the twentieth century.

This need for a space of one's own created by and for women is based on the recognition that the first step for bringing down patriarchal structures is to think of oneself from the standpoint of a non-patriarchal structure, develop authentic thinking of women for women. And this must be done from inside relationships, alliances, and accompaniment that recognize and accept the differences among women, understand the oppressions that limit us, and promote the emancipation of each and every one of us.

People see in feminism the protest against the macho-boss, and not the rest: our being women together, the practice of relationships among women, the possible liberation of our bodies, once begun, of emotions previously blocked or fixated solely on the masculine world, the struggle to give language to that joy (of women).<sup>1</sup>

For her part, the U.S.-American feminist theorist bell hooks, in her *Feminism Is for Everybody*, maintains that women's unity is prohibited by patriarchal norms, which imbues them with internalized misogyny. Through the quest for spaces and attitudes that fostered cooperation and alliances among women, feminism attacked patriarchal judgments among women and disarmed the sexist thinking drilled into them. For hooks, our emancipation arises out of the alliance with each other based on the recognition in solidarity of our differences; that is, feminist sisterhood is rooted in the shared commitment to fight against patriarchal injustice, regardless of the form it takes.<sup>2</sup> Thus, the starting point for sisterhood is recognizing that, regardless of class and ethnic limitations, all women are limited first of all by the patriarchal structure itself, although in different ways and to differing degrees.

In her contribution to Mexican and Latin American feminist theory, researcher Marcela Lagarde refers to the concept of sisterhood as a political position and attitude. It is political in that it puts forward an alternative *modus operandi* to the one dictated by the patriarchal order. It is a new way of conceiving of the nature of interpersonal relationships: "It emerges as an alternative to the politics that denies women positive gender identification, recognition, coming together in concert, and alliances."<sup>3</sup> This is the case without there necessarily being ties of friendship, sympathy, or deference among us. Lagarde also maintains that it is a pact among women. It is necessary to make a pact among ourselves to fight against the misogyny instilled in us culturally and that destroys us. It is an invi-

tation to think outside patriarchal, androcentric logic. “Our pact is to recover the world for women and recover our bodies and our lives for each one of us.”<sup>4</sup>

Thus, the concept was introduced into feminist theory and practices in response to a need to create our own space, to create our own narratives about the movement and the relationships we establish among ourselves. We do not seek universal friendship among women or a code of unconditional support for each other. The idea is to reformulate the relationships that nourish and foster our great feminist movement.<sup>5</sup> Defining our relationships and forms of behavior autonomously allows us, first of all, to emancipate ourselves from the patriarchal principle that dictates some kind of “natural” competition among us. Secondly, it guarantees that the discrepancies and criticisms among us are objective and based on what we do, think, and say, and not on assimilated misogynistic forms of behavior. And third, both inside and outside the movement, it promotes recognition, empathy, and actions *vis-à-vis* the structural inequalities that limit us as a social group.

Today, the concept of sisterhood is polemical among Mexican feminists, and some have even proposed it no longer be used. In the following part of this article, we propose to explain and resolve some of the most polemical points about using this idea in feminism and to develop our proposal about the notion of sisterhood.

One of the most frequent criticisms arises with the interpretation that sisterhood proposes that all women should be friends just because they are women. This criticism is not limited to mere friendship, but also states that the idea is a supposed imperative to “always take the woman’s side” or support all of them in all situations. This criticism is not always the result of misinterpreting the idea, but also because in many situations the limits of sisterly practices have been ambiguous. How do we know if we are acting out of sisterhood or due to mere unjustified or involuntary condescension regarding a woman in a random situation?

It is difficult to answer this question and we won’t try. We do propose, however, to conceive of sisterhood as a point of reference for our actions and not as an imperative or universal rule. We invite everyone to recognize that sisterhood is not affection for other women, but understanding that actions, positions, and situations based on (patriarchal) structural causes oppress and limit them.

Thus, if we base our actions and attitudes on a prior reflection of this kind, we will know that we are acting in sisterhood toward other women, regardless of whether in the end we decide to take the other women’s side or not.

Another common criticism of sisterhood is that it is selective; that is, the criterion for action is arbitrary. From that perspective, women are sisterly only toward those whom they love and only insofar as it is in their interest. Thus, those who raise this criticism complain that sisterhood is exercised as a technique of convenience and not an empathetic, understanding attitude with regard to women’s structural conditions. Even though we think this is an erroneous interpretation of the idea, it is common to see this selectiveness in sisterliness in relationships, for example between feminist women and other women—feminist or not—who occupy positions of power in public institutions particularly. From the standpoint of feminist criticism, those women are often called “guardians of patriarchy,” since they defend institutions that, from the very moment they were created, are patriarchal and do not concern themselves or occupy themselves in eradicating the violence and inequality women are faced with.

This issue is delicate, without a doubt. It should be clearly stated, on the one hand, that the practical drawbacks in the existing exercise of sisterhood are not reason enough to justify the disappearance of the concept and the notion of sisterhood in theoretical, philosophical, and activist feminism. One thing is refining the concept and ensuring that it be better assimilated, and another very different thing is for the movement to treat it as useless and undesirable.

Here, we propose and foster the notion of sisterhood as the understanding and empathy about the structural causes that oppress and sideline women to certain experiences, positions, and realities. In this sense, our proposal aims for an indiscriminate exercise of sisterhood and the understanding of different conditions (class, ethnicity, geographic, etc.) that create more limits or privileges

We propose and foster the notion of sisterhood as the understanding and empathy about the structural causes that oppress and sideline women to certain experiences, positions, and realities.

Sisterhood transcends structures,  
institutions, intersections, and differences  
at the level of the *doxa*. It is empathy toward  
a body that, like mine, has a historicity  
shot through by patriarchy.

for different women. We appeal to questioning the structures and institutions that perpetuate the patriarchal system without losing empathy for the bodies with historicity of women who may occupy those structures. This way it will be easier to understand that a woman who decides and may carry out her professional life inside state institutions is not a traitor to feminist causes.

For many years, our struggle has been precisely for us women to be able to develop personally and professionally as we want to. We already face many pitfalls, created by patriarchy and institutionalized misogyny. It is the safe place we have given ourselves among women in feminism that has allowed us to advance to where we are today. We propose, then, a kind of sisterhood that allows us to continue to be that safe place for all women who decide to live their lives as they please and also for those who have not yet achieved that. This notion of sisterhood bets on an intersectional feminist perspective: it forces us to look to the structural limitations we experience as women that make us different.

Within our proposal is plenty of room for criticism, disagreements, and confrontation among women—which we foster. We are interested in a discussion that is not guided by misogynist behavior and prejudices that we

often interiorize. In the same way, we are interested in racist, classist, and, in general, discriminatory discourses not being camouflaged under the banner of feminism. We seek equal conditions for all women in our society and the world, and we are committed to treating them all equally. For that reason, we propose a notion of sisterhood that understands the historicity shot through with patriarchy and other orders that limit women's bodies. Regardless of political, ideological, class, ethnic, and professional differences, we relate to bodies shot through by historicities and constructed from the subjectivities of the meanings of being women.

For us, then, sisterhood transcends structures, institutions, intersections, and differences at the level of the *doxa*. It is empathy toward a body that, like mine, has a historicity shot through by patriarchy. We aspire to women inside feminism knowing that we are different, that we are adverse to each other, and, above all, that we are accompanied and understood. **MM**

### ▼ Notes

- 1 Librería de Mujeres de Milán, *No creas tener derechos. La generación de la libertad femenina en las ideas y vivencias de un grupo de mujeres*, María Cinta Montagut, trans. (Madrid: Horas y horas, 1991), p. 56.
- 2 bell hooks, *Feminism Is for Everybody* (London: Pluto Press, 2000), p. 37.
- 3 Marcela Lagarde, "Pacto entre mujeres. Sororidad," *Aportes para el debate*, 2006, <https://studylib.es/doc/6973781/pacto-entre-mujeres-sororidad-->, p. 125.
- 4 *Ibid.*, p. 133.
- 5 By feminist movement, we understand the great, dynamic, fluid wave of women that presents an alternative political, philosophical, theoretical, emotional, and social proposal to the heteropatriarchal order.

**www.cisan.unam.mx**

 unamcisan@facebook.com

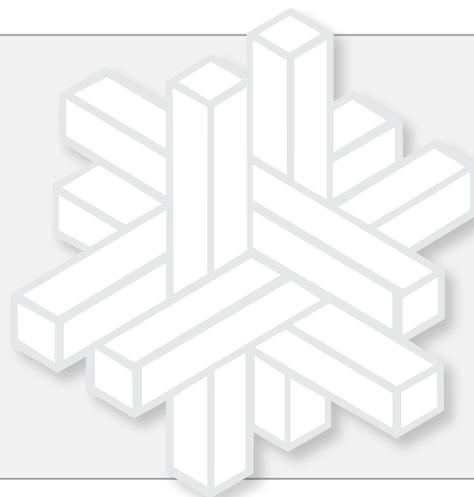
 @cisanunam

 cisanunam.blogspot.mx/

 cisanunamweb

 cisan\_unam

 <http://ru.micisan.unam.mx/>





Rob Walsh / Unsplash.com

Estefanía Cruz Lera\*

## The Politics of Resentment, Protagonist in the Storyline Of Global Populism

**H**ow have we gotten to the point where, amidst one of most serious pandemics in human history, we are witnessing things like the denial of scientific evidence about the SARS-CoV-2 virus and a blind belief in conspiracy theories? What kind of rational thinking is behind mass protests defending “my body, my decision” in the face of mandates of obligatory mask-wearing to protect public health? What explanation can we offer in our hyper-diverse contexts for the increase in hate crimes against people with Asian features for completely baselessly being considered propagators of the virus? How is it possible for people to demand a supposed right

to purchase the vaccine even if they’re not a frontline worker or a member of a vulnerable group? Are these trends new or are they only one more facet of old evils like social individualism, political mistrust, racism, or apophobia (the rejection of the poor)? How are all these variables a breeding ground for the rise in the politics of resentment and the reinvention of global populism?

Today, the sources of meaning for personal and group identities have diversified. The geographical space where we are born, our ethnic group, or the class we identify with are no longer the only variables that feed our political ideology. To that extent, we see a proliferation of opposing rhetoric: progressives vs. reactionaries, liberals vs. conservatives, rural vs. urban, open vs. closed, rational vs. irrational.

\* Researcher at CISAN, UNAM; estefania.1616@comunidad.unam.mx.

What kind of rational thinking is behind mass protests defending “my body, my decision” in the face of mandates of obligatory mask-wearing to protect public health?

The dimensions of political conflict have changed, but confrontation continues. Before, we were mainly divided by our positions on economic decisions; now, cultural and social dimensions have been added to the mix. Thus, in the political sphere, suspicion, distrust, indignation, frustration, and resentment are constantly emerging.

Given social diversification, we can observe two contrasting dynamics: the first is greater tolerance in the public sphere, which facilitates the adoption of inclusive policies. This can be seen mainly in cosmopolitan, progressive contexts gradually exposed to diversity, which have had more time and a larger number of interactions to be able to assume the new demographic reality. The second occurs in places where people feel excluded from national projects, on the margins of societies in which they consider that their demands are eclipsed by the voices of the urban elites and liberal intellectual ghettos, people who have had to abruptly deal with diversity. These contexts breed profound social indignation and political resentment.

In 2005, in the little town of developed Switzerland, Wangen Bei Olten, which has a small Turkish community, local inhabitants engaged in a controversy that opened the door to the conservative/nationalist change in the entire country. The Turkish community dreamed of its mosque having a large minaret that could be visible from anywhere. The minarets are the towers next to mosques from where the muezzin calls to prayer five times a day. The non-Turkish locals thought that construction would be contrary to Swiss national identity and that such an ostentatious Muslim symbol had no place in the city. The local government opposed the minaret’s construction and the conflict grew and grew until it reached Switzerland’s Federal Supreme Court, which authorized the tower’s construction.

In response, in 2009 a conservative political party promoted a national referendum to prohibit the construction of minarets: the proposal received 58 percent of the

vote and was added to the Constitution.<sup>1</sup> The paradox is that the Supreme Court, which had authorized the construction based on the principle of religious freedom, is not elected by popular vote, while the local government is, as are referendums. In these supposedly democratic spaces, the politics of resentment are flowering. And Switzerland is not alone in this.

In 2016, Katherine Cramer did a field study in rural Wisconsin.<sup>2</sup> Her main objective was to understand how Pastor Scott Walker, from a small local community, had become famous enough to run in the U.S. Republican presidential primaries on an ultra-conservative platform. Cramer discovered that rural communities in the United States feel that the country’s liberal elites do not respect their values and way of life; that, in addition, values like hard work, religious devotion, communitarianism, and nationalism, were part of the authentic U.S.-American way of life, which they felt was eroding. Fukuyama points out that “the indignity of invisibility is often worse than the lack of resources” and that this perception is the arsenal of the politics of resentment.<sup>3</sup>

These kinds of episodes of indignation and signs of resentment, considered scandalous in urban areas, soon began to crop up in suburbs and in many cases spread to central U.S. cities. Then came Donald Trump, who demonstrated the fragility of the belief in a receptive, inclusive society. However, the politics of resentment is not exclusive to U.S. exceptionalism. With Orban in Hungary, Erdogan in Turkey, Modi in India, Bolsonaro in Brazil, López Obrador in Mexico, and on many other points on the planet we see how populist leaders, both right and left, come to power as a result of this politics of resentment.

The insurgencies of our time, including the nationalist movements and the rise of the extreme right, reveal a collective fury that almost no contemporary society has escaped from. But, the most concerning issue is that public spheres and common spaces have also become arenas for social resentment. Even places that have gone through profound civil conflicts, that were experiencing greater tolerance and receptiveness to contemporary dynamics related to new freedoms and greater diversity, have also been shaken by the echoes of this way of understanding politics.

One of the best-selling books in post-war Germany is *Germany Is Abolishing Itself: How We Are Putting Our Country in Jeopardy*.<sup>4</sup> In it the author argues that the “open arms”

immigration policy would turn the original German population into a minority in a future that he hopes will never arrive. On the other side of this coin, France has become the stage for terrorist attacks directed at organizations that, exercising freedom of expression and cultural progress, critique very conservative practices of the French Muslim minority. The 2015 terrorist attacks on the *Charlie Hebdo* weekly are clear examples of how “the others,” immigrants and racial and religious minorities, are participants in the politics of resentment and are willing to take it to an extreme.

More frequently, people come to the conclusion that we do not understand the nation we live in. This can be because we do not agree with a social uprising; other times it is because we oppose the direction of reforms and decisions made by our representatives, or because the principles that made us belong seem to be getting weaker and weaker. Panjak Mishra explains it this way: “And yet we find ourselves in an age of anger, with authoritarian leaders manipulating the cynicism and discontent of furious majorities. . . . Suddenly . . . , humanism and rationalism can no longer explain the world we’re living in.”<sup>5</sup>

To gain power, populists offer such solutions that are so simple that their followers think that previous governments’ lack of political will, and not these measures’ possible pernicious effects on the common welfare, is the reason that they were not implemented before. Mounk explains, “When populists are running for office, they primarily direct their ire against ethnic or religious groups whom they don’t recognize as part of the ‘real’ people. Once populists hold office, they increasingly direct their ire against a second target: all institutions, formal or informal, that dare to contest their claim to a moral monopoly of representation.”<sup>6</sup> This shows that the politics of resentment has the collateral effects of putting institutions in check and risking the foundations of democracy.

Populist political leaders win office with promises to return power to the people, to redirect the course of the nation, to reestablish the relationship between government and the governed, damaged by the corrupt elites, and to renew the national spirit. Taken together, economic insecurity, the feeling of having lost social status, conflictive social interactions, unfulfilled promises of growth and progress, and the perception of not being a participant in the cultural elites or of enjoying their proportional amount of power are the components of the politics

Fukuyama points out that  
“the indignity of invisibility is often  
worse than the lack of resources” and that  
this perception is the arsenal of  
the politics of resentment.

of social resentment that populists take advantage of to take the helm.

One of the main problems is that populisms arise from unexpected places. Rich and poor, native and immigrant populations, minorities and majorities can all equally vote for populist leaders. Donald Trump became president thanks to poor, Midwestern, white U.S. supporters, but he was also backed by businessmen from the economic elite. He got votes from the white majority, but also from Afro-Americans, Latinxs, and people from universities. From different political identities, in almost all the corners of the Earth, the politics of resentment materializes with populist impetus. A president with that orientation is elected by a people moved by that impetus, a people who buy his messages and projects. That is how autocrats, demagogues, psychopaths, misogynists, nativists, racists, and their ilk are taking power.

The problem is, then, that all the resentment and social rage are discovered only late in the game, once they have become a political movement, whose noxious effects on democratic institutions have already made themselves felt. Only societies’ common sense, the existence of viable opportunities for indignant communities that have been made invisible, and clear horizons of social reconciliation can stop the onslaught of these leaders, who will take things to their most dire extremes without the slightest hesitation. As long as these conditions do not exist, there will continue to be unreasonable, aggravated violence like what we have seen over and over in world history.

When public health is challenged in the supposed defense of individual freedoms, when xenophobia and nativism stigmatize Asians and attempt to put immigrants in the last place in line for vaccination, when economic elites demand their right to purchase a vaccine instead of putting frontline workers first despite their greater vulnerability, we see how it is easier to feed the politics of

resentment than its antidotes: unity, resilience, empathy, and communitarianism. Populist leaders can be thrown out by democratic organizations and movements, but the populist impulses fostered by resentment and social rage will persist.

The ideas of social equity and individual empowerment have never before had so many defenders, although at the same time they have never felt so distant and difficult to achieve. The truth is that politics can be chaotic and destructive, but it also has its redeeming moments, even the politics of resentment. The question here is whether populist leaders will withdraw after being defeated in elections. But, will we overcome the politics of resentment and leave behind the era of social rage? These complex challenges cannot be overcome by decree; they require more than a change of colors in our governments. **MM**

▼  
Notes

- 1 Dina Wyler, "The Swiss Minaret Ban Referendum and Switzerland's International Reputation: A Vote with an Impact," *Journal of Muslim Minority Affairs* vol. 37, no. 4, 2017, pp. 413-425; doi: 10.1080/13602004.2017.1405506.
- 2 Katherine Cramer, *The Politics of Resentment: Rural Consciousness in Wisconsin and the Rise of Scott Walker* (Chicago: University of Chicago Press/Urbana, 2016).
- 3 Francis Fukuyama, *Identity: The Demand for Dignity and the Politics of Resentment* (New York: Farrar, Straus and Giroux, 2018), p. 80.
- 4 Thilo Sarrazin, *Germany Is Abolishing Itself: How We Are Putting Our Country in Jeopardy* (Berlin: Deutsche Verlags-Anstalt, 2010).
- 5 Panjak Minshra, "Welcome to the Age of Anger," *The Guardian*, December 8, 2016, <https://www.theguardian.com/politics/2016/dec/08/welcome-age-anger-brex-it-trump>.
- 6 Yascha Mounk, *The People vs. Democracy. Why Our Freedom Is in Danger and How to Save It* (Cambridge, Massachusetts: Harvard University Press, 2018), p. 43.

**C** EL COLEGIO  
**M** DE MÉXICO

Novedad editorial

libros.colmex.mx



Disponible a la venta en formato  
*eBook*

LAS  
CINCO VIDAS DE  
GENARO  
GARCÍA LUNA

Guadalupe Correa-Cabrera | Tony Payan

De venta en

▶ Google Play amazon iTunes

Síguenos en redes sociales   



# Problemas del DESARROLLO

Revista Latinoamericana  
de Economía

ISSN:0301-7036

Volumen 52, número 204, enero-marzo 2021

El efecto del microcrédito en el PIB de Colombia, 2005-2018

*David Andrés Londoño-Bedoya, Claudia Marcela Garzón-Quintero  
y María Antonieta Collazos-Ortiz*

América Central en el mercado de emisiones: una evaluación multicriterio de proyectos del  
Mecanismo de Desarrollo Limpio

*Alfonso Mercado García y Cintya Berenice Molina Rodríguez*

Impacto de las energías renovables en las emisiones de gases efecto invernadero en México

*Horacio Catalán Alonso*

Global financial changes and results in Latin America: *à la carte* selection of regulation

*Katuska King Mantilla*

La restricción externa de México y la composición del comercio en un enfoque bilateral

*Carlos A. Carrasco y Edgar Demetrio Tovar-García*

Modelo insumo producto dinámico para una economía pequeña

*Noé Arón Fuentes y Sarah Martínez Pellégrini*

El rol de los acuerdos intra y extrarregionales en los flujos comerciales: el caso de la Comunidad  
Andina de Naciones

*Alan Fairlie, Erika Collantes y Lakshmi Castillo*

Publicación trimestral del Instituto de Investigaciones Económicas, UNAM

Suscripciones y ventas: [revprode@unam.mx](mailto:revprode@unam.mx)

Teléfono: (52) 55 56 23 01 05

<https://www.probdes.iiec.unam.mx>



Georgina Araceli Torres Vargas\*

## Thematic and Authorship Networks of Publications on Mexico-U.S. Migration

The changes the Internet has produced in the circulation of digital information have created a need for establishing guidelines for research methods that can be used to collect and analyze data from various online environments. Netnography is one of the methods that helps researchers in various fields. It is being used more and more widely because it facilitates collecting large amounts of data and information that can be quickly organized and analyzed with a variety of computer tools.

Using information study techniques, one can explore the thematic trends in research by disciplinary field and identify connections between authors. In the example I present here, I gathered data from the Web of Science and then analyzed social networks with the vosviewer program. The objective was to discover thematic networks and networks of authors in the field of Mexico-United States migration studies.

### Scientific Collaboration

Since the middle of the twentieth century, collaboration among research teams made up of peers from a variety of disciplines, institutions, and countries has become common practice because it facilitates analyzing a subject of mutual interest from various perspectives. Scientific collaboration is also referred to as team science or large-scale collaboration. The way participants are organized depends on the nature of the research, as well as the resources available and each researcher's expertise.

Information and communications technologies provide useful tools to facilitate the research process and allow for the exchange of points of view among research teams. This means that each researcher can establish work relationships with colleagues from all over the world and become part of academic networks.

Participation in academic networks can generate co-authored publications. In bibliometrics, these are valued as a means of making scientific production more visible.

---

\* Director and Researcher at the Institute for Library and Information Research (IIBI), UNAM; gatv@unam.mx.

Netnography is a technique that uses public access information to identify the elements related to the object of study.

With regard to Mexico-U.S. migration, we can discover which aspects are studied academically and what connections exist among authors who study these issues.

### The Usefulness of Netnography

Implementing research methods that allow for recovering, combining, and analyzing information and data generated by a variety of online contexts and virtual communities is one of the many changes produced by the invention and growing use of the Internet.

Netnography, as one of the most widely used of these methods, is a technique that uses public access information to identify the elements related to the object of study, thereby allowing researchers to make inferences. It includes the use of technological tools to extract and analyze information and data contained in digital media, like those that facilitate text mining to analyze terms, mine the data, and analyze digital images and social networks, or other aspects.

While most authors recognize that netnography is useful for market studies,<sup>1</sup> this is not the only area where it can be applied. Its utility extends to areas such as tourism or sociology,<sup>2</sup> and, to a large extent, it can also be used in information studies.

### Analysis of Social Networks

Social networks have been analyzed from various perspectives. Studies of social networks have been used to examine problems like marginalization, lack of safety, or community health issues. In information studies, they are also useful for finding co-authorship networks.

The basic units for observing social networks are the *social actors* (persons or entities) that they link together. Sociograms,<sup>3</sup> representing social relationships, are a fundamental tool for analyzing social networks. However, a

sociogram cannot be constructed purely on the basis of a computer program; it also requires data collection.

In this exercise, I collected records from the Web of Science, a bibliographic database of scientific publications covering various fields of knowledge. The guarantee Web of Science offers is that it facilitates the retrieval of articles published in prestigious international journals and, thus, reflects the current dynamics in the production of knowledge.

To systematize the data and then generate the corresponding graph, I used vosviewer, a program appropriate for analyzing bibliometric networks, to discover the connections between authors. It also allows for text mining to visualize terms and their interrelations based on word frequency.

Without these two tools it would be very difficult to do network analysis and obtain up-to-date results. The vast editorial production and the bibliographical data that refer to it constitute large amounts of information that cannot be processed manually. This requires computing tools that offer speed and accuracy in extracting and systematizing the relevant data.

Text mining using the titles of articles is fundamental for establishing the connections between topics. It is a research area of automatic information processing that analyzes digital information to find trends, patterns, and associations in a collection of texts, and is helpful in discovering knowledge contained in a large body of unstructured information.<sup>4</sup>

### Thematic and Authorship Networks On the Study of Mexico-U.S. Migration

As stated above, for the case illustrated here, I extracted data from the Web of Science; I then processed the search results with vosviewer software to generate the sociograms, or maps, that allow us to visualize the relationships within the network. Here I graphically represent the connections between topics:

#### *Thematic Retrieval from Web of Science*

Here, I retrieved the data by using the term “migration Mexico and United States of America,” which produced 270 records. I chose the 100 most recent.







Steven Cornfield / Unsplash.com

Camelia Tigau\*  
Alejandro Mosqueda\*\*

## Virtual Mobility Pathways: Medical Cooperation and Science Diplomacy during Pandemics

### Introduction

In 2020 and 2021, around 4 billion people, or half the world's population, have been asked by their governments to stay home to prevent the spread of the deadly COVID-19 virus.<sup>1</sup> As we all know, this physical immobility has increased virtual connections and enhanced collaboration in the sciences, particularly in the medical ones. The pan-

demetic has indeed revealed the value of networks in dealing with crises.<sup>2</sup> For the purpose of this issue of *Voices of Mexico*, these multiplying networks could be referred to as the “web” of international medical cooperation, visible in topics of common interest such as vaccine diplomacy.

In general, the history of world pandemics has shown paradoxical effects, with privileged actors and positive learning processes that come out of terrible circumstances, contrasting with the number of dead, sick, and unemployed. The great lockdown of 2020 and 2021 has also exacerbated existing inequalities on both national and international levels. It has led to increasingly precarious conditions for manual workers and to the dangerous exposure of already vulnerable minorities, such as poor people, migrants,<sup>3</sup> and women.

\* Researcher at CISAN UNAM; cameliatigau@hotmail.com.

\*\* Postdoctoral fellow at the UNAM Center for Research on North America, supervised by Camelia Tigau; mosquedaesparza.josealejandro@gmail.com (UNAM. Programa de Becas Posdoctorales en la UNAM, Becario del Centro de Investigaciones sobre América del Norte, asesorado por la doctora Camelia Tigau).

While it doesn't ignore this situation, our article tries to point to the opportunities, political changes and lessons derived from the pandemic. No wonder: most of the scientific literature quoted in this piece was written in 2020, a year of thriving scientific discoveries.

Physical immobility has intensified virtual cooperation on a global level, making use of digital technologies in certain scientific, technological, engineering, and mathematics (STEM) occupations. Above all, medicine has become more intertwined, internationalized, and globalized. A previous article in *Voices of Mexico* described medicine as one of the most internationalized professions.<sup>4</sup> The pandemic has reinforced this through the exchange of medical knowledge, worldwide validation of vaccines, and telemedicine, among other means. It has caused a boom in telehealth, in which information technologies are used in providing health consults from a distance.<sup>5</sup> This was a good way to minimize the spread of the virus, provide healthcare in developing countries, effectively utilize healthcare professionals' time, and alleviate mental health issues, according to Muhammad Abdul Kadir.<sup>6</sup>

This article deals with the upsurge of science diplomacy in international negotiations, its metamorphosis into vaccine diplomacy and, in general, its applications for the evolution of diplomacy as a complex system. The discussion is structured as follows: a) immobility: a gateway to virtual cooperation during the pandemic; b) the virtues of science diplomacy; and, c) vaccine diplomacy: evidence from Mexico.

### **Immobility: A Gateway to Virtual Cooperation during the Pandemic**

The "stay-at-home" strategy has been analyzed by some authors as a device for controlling the population, in which the social dimension of isolated people is denied.<sup>7</sup> Following this logic, social interactions are perceived as possible dangers and people live in fear. Rodrigo Bulamah also speaks of the "times and metaphors" of pandemics as the "end of autonomy to move and get things going."<sup>8</sup>

However, if we take a step back in time, we recall that most people in the world do not travel much and tend to live in their place of origin. A work by Schewel invites us to look at the "stayers,"<sup>9</sup> people who remain in their birthplaces or within the borders of the countries where they

**The great lockdown of 2020 and 2021 has also exacerbated existing inequalities and led to the dangerous exposure of already vulnerable minorities, such as poor people, migrants, and women.**

were born. Studying immobility today has indeed become more relevant as a self-reflection exercise during the pandemic. What have we done with our immobility? Just reinforcing the fact that most human beings are social, many of us have acquired a virtual life.

Schewel defines immobility as a spatial continuity in an individual's center of gravity over a period of time.<sup>10</sup> His study teaches us to distinguish between planned immobility –the desire to stay– and imposed immobility –when people who want to move are forced to stay. In his view, some of the positive aspects of immobility are stimulating the local economy and creating community life.<sup>11</sup> During the pandemic, Schewel's observation may be adapted to "family life" as a social micro-environment where people can interact with each other, apart from the virtual sphere.

### **On the Virtues of Science Diplomacy**

Underlying our research is the idea that immobility during the pandemic has changed diplomatic relations, science diplomacy, and medical cooperation. Previous literature on science diplomacy has pointed to its endless possibilities as a cross-cultural way of developing relations where politics fail. Griset describes how science diplomacy is often seen as a diplomatic channel for maintaining relations in times of tension.<sup>12</sup> It can also be seen as a factor of peace that brings people closer together. This vision, says Griset, is connected to the ideal of "pure" science, elevated above the contingencies of the world, and it has long since been deconstructed to implement a more realistic vision of what science and scientists must be as the foundations of society.

Another work, by Olga Krasnyak, positions science diplomacy at the intersection of three fields.<sup>13</sup> First, there is diplomacy for science that serves the interests of international research institutions from multiple countries.

Second, science diplomacy addresses concerns about global issues and assists in bilateral and multilateral relations. Third, science for diplomacy or science diplomacy refers to the power of science to build bridges between nations when political relationships are strained or limited.

The medical diplomacy of the COVID-19 pandemic is a type of science in diplomatic cooperation, with the World Health Organization (WHO) and national scientific bodies at the core of the global fight against the virus. As opposed to the questions raised about multilateral diplomacy, especially the performance of the WHO, non-official or alternative diplomacy networks have reemerged and increased during COVID-19, opening up new cooperation possibilities at a local level. Science diplomacy was also used to tackle the disinformation crisis and conspiracy theories that accompany the pandemic,<sup>14</sup> polarizing and spreading racism and distrust:

From a communication perspective, this had two important consequences. First, it meant that the health messages that authorities were trying to convey to the public became increasingly contested. Second, it made it difficult for public authorities to debunk and challenge the premises of the conspiracies without risking to further amplify their message. Conspiracy theories are embraced by the public not for their factual value but for their ability to provide a (false) sense of reassurance in times of great uncertainty. Fact-based debunking thus risks elevating their visibility without necessarily undermining their appeal.<sup>15</sup>

Scientific evidence was also used to argue against the numerous speculations about the origin of the coronavirus and its being a biological weapon. Therefore, the pandemic has raised the profile of global health issues and increased discussions about the international mechanisms for regulating biological security, as Baklitskiy and Shakirov show.<sup>16</sup>

**The “stay-at-home” strategy has been analyzed by some authors as a device for controlling the population, in which the social dimension of isolated people is denied.**

## Vaccine Diplomacy: Evidence from Mexico

Innovation diplomacy emerged as a related concept to science diplomacy and a cardinal value of modern society, being used as a means of soft power, the promotion of trade, and a way to build “the alliances necessary to transcend antagonisms or cultural differences to deal globally with issues such as the environment, health, or migration.”<sup>17</sup> Vaccine diplomacy is an application of this broader concept of innovation diplomacy.

The pandemic in Mexico has also increased medical cooperation and emphasized the role of telemedicine. In autumn 2020, with most vaccines in the third phase of trials, the country has (re)discovered international medical cooperation as a way out of the crisis. Besides the agreements and scientific assessment needed to import the vaccine, there were talks of trilateral cooperation among Mexico, Argentina, and the United Kingdom. More specifically, official messages announced that the Liomont (Mexico) and mAbxience (Argentina) laboratories were in a position to produce the vaccine to generate self-sufficiency in their countries, applying technology from Astra Zeneca and the University of Oxford.<sup>18</sup> This is a hybrid type of cooperation involving at least three countries, public universities, and private actors in a complex approach to solve a humanitarian crisis of this type.

Other messages by Mexico’s Ministry of Foreign Affairs highlighted several international cooperation efforts to combat the COVID-19 pandemic. An official document offers details on some joint programs that indirectly reaffirm the hypothesis of the importance of science in diplomacy:

With Russia, based on the exchange of technical information between health authorities and Mexico’s offer to participate with 1 000 people in phase III clinical trials. With Italy, through the Lazzaro Spallanzani National Institute of Infectious Diseases to participate in clinical studies of the GRAD-COV2 vaccine.

Also, a German government mission of experts was carried out to exchange experiences and knowledge about the pandemic, in addition to the donation of 100 000 PCR tests to our country. The Republic of Korea donated six PCR test kits and approximately 48 000 ready-to-use tests. A dialogue was held with the minister of foreign affairs of Norway, Eriksen Søreide, on

Science diplomacy was also used to tackle the disinformation crisis and conspiracy theories that accompany the pandemic, polarizing and spreading racism and distrust.

the Coalition for Epidemic Preparedness Innovations (CEPI) and common proposals in the United Nations.<sup>19</sup>

It is not the purpose of this article to evaluate the efficiency of such networks and cooperation. However, we do want to emphasize the way that science—be it corporate or public—has been re-considered and re-situated as part of the basis of international cooperation for solving a complex humanitarian emergency like COVID-19. Only these types of hybrid cooperation can work in the real worldwide web of globalization.

To conclude, we should recall an article inspired by the pandemic written by Javier Solana,<sup>20</sup> a former secretary of NATO, in which he proposes the approach of “human diplomacy” to solve this and other ongoing crises such as climate change and food scarcity. Building on the history of diplomacy, which first centered on feudal lords (Middle Ages), then on empires (nineteenth century), and more recently on states and corporations (twentieth century), Solana thinks twenty-first century diplomacy should center on human beings. This should be done by involving local authorities and civil society and by acting regionally rather than globally on specific matters such as migration. According to Solana,

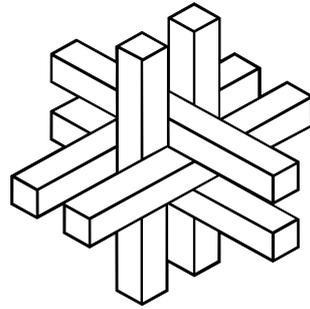
increasingly global, science-based, depoliticized international organizations should exist for the provision of global public goods and to prevent beggar-thy-neighbor policies, which are present even amidst the current pandemic in the form of “vaccine nationalism.” We need to make sure that channels for constructive diplomatic dialogue never cease to exist, and that multilateral organizations and fora are hefty, effective, and legitimate enough to offer adequate responses to global problems.<sup>21</sup>

Some studies have considered Solana a congregator-type leader,<sup>22</sup> prone to solve differences and come up with creative solutions in diplomacy. Focusing diplomacy on

human beings appears to be a crucial point for global and regional cooperation agendas in order to prevent future humanitarian crises. The use of science-based decisions for a more human diplomacy seems a rational approach for contributing to a brighter global future. ■■■

## Notes

- 1 Muhammad Abdul Kadir, “Role of Telemedicine in Healthcare during COVID-19 Pandemic in Developing Countries,” *Telehealth and Medicine Today* (2020), doi: <https://doi.org/10.30953/tmt.v5.187>.
- 2 Juan Luis Manfredi Sánchez, “Introduction to the Forum on COVID-19,” *The Hague Journal of Diplomacy* 15, no. 4 (2020), pp. 517-519.
- 3 Lorenzo Guadagno, “Migrants and the COVID-19 Pandemic: An Initial Analysis,” *Migrations Research Series* no. 60 (2020), pp. 2-25.
- 4 Camelia Tigau, “Medical Migration to the U.S.: The Case for a Brain Gain Theory,” *Voices of Mexico* no. 104 (November 2017), pp. 30-33.
- 5 Muhammad Abdul Kadir, op. cit., p. 8.
- 6 Ibid., p. 1.
- 7 Dino di Nella and Victoria Ibáñez, “Causas y consecuencias de la pandemia de COVID-19. De la inmovilidad de la humanidad a la circulación desconcentrada de personas,” *Derechos en acción* no. 15 (2020), p. 435.
- 8 Rodrigo Charafeddine Bulamah, “Times and Metaphors of Pandemics,” *Social Anthropology* 28, no. 2 (2020), p. 232.
- 9 Kerilyn Schewel, “Understanding Immobility: Moving beyond the Mobility Bias in Migration Studies,” *International Migration Review* 54, no. 2 (2020), pp. 328-355.
- 10 Ibid., p. 329.
- 11 Ibid., p. 343.
- 12 Pascal Griset, “Innovation Diplomacy: A New Concept for Ancient Practices?” *The Hague Journal of Diplomacy* 15 (2020), p. 386.
- 13 Olga Krasnyak, “The Apollo-Soyuz Test Project: Construction of an Ideal Type of Science Diplomacy,” *The Hague Journal of Diplomacy* 13, no. 4 (2018), pp. 410-431.
- 14 Sophie L. Vériter, Corneliu Bjola, and Joachim A. Koops, “Tackling COVID-19 Disinformation: Internal and External Challenges for the European Union,” *The Hague Journal of Diplomacy* 15, no. 4 (2020), p. 571.
- 15 Ibid., pp. 573-574.
- 16 Andrey Baklitskiy and Oleg Shakirov, “From Germs Control to Arms Control: Security Negotiations in the Era of Coronavirus,” *The Hague Journal of Diplomacy* 15, no. 4 (2020), p. 542.
- 17 Pascal Griset, op. cit., p. 386.
- 18 Arturo Sánchez Jiménez, “Vacuna entre México y Argentina, muestra de inversión en la ciencia,” *La Jornada* (September 23, 2020), <https://www.jornada.com.mx/ultimas/politica/2020/09/23/vacuna-entre-mexico-y-argentina-muestra-de-inversion-en-la-ciencia-2880.html>, accessed January 19, 2021.
- 19 Ministry of Foreign Relations, “Gobierno de México impulsa y respalda talento mexicano que desarrolla vacunas y tratamientos contra COVID-19,” August 25, 2020, <https://www.gob.mx/sre/articulos/gobierno-de-mexico-impulsa-y-respalda-talento-mexicano-que-desarrolla-vacunas-y-tratamientos-contra-covid-19-250987?idiom=es>.
- 20 Javier Solana, “The Case for ‘Human Diplomacy,’” *The Hague Journal of Diplomacy* 15, no. 4 (2020), pp. 670-680.
- 21 Ibid., pp. 673-674.
- 22 Corneliu Bjola, “Diplomatic Leadership in Times of International Crisis: The Maverick, the Congregator, and the Pragmatist,” *The Hague Journal of Diplomacy* 10, no. 1 (2015), pp. 4-9.



# CISAN

publications

*Manual CISAN de metadatos para la descripción documental*

Norma Aída Manzanera Silva

México: CISAN, UNAM, 2021  
ISBN: 978-607-30-4013-6  
Descarga gratuita en  
Repositorio MiCISAN



*Cruzando la frontera II. Narrativas de la migración: literaturas*

Graciela Martínez-Zalce  
Araón Díaz Mendiburo  
(editores)

México: CISAN, UNAM, 2020  
ISBN: 978-607-30-4078-5  
Precio: \$200.00



*La democracia amenazada. ¿Por qué surgen los populismos?*

Paz Consuelo Márquez-Padilla

México: CISAN, UNAM, 2020  
ISBN: 978-607-30-3739-6  
Precio: \$150.00



*Anti-Immigrant policies during the Trump era*

Mónica Vereá (editor)

México: CISAN, UNAM, 2020  
ISBN: 978-607-30-3563-7  
Precio: \$600.00



For further information contact

Centro de Investigaciones sobre América del Norte, CISAN

Universidad Nacional Autónoma de México, Torre de Humanidades II, piso 9, Ciudad Universitaria, 04510

México, D.F. Tels. (011 5255) 5623 0308, ext. 42001 y 5623 0281 e-mail: [voicesmx@unam.mx](mailto:voicesmx@unam.mx)

[www.cisan.unam.mx](http://www.cisan.unam.mx)

# clp

LA IMAGEN Y LA LETRA SE AMAN CONVULSIVAMENTE  
EN UNA COLECCIÓN ÚNICA DE ENSAYOS FOTOGRÁFICOS



*colección luz portátil*

PRIMERA CAMPAÑA  
Artes de México  
RESISTENCIA Y APOYO

LANZAMOS CINCO PAQUETES PARA ATESORAR  
LA COLECCIÓN LUZ PORTÁTIL  
Y AYUDARNOS PARA QUE  
ARTES DE MÉXICO  
SOBREVIVA

Córdoba 69, Col. Roma, Ciudad de México  
servicios.clientes@artesdemexico.com  
www.artesdemexico.com | 55 5525 5905

ARTES  
DE MÉXICO  
artesdemexico.com

Instagram @editorialartesdemexico  
Twitter @artesdeMexico  
Facebook /EditorialArtesdeMexico

Gina Bechelany\*

# PIECING TOGETHER

Piecing together their stories, women and children make a blanket that keeps them safe from violence. At the same time, through art, weaving, and embroidering, they decry injustice. Taking fabric scraps from here and there, small hands and expert hands piece together a relationship based on respect and understanding for women who have faced violence. Through the act of sewing and embroidering, the Healing Blanket strengthens ties among women, while the act itself yields a public space to raise and rekindle the voices of women against violence. Here, we present a conversation with the blanket's creator, Marietta Bernstorff, an artist, curator, and promoter of innovative projects bridging art with a number of societal issues.

---

\* Psychologist and editor; gbechelany@gmail.com.

Photos courtesy of the Photographers' Collective and the Patchwork Healing Blanket/*La manta de curación* project.



Jazmín Andrade



**Gina Bechelany:** To what degree has the Healing Blanket helped cast light on the problem of violence against women?

**Marietta Bernstorff:** With this project, every woman is transformed into an advocate for change, and she can see the power of art and her visual voice as a tool against violence. This makes our cry ring louder: ¡Ya basta! Stop now! Stop the violence against all beings and against Mother Earth. Everything is connected, and understanding that is important to our future.

**GB:** Would you argue that this is a space for spiritual healing? How are dialogue and healing spawned in diverse communities?

**MB:** When we all come together to work on this project, healing emerges through the meditation that stems from creating a piece for another woman. For every piece, we tell a visual story birthed in the soul of each woman. In doing so, something powerful fills the room, and this can happen virtually, too. We're building a community and sharing our stories, and that makes us stronger. Many women have written to me to tell me how they've felt while

making patchwork pieces. It's very spiritual! It's more powerful than violence! It's a healing transformation that every woman feels when, at the end of it all, she sees all the blankets together.

I don't have a formula for this kind of activism. It's something far older, a power coming from within all women. We can feel it if we really tap into that level of intuition we have as women. This intuition is almost psychic, which is probably why men are afraid of women and call us witches. I think it's possible for all of us to heal, but it gets very hard when our processes are hindered by religious dogmas, social status, or, worse still, by targeting other women due to jealousy, competition, or racism. We have to unlearn so many things that we've been taught as women, including our relationship to men and power!

**GB:** Do you believe this social art project can evolve to become a subversive political movement?

**MB:** Yes. This massive work of public art, Patchwork Healing Blanket/*La manta de curación*, is a platform for women's transformation at a global level. First of all, we transform ourselves,

our inner selves, and then we become that force that's as old as the planet and the cosmos.

Being listened to isn't enough to change violence in the world. To change this madness, first, we need to listen to ourselves, understand ourselves, and help ourselves mutually as women of all cultures and social classes. Only then can our cries ring louder, for all women and for Mother Earth.

Then, we'll join forces with our sisters all over the world, because this violence against women, children, and Mother Earth is ubiquitous—and growing!

There's a union and strength we women all have inside us. You can feel it, right? As a woman, there's something we can't describe, a deep energy we all have. You can feel it. Something happens, and that's when we reach enlightenment as women together, as a reaction that art awakens inside us: the knowledge that not everything in this world is material. You can feel something more spiritual when you look at the art pieces by all these women, whose ages range from six to seventy-five.

Violence against women has been accepted and even tolerated throughout history. Many feminists argue that it's the product of a deeply entrenched patriarchal culture that promotes and rewards male domination. They posit that, in our patriarchal culture, men are more prone to use violence to maintain their dominant positions.

Through the act of sewing and embroidering, the Healing Blanket strengthens ties among women, while the act itself yields a public space to raise and rekindle the voices of women against violence.

This idea is probably correct, but I don't blame men—that would give them too much power. We give them that power. We women make up half of the global population. Why should we give them our power? It's just that we are partially responsible for this madness. We forget our own strengths, and, sometimes, we misuse them. We raise these men. We're their grandmothers, mothers, aunts, sisters, daughters, wives, and lovers, so why do we give them so much power over us? We have to start by undoing those patriarchal societies in our countries, cities, communities, and among ourselves as women. We have to educate girls and boys on new ideas on the roles of women and men, with kindness for one another and respect for our differences, joining forces so that, one day, we might save this planet we're all currently destroying. We have to stop blaming everything on men or women; we are a part of this human history, and we can change it if we want.



Reina Lizeth Hernández Millán

**GB:** But why through art?

**MB:** Art is a way of seeing, feeling, and experiencing life. It's a much greater force than other, destructive forces. Art enters one's soul, and other people's souls, and remains in our unconscious memory for generations. It's a non-violent way of creating communities of tolerance for each other.

Some might call it a revolution, but it started very long ago, not with this art project or with others happening in the world, created by women who use textile art, embroidery, painting, and other mediums. We, the women artists, writers, curators, activists, historians, homemakers, students, grandmothers, etc., are taking up what other women have shared for centuries: their dreams, their art, and their memories of having fought for women to rise up and fight against this violence.

**GB:** Personally, what lessons can you take with you from this community embroidery? Did it meet your expectations? What's your perspective, now that the project has progressed so much from

when you started the idea until now that you have more than 600 pieces?

**MB:** Many years ago, when I was in school, I read something by the writer James Baldwin, and it stuck in my mind: "The victim who is able to articulate the situation of the victim has ceased to be a victim: he or she has become a threat." The idea is that women rising up and expressing themselves through art, against something in their personal histories, or simply to help women defend themselves, is enough.

"Art is a way of seeing, feeling, and experiencing life. It's a much greater force than other, destructive forces. Art enters one's soul, and other people's souls, and remains in our unconscious memory for generations. It's a non-violent way of creating communities of tolerance for each other."



Reina Lizeth Hernández Millán

**GB:** What's next for Marietta and the Women Embroiders of Time?

**MB:** This project has been developing over the years, and the more community art projects I take on with women, the more clearly I see things. I'm merely a builder of bridges because I can see that, if we join forces, we can accomplish anything. So I have to keep going for the future generations, the ones that will have to finish this Patchwork Healing Blanket/*La manta de curación*.

The Embroiders of Time project was born after the Patchwork Healing Blanket/*La manta de curación*. It emerged when we were together at the House of Time, while working on the patchwork blankets. The energy was good, so we came up with another project for women embroidering, with its own mission and destiny as a collective. As I mentioned, many women's art collectives have been cropping up, and we hope to invite all of them to our new virtual conversation platform on the Patchwork Healing Blanket/*La manta de curación* on Facebook and YouTube, until we might meet again and continue our mission to bring our blankets to every city and country, visiting women around the world to talk and join forces so that we might put a stop to this shadow pandemic, as the United Nations has called it. **MM**



Reina Lizeth Hernández Millán

Cynthia Martínez Benavides\*

# MENDING THE PUBLIC SPACE THROUGH COLLECTIVE WEAVING AND EMBROIDERY

Where might one begin the story of a seminal experience gestated in the realm of the everyday? And how might one measure the political dimensions of intimate space? It's hard to know what everyday thing, act, or phenomenon will morph into a memorable milestone, marking a point of no return, the foundation of something new. Perhaps something unexpected emerges when the seeds scattered and planted by those before us spontaneously sprout.

---

\* Head of the Metropolitan Autonomous University House of Time Cultural Center; [cyntmtz@hotmail.com](mailto:cyntmtz@hotmail.com).  
Photos courtesy of House of Time Cultural Center, at the Autonomous Metropolitan University.

Universities harbor this great potential; given their public natures and their function as spaces for criticism and thought transformation, they gather multiple people, who, across time, nurture the soil with their actions and deliberations so that projects that might not have flourished in other contexts may thrive.

Sensitive to the exchange of knowledge, this parcel of fertile land at the House of Time Cultural Center of the Autonomous Metropolitan University was home to Patchwork Healing Blanket/*La manta de curación*, a community arts project envisioned by Marietta Bernstorff in 2019. The project employed the patchwork textile technique as an axis for the collective desire to end violence against women, children, and Mother Earth. Drawing from a tradition being resignified across women's circles around the world, weaving and embroidering can catalyze collective cultural action to heal and cure the normalized presence of violence.

This space for the construction of meaning, fostered by the project and by the House of Time, would host the "artist" embroidery workshop led by Ivonne Ortiz Saavedra, which was designed to accompany the open call for pieces for Patchwork Healing Blanket/*La manta de curación*. As the months went by, workshop participants came together to form a group they called The Women Embroiderers of Time, meeting on a weekly basis to review and assemble the textile material gathered in the bright rooms of the House of Time.

The collective aspect of their work is worth mentioning, and the group's openness to anyone who wished to participate greatly contributed to the project. Women from the neighborhood joined, attracted to the group's dynamics, along with

The memory of having covered the heart of this great city with a blanket embroidered by the hands of hundreds of women and children from Mexico and around the world, and by the sum of their wills to heal our public space and inhabit it with collective care, in liberty, will never be forgotten.



Patricia Rivero



artists bringing their own pieces, community workshop participants, feminist academics, and artist embroiderers, all of whom shared the open call among their communities. In the end, they all joined this great team to craft the blanket.

Women Embroiderers of Time became a “*colectiva*” of collectives (the Spanish *colectivo* is subversively gendered with an “a” to signify a women’s collective). Their enthusiasm for cultural community action paved the way for the project Patchwork Healing Blanket/*La manta de curación*, presented publicly at the Zócalo, Mexico City’s main public square, on January 26, 2020.

We must recognize the support that myriad areas of the university community lent to this project: first, we should thank the General Dissemination Coordinating Office, which recognized the relevance of housing a cultural project of this kind on its premises; academically, at the Autonomous Metropolitan University (UAM), we received support from the Master’s Program in Women’s Studies and the Doctoral Program in Feminist Studies, both at the Xochimilco campus, which shared the open call, proposed areas to accompany the blanket’s public presentation, and installed tents providing psychological and legal aid to those at the event; likewise, we received ample support from UAM Feminist Collective, with students from several UAM areas guiding the conversation spaces and helping with the logistics in general.



Given the collaboration with the university's academic bodies, the blanket project created ties with other groups with inclinations for the arts and textile activism. For instance, the community of Chilean women in Mexico, whose social movement is heavily articulated around embroidery, spread the open call across their networks in support of the project. Likewise, the Art, Creativity, and Feminism Colloquium, focused on activist embroidery and organized by Eli Bartra, PhD, at Casa del Tiempo in late October of 2019, spread the open call and the project among its specialized public, leading to the active participation of Frederique Drillhon, Rosa Borrás, and Liliana Elvira Moctezuma, who had presented at the colloquium and became stalwart in their commitment to the Patchwork Healing Blanket/*La manta de curación* from then on.

Regarding the project's meaningfully collaborative aspect, I would also like to mention the cultural groups and collectives at the House of Time: the Women's Urban Narrators' Collective, a group of neighboring women liaised by Margara Cervantes, Aurora Escoto, and Carlos Alfaro; the group of embroidering women at Factory of Arts and Crafts (Tlahuac Lighthouse), with Erika Karina Jimenez, Mabel Arellano Luna, and Alejandro Rincon, and the volunteer group yz Proyectos, coordinated by Rosa Morales and her team. At House of Time, we benefitted from the

invaluable support of Francisco Arellano and María Guadalupe Montiel Salinas. The First Printing House of America, our sister facility that gave us support and refuge on the weekend of the event, was also key.

To conclude, I would like to recognize the Embroiderers of Time, who came to know each other throughout the process and contributed to our commitment, work, life philosophy, and empathic listening. My sincere gratitude goes out to Ivonne Ortíz Saavedra, who started and directed the embroidery workshop and gave the group structure, as well as to Guadalupe Arreola, Lourdes Almeida, Frédérique Drilhon, Magali Pérez, Samantha Medina, Jimena Cancino, Cecilia Alvarado, Tessa Brissac, Osmayra Córdoba, Guadalupe Montiel, Dora Napolitano, Karen Schmeisser, Guadalupe Huacuz, Liliana Elvira Moctezuma, and Virginia Lara.

The memory of having covered the heart of this great city with a blanket embroidered by the hands of hundreds of women and children from Mexico and around the world, and by the sum of their wills to heal our public space and inhabit it with collective care, in liberty, will never be forgotten. **MM**



Ludmila Díaz LR



Miguel Sosme\*

# The Textile Tradition The Fabric Of Meaning



**T**he art of spinning and weaving among indigenous communities in Mexico is complex, not only in terms of the processes, skills, and technique involved, but also because of its meanings and symbols, which date back to pre-Columbian times. The textile arts remain inextricably linked to femininity and the private space and have been cherished by ancient and contemporary societies alike.

The connection between women and the thread can be gleaned across precolonial pictographic documents, as well as in religious iconography, sculpture, ceramics, and throughout Mesoamerica's creation myths in general. To the Nahua people, masculine and feminine tasks were defined from the beginning of time: men would till the land, while women would spin and weave with the backstrap loom. The first indigenous couple to populate the Earth did so, as did those who followed: "Then they made a man and a woman: the man was called Uxumuco and she was called Cipactonal. And they were sent to till the soil, and she, to spin and weave . . ." <sup>1</sup>

---

\* Anthropologist researching and promoting Mexican textiles; miguelangelsosme@hotmail.com.



As such, the textile arts were part of the life and destiny of pre-Columbian indigenous women: their threads and tools accompanied them from birth to death, and even after death. Adults would give newborn girls the tools associated with their gender, symbolically instructing them in their use: “If the one being baptized was a female, she was paired with all the womanly treasures, namely the tools needed to weave and spin, like a spindle, shuttle, sewing chest, and a cup for spinning.”<sup>2</sup>

By age fourteen, girls had already learned how to weave, and at about sixteen, they would fully master the task. At that point, they were ready for marriage, permanently joining their village’s community, economic, and sociocultural life. From then on, a woman would be charged with clothing her consort and offspring and, if she were to die in childbirth, she would ascend to the western part of the universe, Cihuatlampa, where, among other tasks, she would devote herself to spinning.

Furthermore, when an elder woman felt that death was nigh, she would don her best attire and be buried in it, embarking on

her journey to the other world with her main “weapons”: her loom and spindle. Archaeological evidence shows that pre-Hispanic indigenous women were buried with their domestic tools, including those associated with textile dressmaking. Even today, in contemporary Amuzgo communities, funerary trousseaus include the weaving models from which spinsters copied their designs.

Appreciation for the invaluable textile mastery among indigenous communities is far from fortuitous: their clothing has not only proven practical when it comes to covering the body; it constitutes a sacred talent that the gods gave women at the beginning of time. Indeed, we may find one or more goddesses with ties to femininity and textile work in all Mesoamerican cultures: the goddesses Xochiquetzal, Ixchel, Chicomecóatl, and Cicpactonal are renowned for having originated the art of weaving and for protecting the women who take up the task. Likewise, multiple documents preceding the arrival of Hernán Cortés portray these goddesses as seated before a cosmic tree, weaving plant-based threads on a loom or spinning cotton on a *malacate*, or wooden spindle, highlighting the textile arts’ sacred nature as well as their instruments’ superhuman origins. In contemporary indigenous communities, this significance persists within collective memory, although the goddesses’ roles have been delegated to patron saints and the Virgin Mary.

For the Nahua indigenous people of the Zongolica mountain range in Veracruz, the backstrap loom possesses a magical-religious dimension linked to Tonantzin, or the Virgin of Guadalupe. The

**Clothing has not only proven practical when it comes to covering the body; it constitutes a sacred talent that the gods gave women at the beginning of time.**

weavers concur that Tonantzin was the first deity to weave and share her knowledge with the women in the area. While we may find many versions of the legend, all of them include a level of syncretism between the Nahua religion and Judeo-Christian Catholicism, revealing the art of weaving's sacred nature in the region:

The oldest, most grandmotherly women would tell us that there didn't used to be clothes like there are now. Before, everyone would walk around the mountain naked, tormented by the cold and getting wet. Then, Tonantzin saw that her son, Jesús, was suffering a lot, but she didn't know what to do to



Myths help create representations that legitimize the tasks assigned to each sex, demarcating gender spheres and distributing resources and the handling of technologies.

keep him warm. One day, she noticed that the sheep had wool and thought that maybe they weren't cold, since their fur covered them, so she snipped a little bit of wool and put it on the boy. And, in fact, he did stay warm, but since he was quite a mischievous boy, he'd go running around the mountain, and when he'd come back, he'd be naked again.

So, the *virgencita* realized that all her wool kept getting caught in the branches on the mountain and he'd come back with nothing on. The next day, she spoke with Saint Joseph. He was a carpenter, so she asked him to make some little sticks for her, since she wanted to try to weave.

When night fell, she began to weave the wool, and then she set up a loom with the little sticks that Saint Joseph had made for her. She tried to figure out how to weave, but didn't know how. However, since she is highly miraculous, she man-



aged to make linen with her woolen thread. And with it, she dressed Mary's boy Jesus, and he was never cold again. So that nobody would suffer from nudity again, the *virgencita* taught our grandmothers how to weave, and they taught their daughters, too. That was the gift that Tonantzin gave us women. We have all woven clothing for our families ever since. (Matilde García Tenzohua, weaver from Tlaquilpa, Veracruz)<sup>3</sup>



This statement proves highly valuable for understanding how myths help create representations that legitimize the tasks assigned to each sex, demarcating gender spheres and distributing resources and the handling of technologies; it helps us link the image of the Virgin Mary to the backstrap loom, legitimizing textile labor as a woman's activity, while logging, personified in Saint Joseph, pertains to men. Thus, the maternal image surrounding the *virgencita* (or Tonantzin) that persists in the indigenous imaginary today demarcates and legitimizes the domestic space as belonging to women, along with reproduction, shepherding, childrearing, animal husbandry, and service to others. Meanwhile, Saint Joseph might harken us back to the non-domestic space (to field work, carpentry, logging, and the handling of certain technologies such as the saw and the hoe, which, in this context, concern men).

In other parts of Mexico, the textile arts are believed to have been passed on to the eldest women through dreams. This is the case in Tenejapa, in the state of Chiapas, where embroiderers

**In this fabric of meaning, indigenous women reaffirm their belonging to a certain ethnicity and community, while expressing their world views, histories, origins, and sociocultural realities.**

claim to have learned their craft from Our Lady of Santa Lucía. In central Mexico, Our Lady of the Agonies is considered the patroness of those who weave the traditional Mexican shawl known as a rebozo, while in Aldama, Chiapas, where the Tzotzil indigenous people live, Our Lady of Magdalena is said to have woven from the beginning of creation, standing before a tree, and to have initiated women in the textile arts.

Just as before the time of Hernán Cortés, textiles still mark transcendent moments today, both individual and collective. Among the Nahuatl communities in Cuetzalan, in the state of Puebla, godparents are charged with "dressing" their godchildren soon after birth. Male newborns receive a cotton poncho called a *cotón* (also known as *gabán* or *jorongo*). Handwoven on the backstrap loom, the *cotón's* colorful embroidery resembles a *quahquahuini*, or bagworm, a caterpillar that lives on coffee plantations, forging its cocoon with bits of wood and sealing it with its own silk as it undertakes its metamorphosis. According to oral tradition, this little caterpillar is quite industrious, as it chops and gathers several little sticks for its cocoon. By recreating the caterpillar on the *cotón*, godparents wish their godson to become a hardworking logger when he grows up, someone capable of providing food and shelter to his wife and children.





When the infant being baptized is a girl, godparents gift her a huipil, a slip, and a sash, to be complemented by a broom, a small water vessel, and sticks and rods for a loom. The girl is expected to fulfill her domestic chores unflinching and, of course, to be a good weaver. According to oral tradition, if godparents fail to perform suitably in the “dressing” ceremony, when they die, they’ll be barred from embarking on their journey to the afterlife: their godchildren will undress them before they can even leave.

Another highly relevant moment in the sociocultural lives of indigenous peoples with direct ties to textile work is the “fiesta de mayordomía,” a religious community festivity celebrating a Catholic patron saint as the village’s protector. Traditionally, these protecting saints are paid tribute and honored according to the Catholic calendar. In Tlaquilpa, Veracruz, for instance, the Nahuatl people hold a mass for Saint Mary Magdalene in the municipal parish every July 21. The night before, the women offer her garments that they started handweaving on their backstrap looms ten months prior. Weaving for a saint is considered a privilege that demands that the weavers work night and day so that the patron will look kindly upon the gift. If the weavers fulfill their task, they receive a divine blessing, allowing them to keep weaving to the benefit of their communities and families.

Among other garments, the women offer Saint Mary Magdalene a *cuétil*, a handwoven woolen skirt colored with natural dyes, as well as an artisanally woven cotton rebozo, a sash dyed with cochineal, and a satin and lace blouse. According to local oral tradition, if the saints aren’t clad in customary attire, they might be offended and lash out with a number of punishments, especially affecting crops and unleashing an array of natural disasters.

## Final Thoughts

As we may observe, the textile work undertaken by Mexico’s indigenous communities encompasses a number of cultural meanings associated with gender and ritualism. It transcends the technical and aesthetic through its intricately interwoven symbolism, which dates back thousands of years. In this fabric of meaning, indigenous women reaffirm their belonging to a certain ethnicity and community, while expressing their world views, histories, origins, and sociocultural realities. This complex art deserves to be recognized and reclaimed, as the great contributions of indigenous women to art and culture in Mexico and the world remain invisible and underestimated today. **NMM**

## Further Reading

- Ramírez, Rosario, “El ciclo de vida femenina,” in *Arqueología Mexicana*, special edition, no. 55, April 2014, p. 68-69.
- Turok, Martha, *Cómo acercarse a la artesanía* (Mexico City: Plaza y Valdés, 1988).

## Notes

- 1 Ángel María Garibay, *Teogonía e historia de los mexicanos* (Mexico City: Porrúa, 1985), p. 25.
- 2 Bernardino de Sahagún, *Historia general de las cosas de Nueva España* (Mexico City: Porrúa, 1979 [1577]).
- 3 Interview with the author in 2011.



Hilán Cruz Cruz\*

# HILÁN, HILO: STRINGER OF STRINGS WEAVING WISDOM FOR A LIFE PROJECT<sup>1</sup>





## To Sew, or to Sow

**M**y name is Hilán Cruz, and I was born in a Nahua community in Tlacomulco, Huau-chinango, Puebla, 24 years ago. In my community, traditional textiles are key to our self-recognition as indigenous peoples who speak a native language, and our traditional clothing not only serves to protect us from inclement weather, but also lets us showcase our origins, our way of perceiving the world, and, more importantly, the way we see ourselves in it.

---

\* Weaver and anthropology student at Mexico's National School of Anthropology and History; @yolcentle.tex.  
Photos courtesy of the author.

I'm an anthropologist-in-training at Mexico's National School of Anthropology and History, and I hope to graduate with a thesis on the textile processes and pieces that make up my culture's identity. I decided to study social anthropology because of my thirst to understand how and why studies on the ways we interpret our environments, territories, families, and cultures came about.

As a young child, certain elements of my culture caught my attention, and the fact that I spent my childhood with my grandmother on my mother's side has left its mark on my life. Thanks to her, I understood that traditional textiles are more than just clothing, but a complex system guarding the wisdom of my people.





This wisdom manifests through technical understanding of the backstrap loom, as well as in the embroidery adorning our garments. In fact, my first encounter with the textile world came through embroidery. In my village, the traditional blouses decorated with small stitches known as *pepenado hilván* boast embroidered geometric animals and plants, as well as mythical creatures and small depictions of human beings, all of which reflect our traditional aesthetic.

## Spinning

One day, as I walked down the street, I caught a far-off glimpse of an elderly woman weaving a shawl known as a rebozo. Its blue thread quickly piqued my curiosity, sparking my interest in the weaving process and its significance in my community. When I got home, I

asked my mother about what I'd seen. She explained that weaving held profound significance for women, as taking up the backstrap loom was not only a way of crafting a garment, but a legacy our grandmothers had passed along from the days of yore. Unfortunately, I realized this practice was nearing extinction.

Thus, I decided to learn to weave. The path was chock-full of difficulty: I couldn't find anyone to teach me, and my father was upset at my initiative. But after a while, I found someone to teach me how to weave and started making small canvases, which I still keep today. Soon enough, I started taking on larger cloths, and a few rebozos and cotton ponchos known as *cotonas* or *gabanes*. Though the road was hard, it brought me great learning. I understood that creating a piece on the backstrap loom involves great responsibility, since, to put it plainly, we make these pieces with our histories and family stories, not just through a creative

or artistic process. The pieces I'd come to create would require straight lines, completion, and propriety. They would not stand as mere pieces of a culture, or worse yet, as folkloric objects or patches for foreign fashions.

## Weaving

This is how Yolcentle was born, a small textile workshop where we share our people's intricate knowledge of the weaving and embroidery adorning the clothes of Nahua men and women. We also showcase the myriad, complex backstrap-loom techniques used to create fine muslins, known as *mantas*, with wool,

cotton, and natural dyes, which I believe helps us understand each piece's structure and symbolism. We've also created small backstrap loom weaving workshops for the girls and boys in our community, since we believe in the importance of preserving this tradition that our grandparents passed down to us. Our workshops have ushered in gratifying experiences, sparking interest among children and the elderly in our community,

**My interest in reclaiming the *quechquemilt* stemmed from my quest to materialize the memories my grandparents shared throughout my childhood and adolescence.**





who want to understand the processes involved or to share experiences that have enriched the practice of weaving on the backstrap loom.

## The Curve

One of my personal projects involves reclaiming curved weaving on the backstrap loom. With various techniques, curved weaving is used to craft the textile known as *quechquemitl*, a poncho or shawl composed of two canvases sewn together at the ends to create a small, pointed cape worn exclusively by women. This piece's uniqueness lies in that part of its warp ends up being used as the weft, elongating the border to create an ornamental fringe. My interest in reclaiming the *quechquemitl* stemmed from my quest to materialize the memories my grandparents shared throughout my childhood and adolescence: the idea of conceiving, capturing, and materially envisioning a piece they deemed aesthetic to the eye and complex to the mind. Filled with curiosity, I challenged myself to recreate it. Thus, after spending a year researching, pondering, imagining, dreaming, and idealizing a piece, I started down the path and began to work, thread by thread, using everything from wool to cotton, including taffeta, piping, gauze, and reciprocal warps and wefts. Add to that my resolution to finish what I'd started, and I managed to finish my first *quechquemitl* using curved weaving. When I showed my grandparents, I didn't expect them to say anything, as usual. I simply took in the gleam in their eyes and made out the smiles on their faces. That was enough for me. I also showed my piece to people studying the textile arts. Their awe was easy to sense; the joy they felt at seeing a recent piece moved them, since curved weaving was thought extinct in my region. Little by little, friends and strangers flocked to see my work, and that's how the sharing began.

Seeing myself as a custodian of this knowledge that has been jealously guarded by the women in my community is a beautiful thing.



It's been years since my first curved *quechquemil* and Yolcentle's earliest pieces, but my drive to know more about my people through our textiles is as strong as ever, inspiring me to keep working. To keep sharing the breadth of the cultural inheritance our ancestors passed down through their linens, which were meant to cover and protect people of all ages, but also to be admired by those seeking to understand textiles beyond their structural complexity and aesthetics. I've gathered many flowers on this path: prizes, commendations, work, and multiple lessons. I must admit that seeing myself as a custodian of this knowledge that has been jealously guarded by the women in my community is a beautiful thing. It fills me with pride and long-term purpose (and, sometimes, with a little bit of

conceit, too). In the end, what keeps me fighting is the certainty that in the near future, society in general, and especially the children in my community, will understand the importance and value of keeping our cultural inheritance alive, appreciating the Nahuatl textile legacy given to us so that we might protect it and extol it, and never turn it into mere folklore. **MM**

## Notes

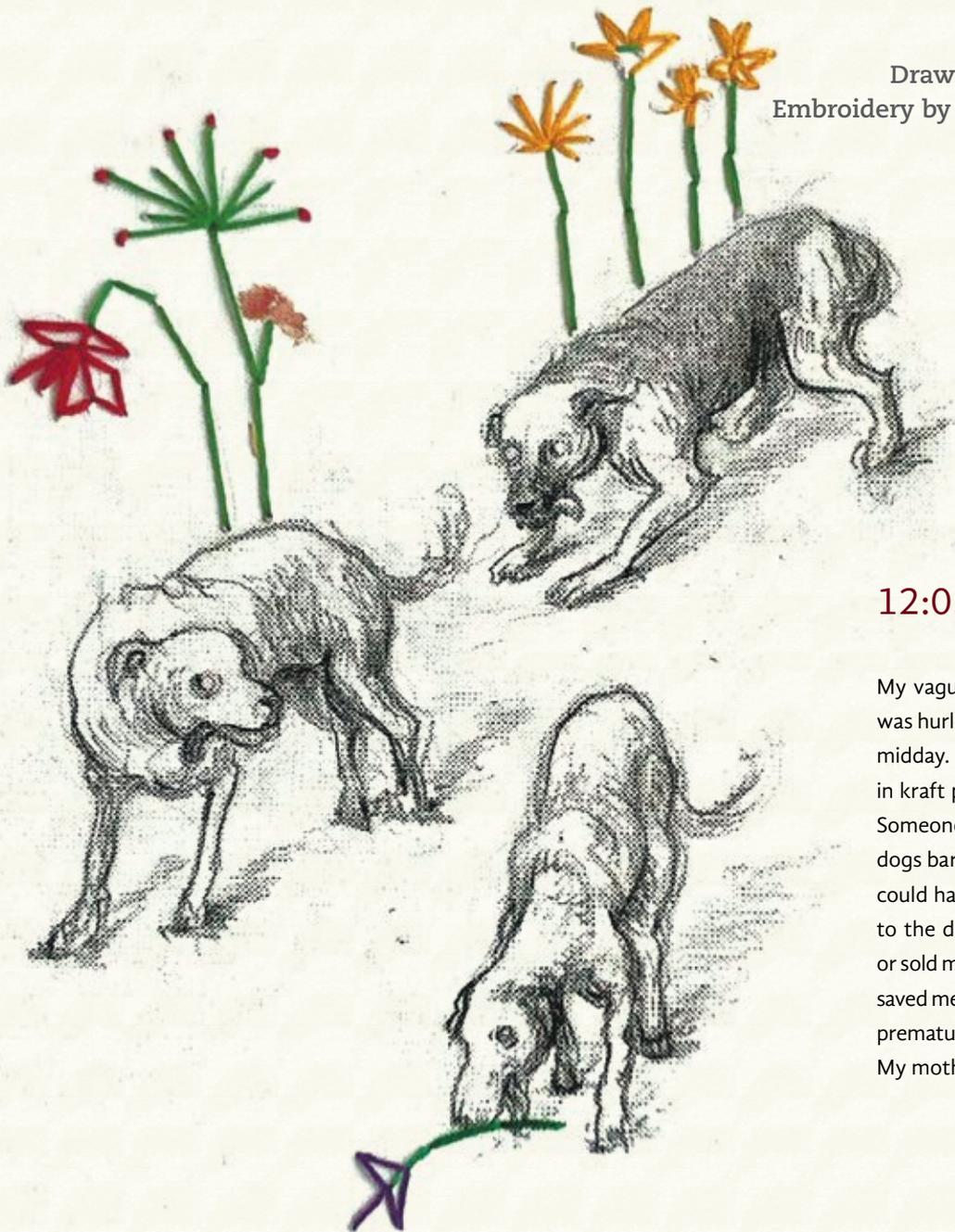
**1** This text is the result of a conversation between the author and Renata Schneider, a restorer specializing in the conservation and restoration of goods from rural Mexico and indigenous communities. She founded the project "Un huipil al día" ([unhuipil.wordpress.com](http://unhuipil.wordpress.com)). [Editor's Note.]

# Poems

by Alejandra Estrada\*

Drawings by Sebastián Álvarez\*\*

Embroidery by Macarena de Arrigunaga\*\*\*



12:05

My vague body, agonizing and off balance, was hurled to the earth precisely at a broken midday. Someone could have swaddled me in kraft paper and sold me at the butcher's. Someone could have cast me to the ravenous dogs barking outside the hospital. Someone could have given me —whole or in pieces— to the doctors in training at the university, or sold me to the freak show.<sup>1</sup> But fifty grams saved me from the incubator. My purple body, premature and pre-dead, decided to breathe. My mother birthed a defect.

<sup>1</sup> A bearded woman in the twenty-first century. There aren't any freak shows anymore, but hirsutism is still around. They called me a beast and beat my heart. They called me bitch, wolf, ape. They called me a monster. I started combing my face, legs, belly, and neck. My words came out in knots. Skeins grew within me, stringing out my thousand-Rapunzel braids, and I, a brief body, swollen with adolescence, cried because I was a flower of hair who wished to be touched by the mouths of men.

\* Poet; samamorada@hotmail.com.

\*\* Visual artist; @sebastianalvarez.jpg.

\*\*\* Writer; @macarenadearrigunaga.

# RAPUNZEL

or

A Brief Treatise on Trichotillomania

Rapunzel weaves a rug with hair.

She can't remember the world after the tower,  
can't remember cars,  
or dresses,  
can't remember the trolley's path  
or the scent of damp earth,  
can't remember her own voice.

She can only remember the smell of those men  
who snatched her on her path  
that afternoon.

Rapunzel weaves her mane:  
she plucks one, two, three hundred hairs,  
yanks out the telephone cable,  
the leaves off her plants,  
the fur on her cat,  
the clothesline.  
She tears off her clothes  
and again, her tresses  
in pairs:  
two, four, six, eight hundred.

Rapunzel weaves an oblivion rug  
in the quiet of the fourth floor,  
apartment 5A,  
and no one knows the path to the tower,  
because Rapunzel tore out her tongue,  
her eyebrows, and lashes.  
Rapunzel lights a pyre with the fuzz on her stomach,  
her bed is barren.

And only one shape will cross the window,  
only one phrase will open it,  
and it won't be flesh penetrating this tower.

Thread by thread, Rapunzel braids a rope  
for her throat.

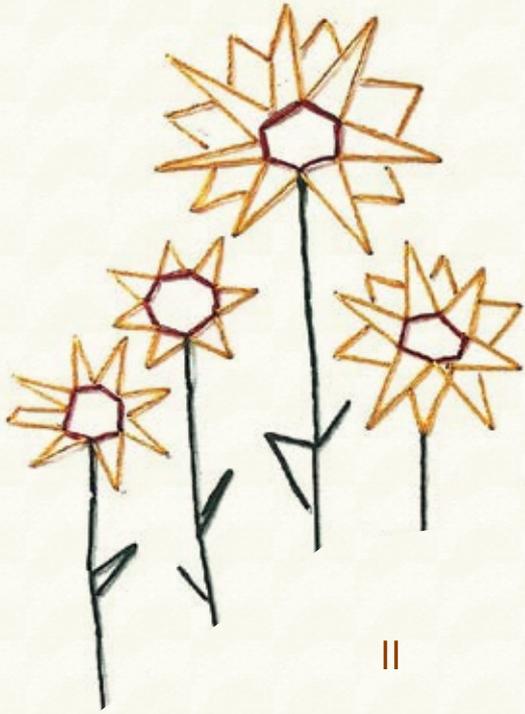


|

Mother wanted a doll but birthed a stone. Mother wanted a quiet doll but must bear my  
birdlike tongue. Mother wanted a quiet doll in a pink dress: my drying rack is laden with black  
lace. Mother wanted a quiet doll, with a pink dress, who would stay put on her pillow in bed.

Mother is still waiting for me to make my way home at dawn one day.





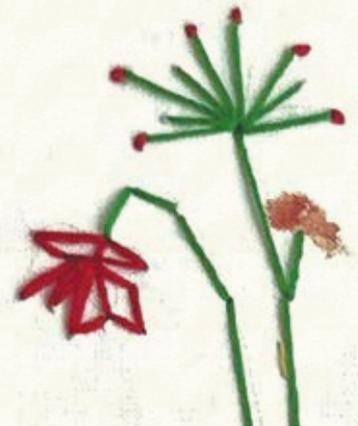
||

Mother would knit a hymen for me,  
my hair,  
my mouth,

my eyes...

Knot  
after

knot,  
mother knit  
a chain  
of silence. ■■■



Juan José Rivas\*

# A HYBRID TIME DEEP DOWN, IT'S ALL CONNECTED

**W**e've stopped perceiving reality in simplistic, naturalistic ways. Complexity, saturation, and chaos have proven constant elements that intervene, distort, and offer up new readings of what we understand as reality. While at one time the role of art was to represent nature realistically, contemporary and electronic art have gained such complexity that they not only offer new possibilities and degrees of representation, but also draw from new sets of data and information.

The binomial art-science union has led us to explore new relationships and acquire a different understanding of the sensorial universe that these two disciplines encompass. Technological tools offer artists new, once unthinkable possibilities, like measuring, observing, and analyzing key data to decipher the conditions of our nature, thus configuring beauty in a different way.

Current artistic production involves a new set of disciplines that have included new tools and languages that might appear far-fetched or counterposed to each other, but that have helped expand the limits of art. Indeed, hybridity characterizes most contemporary artistic productions, which present themselves in diffused and mixed ways, sometimes even confusing the viewer.

Painting, photography, drawing, performance, installations, sculptures, dance, and music have been entangled to give life to art pieces and works that would seem to challenge our sensibilities and offer a far more complex and multidimensional perspective, sometimes leading us to question the limits of the artistic, and whether or not we really need a limit.

If we consider artistic work as just another activity or trade, we may realize that its processes and outcomes have varied over time and that technological tools have contributed greatly to such changes. On this point, proponents and detractors of technology —technophobes and technophiles— surely abound, but beyond establishing value judgements, the fact that technology has forged much of our culture and behavior is undeniable.

My artistic production includes a great deal of grappling with the tools and technological resources I deploy —considering how these can help or hinder my pursuits. Beyond their utilitarian or decorative functions, the elements in most of my pieces play an expressive role that often interplays or makes contact with a variety of techniques, disciplines, and resources, generating hybrids and new forms of language. Like syntactic exercises, most of my pieces aim to translate some of my artistic concerns into an intimate and personal poetic exploration using an invented language.

\* Visual and sound artist, cultural manager, and professor at Universidad Centro; [www.juanjoserivas.info](http://www.juanjoserivas.info).  
Photos courtesy of the author.

# Self-Isolation Soundscapes



This project consists of a series of soundscapes recorded from my studio window throughout the Covid-19 lockdown. A video-journal of sorts with three-minute daily recordings, the soundscapes of Downtown Mexico City (where my studio is located), are recorded and processed using several digital effects and analogue synthesizers, generating one film piece per day to be published on my Instagram channel: @jrivasmx.

In parallel to the digital film registration, two recordings in physical flexi disc format serve as postcard-sized vinyl records.

#artesonoro #fieldrecordings #video #artelectrónico  
#artepostal #musicaexperimental



## Chinto Rage

By developing a character who is part *chinelero* (a traditional dancer whose costume mocks European colonizers), part cholo, part punk, and part goth, this performance and experimental music project reflects upon migration processes: the radical change involved does not merely lie in physical movement, but also in processes of hybridization and transculturation, which, in turn, generate their own issues to grapple with. To create this character, we designed and made a costume using wearable technology, allowing for dance and movement on stage, with the music produced and controlled through Bluetooth sensors on the costume.

#musicaexperimental #performance #artesonoro #wearabletech

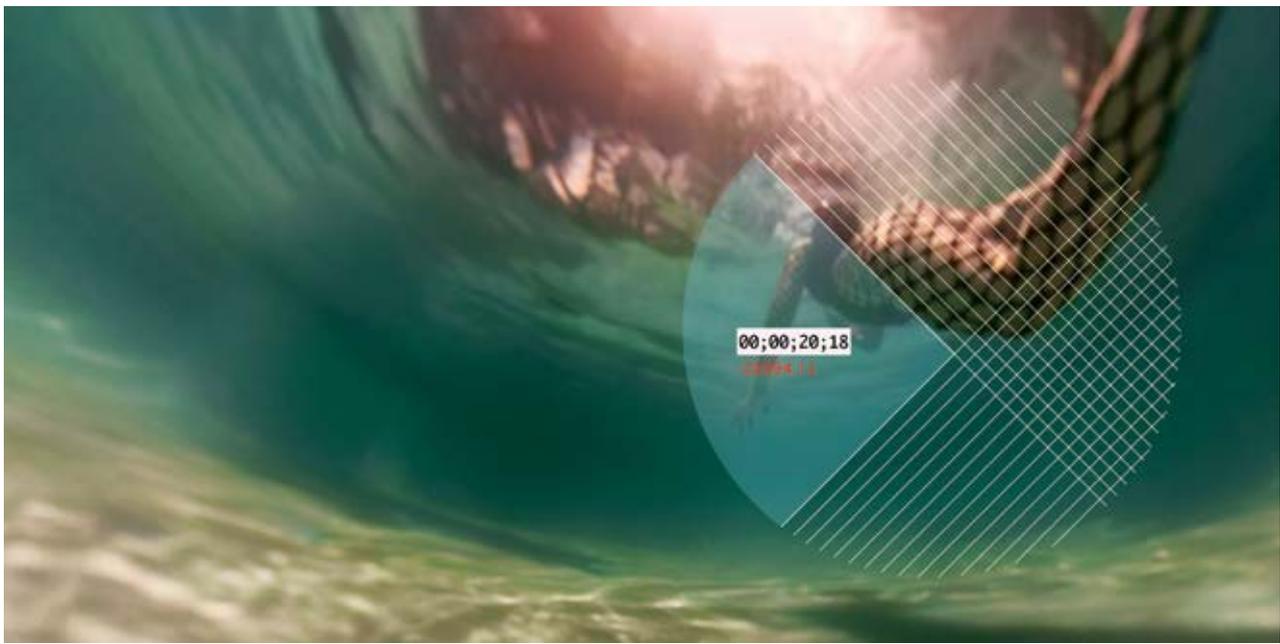
This inflatable, scented sculpture created for the Perfume Museum in Mexico City draws on scent to question the seduction process. The piece is named after the plant *Cynoglossum officinale*, or “Dog tongue,” a species in the borage (forget-me-not) family that is esoterically used to create fragrances that promise domination over the desired person, and their subsequent surrender.

Operating like a totem or ritual sculpture, this piece questions the construction of desire, seduction, and scent, as well as its various sociocultural strategies, in order to show that seduction inevitably oscillates between two poles: strategy and animality, moving from the most subtle of calculations, to more brutal, physical suggestion.

#escultura #instalacion #performance #arteelectronico

## *Brutal Hound*





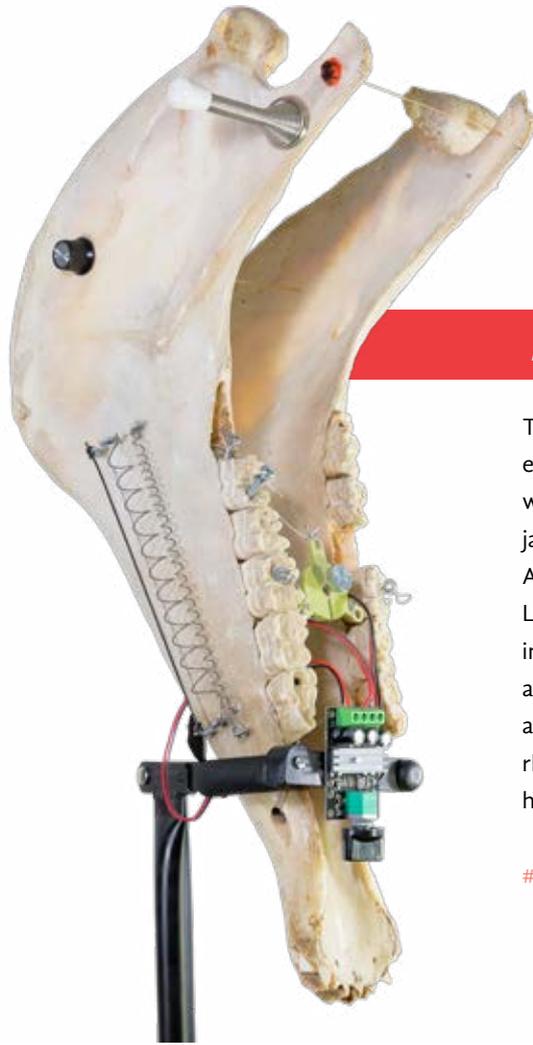
## *S: Swimming*

This concert/film installation stems from the act of swimming and processes a set of biometric data in order to visualize and add sound to the piece, including a 360° video and spatialized quadrophonic sound. This piece has two formats: one immersive video installation in 360° or virtual-reality format, and a live coding concert, with the video and sound editing generated and controlled in real time.

*S: Swimming* is part of a set of sound actions based on multiple body movements that aims to generate a dialogue with various physical concepts on the symbolic level through improvisation, error, chance, and instability in order to describe some of the phenomena of modernity.

#visualizaciondedatos #performance #artesonoro #livecoding #video360°





## M: Murmur

This sound piece created for an ensemble of six percussion instruments was designed based on the donkey jawbone or *charrasca*, an instrument of African origin used throughout much of Latin America. The jawbones were intervened and modified using motors and dental supports in order to automate the percussion instruments' rhythm and speed, thus generating a hybrid, electro-acoustic instrument.

#performance #artesonoro #musicaexperimental

\* \* \*

As I noted above, most contemporary art production is characterized by its hybridity: today's art has woven a mesh whose flexible, organic structure allows us to shift between a variety of disciplines, techniques, and formats, thus yielding different artistic discourses.

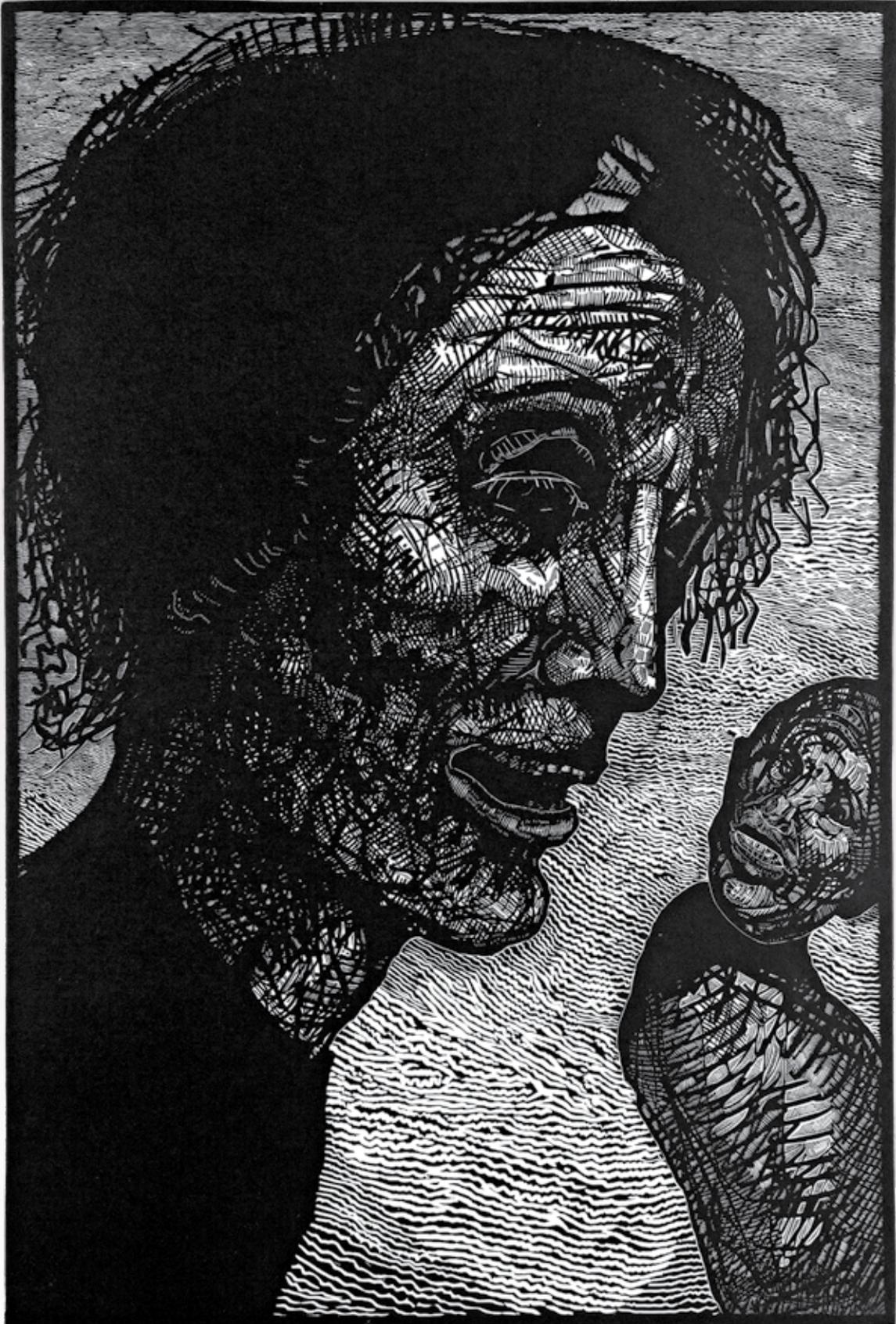
I'd like to think of art not as a discipline that explicitly and directly communicates and expresses, but as a tool for thought that questions and investigates the structures of our various languages and our need for them, or as an instrument that allows us to approach reality in new, multiple, complex, and perhaps unfathomable ways.

If every artistic discourse is a reflection of its time and context, then we find ourselves at a time in which art and its myriad artistic pieces hold hybridity, fragmentation, instability, fleetingness, and convulsion in common. The question is no longer "What is art?" but, "What is art producing and how?"

As the French philosopher and historian George Didi Huberman would note, "The matter, then, lies in how to determine, each time, in every image, what exactly the hand has done, how it has done it, and why, and what purpose this manipulation holds. For better or worse, we use our hands: we throw punches or we caress, we build or we destroy, we give or we take. Before every image, we must ask ourselves how it looks (at us), thinks (of us), and touches (us) at the same time."<sup>1</sup> **MM**

### Notes

<sup>1</sup> George Didi Huberman, "Como abrir los ojos," foreword to Harim Farocki, *Desconfiar de las imágenes* (Buenos Aires: Caja Negra, 2013).



*Broken and Contingent Stories*, 33.67 x 50.50 cm, 2017 (linocut).

Iván Gardea\*

# ENGRAVING THE PLOT



*Cast Off the Path, Going Nowhere - Deus Abconditus*, 37.07 x 24.99 cm, 2016 (linocut).

I

Let's say the engraver conspires with his accomplices, plots a robbery, an onslaught, a furious attack that will end up contorting the plate's serene, tempered surface into a labyrinth of grooves, cracks, and channels. Into trenches that won't flood with mud, but with ink.

The jubilant battle, if it was a happy one, leaves an imprint on the square plate—to the eye, a jungle of liana threads, threads in black ink. In this tight labyrinth, this unheard-of, snarled mess woven on a delirious loom, blinding flashes of white light pop up on the paper.

I would like to introduce some of the engraver's accomplices—we could call them partners in crime, subordinate *plotters*. These collaborators help properly engrave the conspiring carver's *plot* through consecutive *plotting* on hard metal and wooden surfaces, or on softer linoleum.

---

\* Engraver, sculptor and draftsman; ivangardea@hotmail.com.  
Photos courtesy of the author.

I'll only mention a few, the most illustrious, important ones: Sir Acid, so biting and insidious; Mademoiselle Drypoint, always sharp, spiling heartrending asides; Sir Burin, a laggard, old-fashioned gent, clad in long-standing glory and countless years, the old accomplice of those genius *plotters*, now an aged pariah, a dethroned leader of ancient, ornate and impeccable Nordic confabulations, of Nurembergian, cryptomedieval *plots* in Renaissance garb.

Then we have the Gouges, elderly ladies with clangorous laughter, some high pitched, some delighted in their round chuckling, and some so horizontal they barely seem to trace a smile.



*Girard 1*, 46.96 x 32.79 cm, 2014 (linocut).

## II

The highest of plotters has gathered his accomplices. They come blanketed in the deepest silence, the strictest stealth. The hand that moves them —so to speak— awaits their arrival. The hand is an old friend—, diligent and agile, mistress, as it were, of her resources (we will later find this not to be completely true). Like any hand that deems itself a hand, she's terribly manipulative and dominant —or so she'd have it. We always hear people say, "such and such an artist has quite a good hand," and she won't hesitate to take all the credit —the triumph of invention and skill—, and her five fingers would even seem to puff up, swell, and burst with sheer arrogance.

But “the hand that moves the hand,” the one who —allegedly— plans the assault or battle, the one mentally weaving the engraving, so to speak, remains utterly unknown, at least to the accomplices here gathered. They heed that hand’s call, but nobody really knows who it is, not even Sir Acid, who’s so subtle and sharp. The gathered only know the crafting hand and her five fingers, and her partner in crime, the slovenly, clumsy one who shows up to help her out every once in a while.

The hand with the five fingers, the skilled right hand mediating for the first *plotter* (the engraver) does not always —we must admit— dominate the situation. I’ll explain more later on, but this fact stems from nature, the very nature of the *plotted plot*, that is, of the lines weaving across the plate’s surface.

Sometimes, to cite a quintessential case of either utter independence or partial insubordination, Sir Acid —so capricious and unpredictable— suddenly feels compelled to conspire with the environment, and since he barely makes contact with the hand (his immediate boss), when it comes to the task that concerns us, he can undertake small, or not so small, acts of treason. We must admit these crimes or transgressions against the original plan are not always in bad faith.

Yet the other accomplices celebrate Sir Acid’s wrongdoings with secret, sly glee. More than anyone else, Sir Burin is the softest, most law-abiding one, the most sensible and circumspect of them all, given that he’s persisted since the olden days, when the *plot* of life seemed to have been conceived with more discipline and rigor. Thus, wanting to escape his scholastic, rigorous asceticism, he might wish to emulate the capriciousness of Sir Biting



*Broken and Contingent Stories 8*, 33.67 x 50.50 cm, 2017 (linocut).

**The engraver conspires with his accomplices, plots a robbery, an onslaught, a furious attack that will end up contorting the plate’s serene, tempered surface into a labyrinth of grooves, cracks, and channels.**

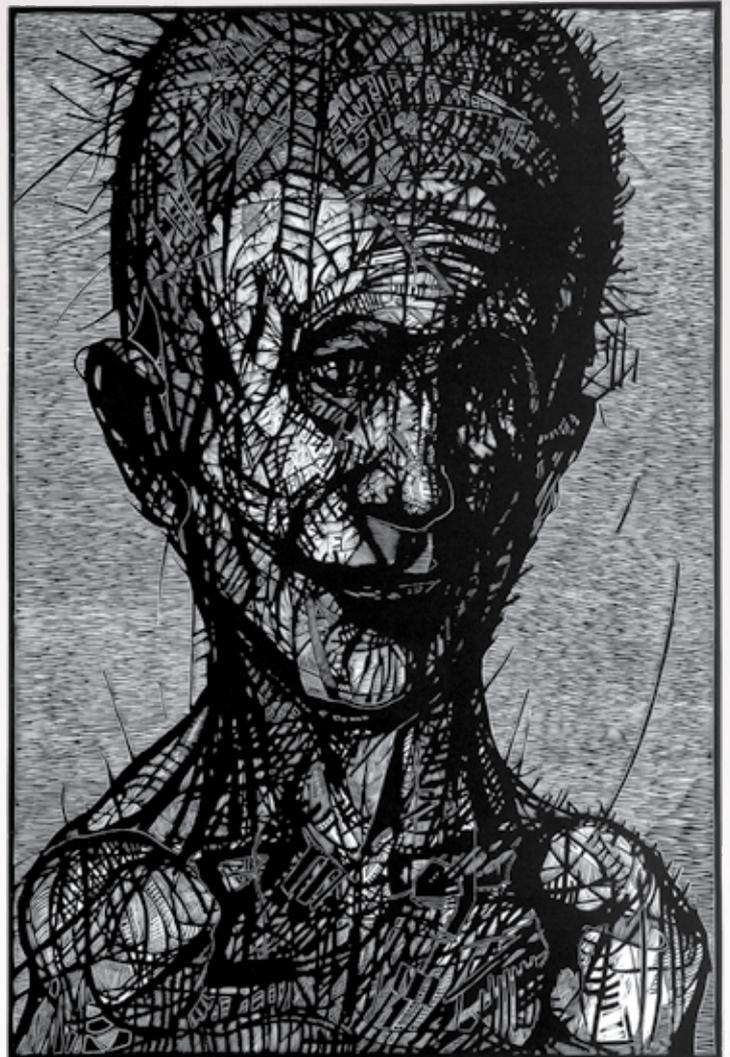
Acid, but when he tries, his summersaults that seem like buffoonery but are really dreadfully mistaken slips, deviations from the perfect groove toward which his eons-old obedience would drive him, end up *unplotting* the *plotted*, removing him from his *plotlike* vocation and causing raucous laughter among everyone else, given his feigned and ill-assumed freedom. . . . However, we will admit that he knows—and is the only one to know—that true freedom lies in the *well-plotted plot*.

Mademoiselle Drypoint's behavior is entirely different. Though the hand, the right hand with the five fingers, believes she moves her, it really is Mademoiselle who moves the hand, and not just the hand, but the whole arm, like an ice-skater vigorously gliding across the mirrorlike, metal plate.

Drypoint is a persnickety young lady; she's delicate and energetic at the same time, and though she can be docile before the hand's design, her incisive, punctilious, defiant abilities often not only



Girard 3, 33.67 x 50.50, 2015 (linocut).



Girard 3, 33.38 x 48.73, 2015 (linocut).



*Cast Off the Path, Going Nowhere - Heading toward God's Funeral, 33.29 x 21.76 cm, 2017 (linocut).*

**But “the hand that moves the hand,” the one who —allegedly— plans the assault or battle, the one mentally weaving the engraving, so to speak, remains utterly unknown.**

keep her from heeding the hand's commands, but also from abiding by whatever was coldly *plotted* at the very beginning by “the hand that moves the hand,” the *first plotter* (the engraver).

Thus, with her incisions, tears, and uneven grooves she leaves in her wake, and with the shavings and leftovers at the edge of each groove —such velveteen black!— she yields pathos, expression, and emotion to the square upon which the engraving's *plot* is *plotted* out. She leaves frayed threads, loose strands in the engraving's tight knitting, on the woven surface of grooves, of strings that become grooves, of hollow paths, of threads that . . . Never mind, I'll say no more of Mademoiselle Drypoint, whom we cherish so deeply. . . . I'll simply add one thing we believe to be of utmost importance: we believe Drypoint's disobedience, her contempt for the plans drawn by the *first plotter*, that is, the engraver, is most likely due to what we might call a higher obedience. And while we have no hard proof, as a hypothesis, I will say that the *first plotter* is not the *first plotter*. In other words, “the hand that moves the hand” is also moved by another hand, which is moved by another hand, and so on and so forth, until we reach the true, *First Plotter*.



*Cast off the Path, Going Nowhere - God Eclipse*, 36.26 x 24.25 cm, 2017 (linocut)

### III

The *Treatise on the First Principles of the Surface Engraved by the Hand of Man*, by Protuberantus Lineum, speaks of “the plotting lines created on the plate’s plot, constituting the plotted plot on the printed stamp,” which might sound like a convoluted tongue twister, and continues —using a poetic license that would seem strange given the author’s rigor, whose vocabulary here is no less strange, almost phenomenological in a way that would seem inappropriate for his time, but that we still deem worthy of citation— as follows: “end up turning this, the printed stamp, into a mirror of the world of sorts, a clear-surface-being-thus-clarified and reflecting (and revealing) —a metaphor for— the shape in which the intricate labyrinth of forces —namely the forces of the world— make up the plots of our lives: all that is tied and clinging to our destiny with everything that is and comes into being throughout the course of our lives.”

When speaking of the fabricating collusion of the *first plotter*, namely, the engraver, we must point out that, like Lineum, we believe that our efforts to secure the final image in fact succumb to the need to create something akin to a mirror of the world, of life in the world, not because of the subject of the image itself, but, according to Protuberantus Lineum, “because beyond this subject, in life itself, in the world’s becoming, this intertwining of lines that weave an image elicits creation, and in the course of our lives, these various lines —countless, hidden to the eye yet byzantine and secret— create the image of what we are, and even the very image that we fabricate of our own lives; this canvas woven with myriad, baffling, motley lines, overlapping to the point of tangling into a knot . . . makes us what we are.” Later, Lineum adds, “Woe to the innocent who might attempt to untangle such a tangle of thread,” concluding his book with the following enigmatic line: “About the Weaver, we know almost nothing.”



Somber Portrait, 27.31 x 40.96 cm, 2008 (linocut).

The *first* plotter is not the *first* plotter. In other words, “the hand that moves the hand” is also moved by another hand, which is moved by another hand, and so on and so forth, until we reach the true *First Plotter*.

#### IV

I sit in my study at my workplace. I’m the *first* plotter, the conspiring engraver. A linoleum block awaits: brown, inert, opaque. My accomplices stand by me, those ladies and their clangorous laughter, my gouges. I draw, then I engrave. An image will come through, woven with the minutes, hours, and days I might spend on it. Then, over the years—many years—only remnants of the woven-engraved image will remain, then only the threads, and then nothing. Time will devour it, like it ravages our own lives, and while we live, it would seem we are but the fleeting images created in this world, in the *plot* of life. About the Weaver, we know almost nothing. **MM**



# PERSISTENT POINTS: BETWEEN THE POSSIBLE AND THE IMPOSSIBLE

*A line is breadthless length.*<sup>1</sup>

Invisible yet infinite, to see or draw a line is impossible, according to the theory. However, we can draw representations of lines: lengths of sparse width that might extend toward infinity, at least in theory: lines can extend indefinitely in any direction. How is it, then, that we can build an infinite set of objects using a concept that has no starting point or end?

On a plane, we might imagine straight, downward lines, lines from side to side, and lines tilted any which way. Vertical, horizontal, and inclined lines ready to interact among themselves—whether they intersect or not. If two lines never intersect, we call them parallel. If they intersect just once, they're transversal and form an angle. If they touch more than once, then they actually touch at every point and constitute exactly the same straight line. However, even though only these three options exist, with more than two straight lines, our options multiply, allowing a variety of arrangements: patterns with transversal or parallel lines, or parallel *and* transversal lines—lines that can create shapes, angles, and areas.

And what about lines that aren't straight? We can draw continuous curves, in never-ending movement, keeping our pencil glued to the page. Here, another array of infinite options unfolds. Adopting a multitude of shapes, curves can intersect themselves, take turns, close in, and make shapes, like circles. In fact, a single curve can cover the surface of a square. Unlike straight lines, a curved one can interact infinitely. Two curves might never intersect and still not be parallel. Or they might intersect just once, twice, a thousand, or infinite times without constituting the same curve.

It's hard to imagine that with just one length with no width, we can build just about anything the eye can see, or even that which we can't even conceive—we might catch a glimpse of what it means to shift toward other spaces and different dimensions. **MM**

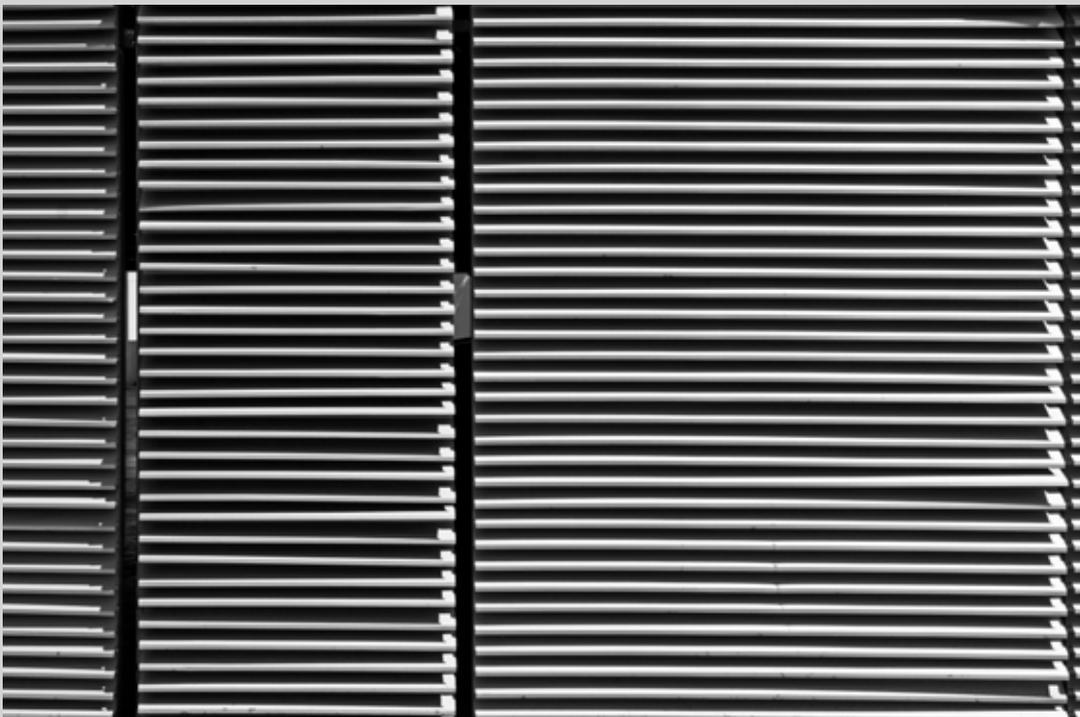
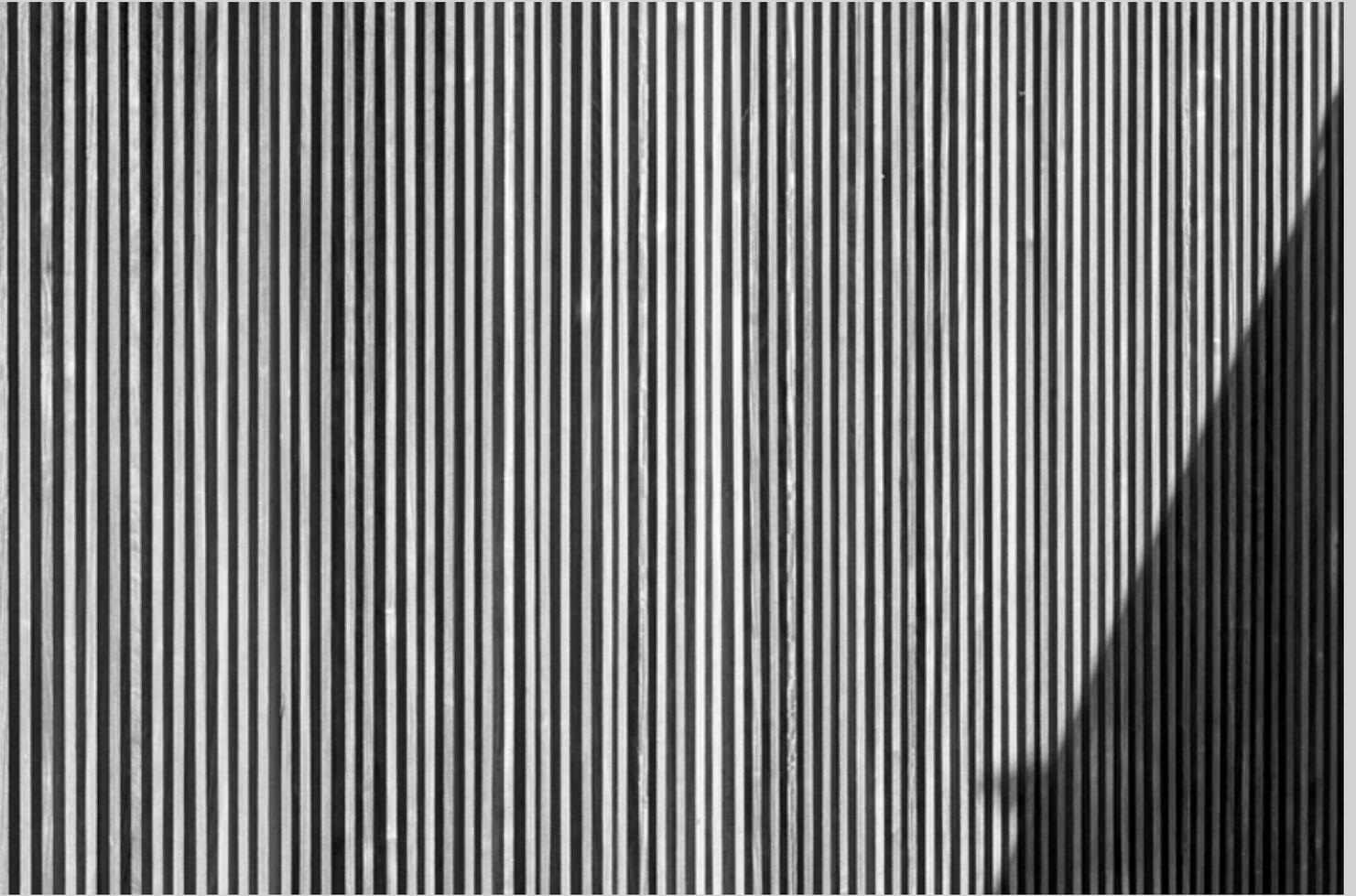


## Notes

<sup>1</sup> *Euclid's Elements*, Book I, Definition 2.

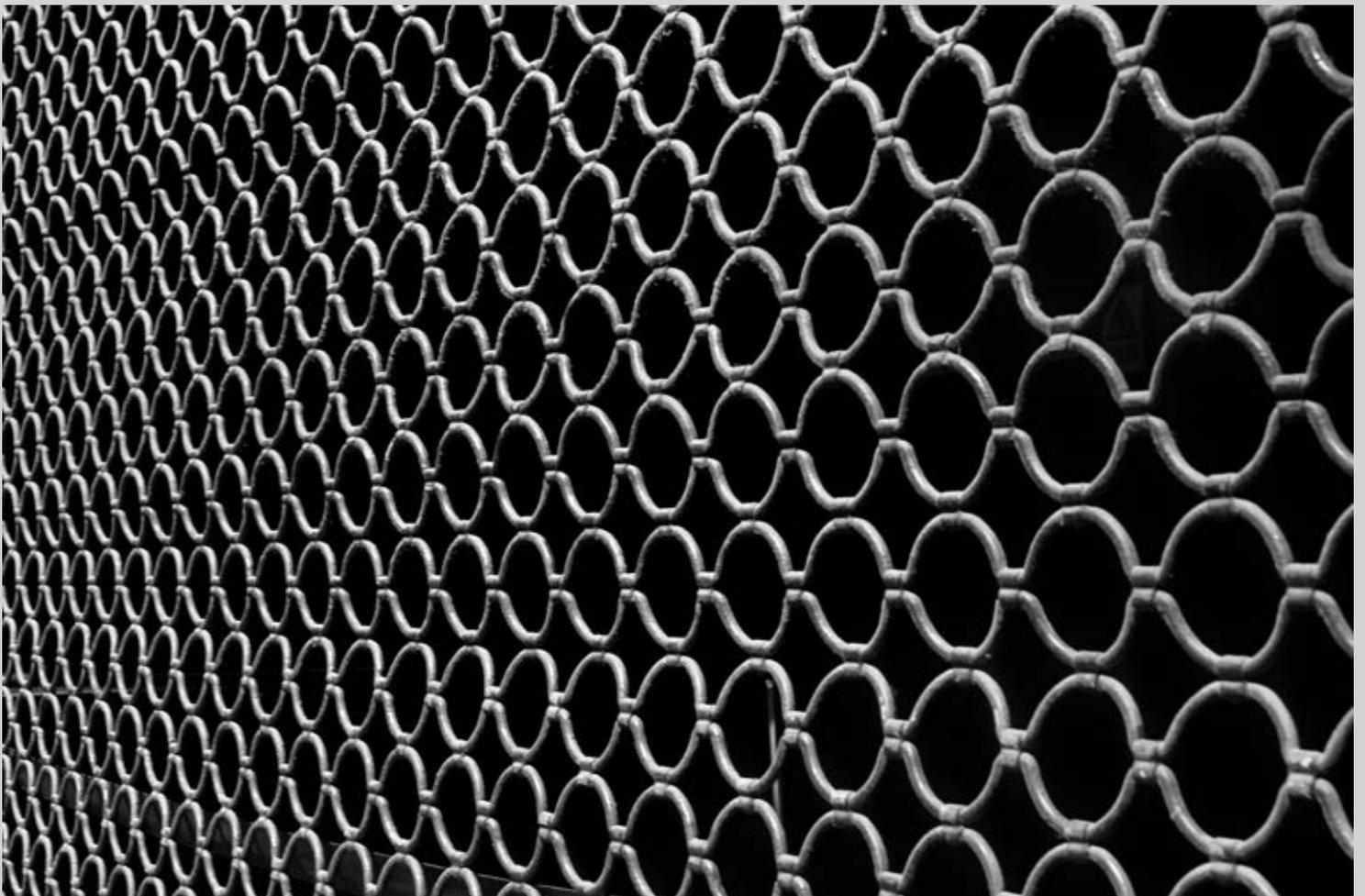
---

\* Photographer and graduate student in mathematics at the UNAM; marianacostav@gmail.com.











Verónica Gerber Bicecci, *The Speakers: body + voice = writing*, 2018. Photo by Elizabeth del Ángel, courtesy of the artist.

Susana González Aktories\*

## Entwined Voices

Dictionary offer us many meanings for the notion of “entwine.” The first are usually applied to the sciences and to architecture because they refer to a series of sheets or plates made of metal or other materials that cross over each other in a grid or lattice pattern and that therefore can be used to construct a shape capable of holding up a building. But “entwine” also refers to a series of ideas, actions, and voices that connect with and cross over each other in a text, creating a weave or plot.

Looking at it like that, it should seem incredible for us how even on an apparently smooth surface where a writ-

ten text appears, we are able to recognize in our reading a web or weave of multiple voices and perspectives, even beyond the possible textual markings like commas or hyphens that serve to identify at least the direct voices. And the weave becomes even more complicated when we think that a text can be put in an intertextual dialogue, through quotes or allusions of different kinds with other voices or texts external to the work.

Mexican writer and visual artist Verónica Gerber Bicecci was able to represent these kinds of situations in several of her works. Among them is her intervention on the interior walls of the Ex-Teresa Church Current Art Museum in 2018 for the “Ways of Listening” exhibit (2018-2019). As part of the “The Speakers” series that she has been developing for years, the title of the work, *The Speakers: body*

---

\* Professor at the UNAM School of Philosophy College of Modern Letters; normagonzalez@filos.unam.mx.

+ voice = writing, suggests an equation to be untangled semiotically. On a large, 8 x 3 m surface, Gerber Bicecci created a black-and-white graphic image of apparently simple figures linked together in many ways, showing the different, and at the same time complex, relationships in that web of voices and bodies when we think of written communication.

Its components are a series of balloons of text (= voices) and one of triangles (= bodies); all are different sizes, and black (= silence) alternates in some cases with white (= noise). The entire image is in brackets (= writing). Following the instructions for understanding the web, included in the piece at the bottom of the image, the viewer can visualize an infinite number of variables. Among those are voices inside bodies, bodies inside voices, crossovers between voices, crossovers between bodies and voices, bodies inside voices inside bodies crossed by voices. . . And all this also reveals the contrast between conceptual noises and silences that, even in the visual-written, present themselves as potentially audible. Placed in a symbolic context of writing, this labyrinth exemplifies the richness and multiplicity of these communicational situations.

If, with these situations in mind, we move into another terrain of the arts, concretely sound installations, we can

The weave becomes even more complicated when we think that a text can be put in an intertextual dialogue, through quotes or allusions of different kinds with other voices or texts external to the work.

find several examples of pieces that experiment with these kinds of tangles of bodies and voices, from an audible and at the same time visual and spatial dimension. For example, in the same exhibition, next to Gerber Bicecci's mural-graphic, Mexican composer Antonio Fernández Ros presents the sound installation *The Shower* (2009). Made up of 24 loudspeakers hung at the same height, equidistant from each other in a kind of sound chessboard, this piece was shown in the Ex-Teresa's Chapel of Souls.

In this piece, the minimalism and precision of its spatial placement contrast with the sound experience it offers the visitor. If viewers stand directly under one of the loudspeakers, they can be drenched in sound or absorbed by the flow of voices, songs, and noises issuing from it; or, they can allow the sound web to brush by them or touch



Antonio Fernández Ros, *The Shower* in the Ex-Teresa's Chapel of Souls, 2009. Photo for the 2018 installation by Gerardo Sánchez, courtesy of Ex-Teresa Church Current Art Museum.

“Entwine” is a fascinating concept, which from the fields of art reveals that these voices still have so much to say.

them by standing between different loudspeakers. The intensity of the experience varies according to the distance from the speakers. They even form a different impression when they stand outside the installation, from where they can experience the fascinating, captivating body made up of the sum of all the sounds, the vocal, sound, and musical clusters. In any case, despite the fact that the recordings repeat in a continuous loop, the experience is never the same because it is always perceived from different angles. And if, to a large extent, it is made up of speaking voices, Fernández Ros is not trying to make us understand what is being said, but rather to have us experience the effect that this web has on us, in which each of the speakers is programmed to emit about 25 fragments of different recordings, many of them taken from radio broadcasts from the widest assortment of countries and the most varied of languages. When he deliberately includes certain identical tracks on the 24 channels, the artist at times also makes them coincide so we hear the unexpected chorus in unison. So, more than the voices dialoguing, they usually overlap, but they also find each other, with the same sound effect as tuning into a radio station, including the interferences, crossovers, and noises that brings with it. In addition to the apparent randomness, the artist also plays with contrasts, disparities, and the variety of forms of speech that are quite recognizable: voices reading the news, doing an interview, praying, singing, making a political speech, doing a literary reading, reciting a Dadaist poem, among many others. If you're lucky, you can identify documentary registers of well-known voices, some of people in politics, like Fidel Castro, Nelson Mandela, Salvador Allende, Evita Perón, or John F. Kennedy; artists like Filippo Tommaso Marinetti, Marcel Duchamp, and Kurt Schwitters; or writers like William Burroughs, Guillaume Apollinaire, Jean Cocteau, Henry Miller, and Kurt Schwitters, to name a few. It is a selection that also makes the viewer think about what the piece brings into play ideologically and culturally from the point of view of listening.

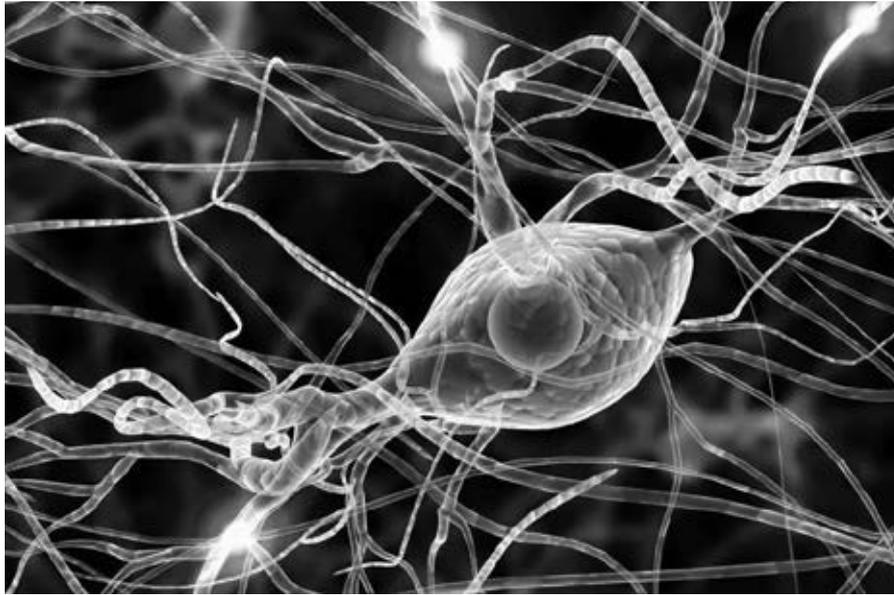
The web of voices that Fernández Ros offers, as experienced in a space like a chapel, also takes on a particular

meaning, not only because of its resonance, but also because of what it symbolizes. *The Shower* clearly offers a different way forward for its voices, which in this space generates a conceptual counterpoint with prayers and murmurs evoking the practices that dominated this venue in times gone by.

The small drift proposed here by the networks of voices in different art forms makes it possible to exemplify the diversity of intersections and the different levels in which vocal material intertwines and weaves together, both conceptually and materially. This is given that, in literature, as in the visual and aural arts, a web of voices can constitute a theme, a medium, or a vehicle, or the discursive resource of a work, even combining in it in rich, intriguing ways. We can also recognize that the juxtapositions and contrasts derived from those webs have both aesthetic and ideological implications. These communicate not only because of what the voices say, but also because of their way of being present in a time and space, from where they can touch us and even penetrate us physically and emotionally.

For those who research these kinds of works, such as myself, thinking about them and approaching them from an intermedium perspective demand recognizing precisely that broad range of possibilities of webs that they erect based on verbal enunciation, but also in terms of their character as resonating material. Works like those mentioned here offer us the opportunity to understand and observe how networks of relationships are configured and woven, at the same time that they allow us to experience them as that complex, enveloping phenomenon that is part of that same experience, making us part of both their equation and their intention.

Even when the voice seems well-known and familiar to us—are we not always surrounded by voices?—it is always so malleable and adaptable that it leads us not only to imagine but also to construct hugely rich and complex polyphonic, multi-faceted works; works that can be perceived from multiple angles and interpreted in different ways, inviting us to return to them again and again, without ever fully unraveling them completely. Perhaps it is beginning with encountering these kinds of works that we should complement the meaning that dictionaries offer us for the concept of “entwine,” a fascinating concept, which from the fields of art reveals that these voices still have so much to say. ■■■



wallpapersafari.com

Fernanda Pérez Gay\*

## Changing Networks

The body is a machine with intricate universes: every cell, a microcosm; every molecule, a vehicle for life. How are all those random universes interlaced to constitute a unique living being with an unrepeatable combination of thoughts, feelings, and memories?

\* \* \*

The cell is the unit of life, a piece of matter separated from the rest of the world by a layer of fat. In the beginning, we were a cell. Even today, many, many microorganisms exist that are no more than that: one cell. Many of them live inside us. But, let's not go further than that yet. One cell, capable by itself of the most elementary functions, immersed in an environment that is no longer part of it, but that it needs to survive. What is there inside a cell? The same thing that is outside it actually, but organized in different ways: atoms, carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, potassium, sodium, chlorine. Some of these atoms wander about alone, entering

and leaving the cell, swimming inside it. Others join together, attracted by inevitable electrical charges, and form molecules: water, sugars, proteins, fats. The space inside the cell that they swim in relatively freely is called cytoplasm, but the cell is not a ball of cytoplasm surrounded by fat —when I say fat, I mean an organized structure made up of different fat molecules or lipids, called the cell membrane. Inside each cell are other structures just as organized as the membrane itself. One of these is enormous, and although it is dispersed through the cytoplasm, it occupies the cell's operational center, like the Sun occupies the center of our system: the nucleus. The nucleus is considered important because inside it is that three-lettered thing that we talk about all the time without even knowing what the letters refer to: deoxyribonucleic acid, or DNA. A ladder made of molecules, of those same atoms mentioned above, but organized extremely intricately; so much so that they contain instructions to manufacture all the other components of that cell. Every piece of DNA has instructions for building a specific molecule, and those pieces are called genes: the famous code of life. The living cell is made of the same elements as many non-living things; the difference lies in their organ-

\* Medical doctor and post-doctoral researcher at the McGill University Neurophilosophy Lab; fernandapgj@gmail.com.

ization. Life is the result of the organization of these molecules. From the simple to the complex; life is dynamism and complexity.

Four billion years ago, the information of all the future cells in the universe fit into a primitive version of what we now call cells. That first cell is called the Last Universal Common Ancestor (LUCA). The day I first imagined LUCA, the mother bacteria, floating in a sea of electrically charged atoms and molecules, about to bring forth the first of all the living organisms in the universe, I became passionate about the biological sciences forever. I wouldn't want to be lost inside LUCA because I would never get to what we're made of, what we have called "human beings," but we know that that cell existed and that it reproduced. To do that, it wandered through its environment looking for certain atoms or molecules that allowed it essentially to divide in two and that those two halves would later reconstitute themselves as complete cells: reproduction. For a cell, reproducing is dividing. LUCA divided over and over and over again, and its descendants adapted to the environment, becoming more efficient for certain tasks, mainly for moving around, and thus to be better able to interact with their surroundings. Moving around requires energy, so cells developed more and better mechanisms to transform their nutrients into energy, making them more complex.

The next step that takes us close to that ancestral bacteria is the moment when it met up with another ancestral bacteria floating in that ancient biochemical sea. The capacity of a cell to detect molecules that indicate the presence of another cell changes the course of the kingdom of the living. Two cells recognize each other and interact, and there begins the road to what we are: multicellular organisms: cells that cooperate to carry out a task. What for? Even on a microscopic level, cooperation facilitates survival. The cells that cooperate are preserved and eventually give rise to groups of cells with mechanisms that allow them to carry out different functions. We are, then, groups of cells that contain within themselves machinery that allows them to do different things: form a barrier, give support, carry nutritious molecules to other cells further away, store those molecules, eliminate those that are no longer useful, detect the characteristics of the world that surrounds us, facilitate the displacement of the collective of cells. The cells that are similar to each other and have the same function are called tissue; and

What we conceive of as our self depends on the appropriate functioning of each of our organs and systems, made according to our DNA.

those form organs; and the organs, systems. Are we the sum of all our systems? Yes. Are we "nothing more" than the sum of all our systems?

\* \* \*

What we conceive of as our "self" depends—just like the words I'm writing now—on the appropriate functioning of each of our organs and systems, made according to our DNA. But one of those systems seems to have greater influence than the others: a network of star-shaped cells extending to the difficult-to-reach corners: neurons, cells that can open and close their membranes to let electrically-charged atoms through, thus generating electricity, and later letting it run through its extensions, organized into the multiple highways of the network, and, upon reaching its destination, free up a molecule faced with another neuron, and pass on a message. Thus, just as the future of LUCA changed forever the day its mechanisms detected the presence of another cell, when the ancestor of one of those star-shaped cells capable of sending electrical messages carried out its function for the first time, a new form of communication was born: synapsis. And that form of communication determined a new organization inside living beings: the nervous system.

When we are embryos, masses of cells beginning to take on their future role in the organism, the neuronal star is one of the cell destinations. After a series of steps, once that organism's mother cells turn into neurons, the task of designing the first connecting route remains to be finished; that is, the first point of what Bruno Estañol called "the enchanted loom."<sup>1</sup> For that to happen, during the development of our nervous system, the neurons, initially stars all of whose points are the same, will allow one of their points to grow. That long point will be called the axon (from the Greek "ἄξων," meaning axis), the axis of the star-cell. These embryonic axons find their way thanks to the different chemical signals that attract or reject them. The instruction to send these chemical signals is found

in DNA. Following the steps, the axons first sketch out a nervous route, a future information highway. They stop when they get to their star, that is, when they find the target neuron. The largest group of star-neurons is the center of the spider's web, designed following the DNA's genetic instructions: the cerebrum (from the Latin *cerebrum*, "what leads to the head").

The cerebrum of a newborn is not a clean slate. Thanks to that precise axon journey that occurs during the embryonic/fetal period, our nervous system already contains certain nervous highways, determined genetically, at the moment of birth. It is a cerebrum whose neurons from different areas are already connected in a certain order, a spinal cord that allows the neurons to travel down the body and back. And nerves: groups of axons that travel together to the tips of the fingers, from a foot, an eye, or to a remote area of the intestine and back; a back-and-forth of information coded in electrical discharges that allow us to receive information from both the exterior and the interior world and respond with a few basic forms of behavior. We can see, hear, breathe, suck, cry. This pattern of connections established by axons that grow and travel to different destinations in the brain-in-formation are the first physical layer of future thoughts, movements, and feelings of the person that the newborn will become, although most of the functions of that starry network have not yet developed.

Compared to other animals, we human beings take much longer to mature our perceptive capabilities (the reception and interpretation of information received from the senses), as well as the motor and cognitive skills (for transforming information and making decisions). Feeling, doing, thinking. That is because, when we are born, we have only a schema of the future nervous model that will rule our adult life. But the genetic design of these star-cells and their nervous routes also has a trick up its sleeve: it can reinvent itself. Nervous tissue is born prepared to continue moving toward complexity.

Compared to other animals, we human beings take much longer to mature our perceptive capabilities (the reception and interpretation of information received from the senses).

\*\*\*

Starting from birth, these primitive nervous highways begin to be refined by sensorial stimulation and the movements with which we respond to it. Connections: synaptic unions that are formed, strengthened, weakened, or disappear until we can begin to navigate our surroundings and we begin to store information, using the same system of forming and strengthening connections; electrochemical links among groups of neurons that will help us, for example, respond better the next time we encounter a similar situation. Like in the solitary bacteria, in the star-shaped cell of an organism with more than 30 trillion other cells, cooperation also leads to success. So, our experiences in life are inscribed in our cerebral circuits, in the pattern of connections of our billions of neurons: the connectome. The day that I first imagined it coordinating our thoughts and behavior at the same time that it transformed, my motivation to continue studying the brain solidified. Each one of us has a unique genetic code and personal, unrepeatable life experiences, so no two connectomes are the same. Even if we had an identical twin, our connectome would change differently throughout our lives.

We come from LUCA. We are made of cells formed by the same atoms and molecules that have made up life since its beginnings, billions of years ago. Constituted by the same elements, in us lives a constantly changing network, a network permeated by our immediate physical, social, and cultural surroundings. Star-shaped cells with thousands of ramifications lose their branches or have them shortened, and thus make room for new informational highways. Our context is thus continually inscribed in this versatile nervous labyrinth; with time it tattoos itself onto the neuronal microcosmos of one of the body's most intricate universes. Star-shaped cells branch out thousands of times, losing or shortening branches, and thus allow for the creation of new informational highways. A forest of neuronal trees in continual metamorphosis. An electrical cellular malleable web: the warp and weft that holds our dreams, fears, desires, and emotions. **MM**

▼  
Notes

**1** Eduardo Cesarman and Bruno Estañol, *El telar encantado. El enigma de la relación mente-cerebro* (Mexico City: Porrúa, 1994). [Editor's Note.]



Nicholas Kusuma / Unsplash.com

Luis Fernando Flores\*

## The Labyrinthine Road of Life

Throughout our lives, we human beings have sought to understand our origins, the reason for our existence, the meaning of our lives; but, above all, what has caused us great confusion is the experience of being able to distinguish between anxiety/discontent, evil, and displeasure. Life is a road of pleasant and unpleasant experiences, decisions that lead us to results like love, peace, harmony, balance, and others that inevitably lead to the bitter flavor of anxiety or discontent.

For a psychoanalyst to exist, there first has to be a patient. The analyst himself must experience the journey of becoming a patient in his own story. Patient is not synonymous with someone who is ill. A patient is the person who is in search of his own peace. The exercise of an analytical experience is the encounter of two human beings who meet to find peace for the one who situates him/herself as a patient. The analyst has two functions: speaking to find the question that will spark the unfolding of the

unconscious, and silence, which will allow it to be the patient who, through the word, will find the cure. Cure of what? Of the adversity implied in being alive. Emotional life cannot be controlled. Emotional life is lived, experienced.

Psychoanalysis is an experience of life in which the result is that one of the participants has the opportunity to analyze him- or herself and understand him/herself. However, it does not free us from pain. Understanding life is not avoiding it. Understanding humanity does not free us from the impact of coinciding. If we stop a moment to identify all our options for being, we can make a journey within and begin to experience the web of existence.

The origin of discontent is situated in the four interweaving fundamental relationships at their two poles: positive and negative. How we relate to love, to religion, to our capacity for creation, and to our capacity to care for our bodies to ensure our survival. The negative pole, such as hatred, rage, selfishness, and rancor, prevent us from loving others, loving life, and, above all, loving ourselves.

If religion gave us a connection to our divine essence, seeing ourselves as part of the universe, the essence of a god, divine beings worthy of dignity and love that we must

---

\* Psychoanalyst, director of the South Tlalpan Emotional Center ([www.centroemocional.mx](http://www.centroemocional.mx)) and supervisor, pedagogical analyst, and teacher in the Intercontinental University Graduate Programs in Psychoanalysis; [luisfernandopsicoanalista@gmail.com](mailto:luisfernandopsicoanalista@gmail.com).

care for and bless everything we are and everything that surrounds us, the reality is that it stamps us with the mark of evil. We feel that we are imperfect beings, dirty, evil. That bad relationship with our spiritual essence leaves us defenseless in a world that seems more hell than paradise.

Creativity is the source that allows us to generate flexibility, creating possibilities when faced with a crisis or adversity. But when we cannot connect to that ability, the only thing left to us is paralysis, rigidity; and that rigidity can break us or uproot us completely when the storm hits: it goes right through us or blasts us apart.

When we haven't developed the awareness of what it means to take care of our bodies as they are, the housing for our souls due to a paradoxical situation; when we are suffering or feeling upset by anxiety or mourning, instead of caring for our bodies from the outside in, we often neglect and destroy them. And that is when insomnia appears. Hunger disappears and we activate the compulsion of damaging our bodies by stopping listening to them and consuming what they do not need.

In my clinical experience, psychoanalysis is not a therapy: it is an experience in which the cure happens as an afterthought. I am more and more convinced each day that we lead our lives in accordance with an internal script dictated to a great extent by our family of origin. Our family history becomes a weight that restricts us and from which we must free ourselves to realize ourselves as individuals.

For a civilization to be ruled by an abundance of well-being, it must respect universal laws. All beings are the result of a same original source. Recognizing that unity gives us the opportunity to relate to the external world with dignity. Everything we do, think, say, and feel has consequences and will come back to us or our descendants. Gratitude and generosity are the highest forms of love and are the keys to abundance. Avoiding patricide, fratricide, incest, and pedophilia, and assuming that the feminine is the closest to the source of creation will lead us along the road of blessings. Being blessed is the consequence of speaking well, wishing well, feeling well, acting well, living well. The opposite of a blessing is a curse. It is the spoken expression of an evil desire against one or several persons; a curse contains a sharp desire that the person cursed will experience great evils. A curse is the consequence of speaking badly, feeling badly, wishing badly, acting badly, living badly.

**Creativity allows us to generate flexibility creating possibilities when faced with a crisis or adversity. When we cannot connect to that ability, the only thing left to us is paralysis, rigidity.**

Family curses, inherited and inscribed in a subject's unconscious, necessarily require approaching art to attract beauty into the place inhabited by horror; witchcraft to fight the internal demons, but, fundamentally, love and psychoanalysis. This implies believing that pain and malignant experiences exist that evoke demons who wounded, hurt great-grandparents, grandparents, parents, and children, that have not yet managed to break the spells that hold together the chains of hell that torment us. This hypothesis implies deepening our search into human evil and identifying those who are elected to withstand it. When the members of an endogamic group are not able to recognize their own hatred, we sometimes need a third party to lend his/her body, his/her soul, and his/her psyche to deposit it and carry it.

Some injuries are transmitted from one generation to another. The bewitched became sorcerers, projecting on their children what had been projected onto them. The objective of this research, in addition to referring to this phenomenon, which is part of the psychic biology that accompanies humanity, is to come up with an explanation and, if possible, find an antidote to break the spell in the form of a curse or of suffering. In this barrier, we find the bitter psychological sediments of our fathers and our mothers, of our grandparents and our great-grandparents. In this phenomenon, the chosen one, the one chosen to carry the curse within the family tree, has the option of identifying himself with what he is cursed with or to dis-identify himself with the past, with the purpose of acceding to a new experience in the present. Every time a person has a problem that seems to be individual, the entire family reacts as belonging and identification. If one member refuses to carry the curse, that rejection changes the structure of the living family and the dead who inhabit the extended family's unconscious. For this reason, the past has the opportunity of moving, even of transforming, in the liberation of a subject who has the opportunity of bringing the antidote, the blessing to himself and all those who wish to cure themselves inside the extended family.

When we understand and analyze without prejudice the history of our ancestors, who we consider guilty of our pain or curses, we gain the ability to forgive. What is more, when we honor them through knowledge and analysis, we are able to dissolve our perception of them and to thank them and love them to —finally— see the “blessing” in each of them. All these factors would allow us to spiritually transform our family mission. Whenever any of us falls, we drag down the whole family, including the little boys and girls as yet unborn. Lastly, the success or failure of a family depends on each of its members. The wings one member has to grow or fly with depend on the roots that nourish them to bless or curse their journey.

To heal an illness, we cannot limit ourselves only to science. The artist’s gaze balances that of a doctor capable of understanding biological problems, but who lacks the techniques needed to detect the sublime values buried in each individual. For that person to heal, it is necessary for the patient to be what he/she really is and to be freed from the identity he/she has acquired: what others have wanted him/her to be. In accordance with what I have observed in the years I have been practicing art and psychoanalysis, all illnesses come from an order we have received in childhood, forcing us to do something we do not want to do and a prohibition that forced us to not be what we really are.

Evil, depression, and fears stem from a lack of awareness; from forgetting beauty; from family tyranny; from the weight of a world full of contradictions and obsolete religions. To heal a patient—that is, to help him/her to be what he/she really is—, he/she must be made aware of the fact that he/she is not an isolated individual, but rather the fruit of at least four generations of forebears. It is impossible to know ourselves if we do not know the material and spiritual legacy of our genealogical tree. However, the structures of the extended family must not be the object of restrictive interpretations that analyze beings as though they were machines. To find the balance between love and hatred, it is necessary to make peace with the family history; being able to renounce our identification with the risk of being excluded in the quest for our peace.

Untangling discontent, displeasure, and being cursed requires a mourning process; achieving it implies having the courage to dare to bear life as it is.

Although they share some similarities, both depression and mourning are terms with different connotations.

Accepting a loss requires taking a difficult, painful journey that is neither short nor quick, but we know when it comes to an end when we begin to feel like ourselves again.

Mourning implies a process of accepting that we are losing or have just lost something or someone very dear to us. Accepting that loss requires taking a difficult and painful path. The journey is neither short nor quick, but we know when it comes to an end when we once again begin to feel like ourselves. That is when we reestablish our identity and are prepared to face and deal with new losses that life may present us with. Having processed mourning presupposes that the memory of what is lost no longer makes us ill. It allows us to inhabit our psychic memory bearing what we have lost, with the entire gamut of feelings: from joy and love to nostalgia. This memory becomes a refuge and a consolation throughout our lives. The journey along the road of mourning is not made in the company of others. It is solitary. It forces us to suffer the cold of sadness and loneliness, the thirst for courage and for anger, the uncertainty of fear and of loneliness. Nevertheless, that journey always leads us to the goal of reaching those havens that are processing our mourning. The pain created is always proportional to the love of what we lost. If we love a great deal, the pain will be great. But that is precisely what life is all about: living it, experiencing it, daring to live it and retain the experience that is the only thing we will take with us the day we leave it. Mourning is not an illness; mourning is part of living. Everything we love is destined to end with our experience of finite time, but it gives us the subtle impression that life is sometimes only a great perishable dream. And, like all dreams, it deserves to be dreamed.

Untangling discontent is an act of liberation that requires all our compassion, all our strength, and all our respect. It consists of reconnecting all the bridges that have been broken. It would seem to involve recovering innocence lost, but with the experience acquired to be able to decide to say “no” when discontent approaches and to become aware of the dignity within ourselves. Our destiny is to be free to be who we are, to feel what we feel, and to live our lives in blessedness. ■■■

César Rebolledo González\*

# Recursion In Moral Mode Who Can Cast The First Stone On Social Networks?

“Maybe you meant recursiveness”

“Everything is recursive.” That answer closed the dialogue box on the screen and perpetuated an inescapable loop: any valuation you make will also be applicable to your own valuation and critique. The final point seems to me both frustrating and instructive; my female colleague G had underlined that my critique of prejudice in a journalistic piece was also moralizing: saying that something is bad is bad, and along that line of thinking, any argument becomes simplified until it is nullified in the web of the social media.

The notion of recursiveness (or recursion) comes from the world of computer science, and its definition seems to allude to programming processes and their shortcuts for the uninitiated. According to the common explanation, to understand the meaning of the term, you could evoke the meaning of words like “self-referentiality,” autopoiesis,” or “fractality.” Something is recursive if it can be explained using its own definition; if it can be reproduced and maintain itself based on a cycle of programming; if it induces and copies from a same database, although on a different scale.

The notion of recursiveness refers to repetitive cycles based on the same logic; cycles that, through processes



Gian Cescon / Unsplash.com

of induction, consecutively activate and order data and actions. If by this time you’re feeling confused about the technical meaning of the term “recursiveness,” let me offer you another definition from Google. In a simple search for the word “recursiveness,” you might find the answer, “Did you mean: recursiveness?” Humor is part of teaching the design of what are called ordination algorithms, whose simplifying logic starts from processes of basic induction. A large collection of memes exists that very creatively insists on underlining the closed nature of the formula: recursiveness is defined by itself.

Although alien to the field of computer science, colleague G’s response also has a tragic dose of sarcasm that may shed light on the apparent perpetuation of the conflict on the social media: while some intellectual voices consider it a given that we live in a polarized environment, others maintain that we have entered into a period of Puritanism. While some academics maintain that the Internet is a territory of discord, others emphasize the impossibility of dialogue in the digital framework.

In that complexity, “everything is recursive.” Peeping out of G’s sentence is perhaps that slight —or great—

\* Researcher at the La Salle University, Mexico; profesorrebolledocesar@gmail.com.

Why does everything seem recursive in the digital maze? Why do those certainties create so much bother in academia? If everything is recursive or relative, what is the meaning of dialogue in this, our present?

irritation generated in our academies by the racket of the social media. In a world where everyone talks, nobody listens; in a world where everyone shouts, nobody hears; in a world where every single person is right, they are all at the same time wrong. The absolutes in question are in consonance with the closed, binary nature of technological recursiveness. The prosthesis from which we look at the world is of a binary origin, and in that destination, our look upon the world would seem to suffer from bichromy.

“Relativism.” Another word that carries with it an accusation and accompanies G’s initial concern and that might help us to avoid a lament: “Everything is relative, nothing is absolute.” I remember particularly a high school philosophy class in which in one instant we visualized how the whole argument fell apart: If everything is relative, saying so is also relative. What is the place of sophists today? Can recursiveness be considered a form of sophism?

Let us rethink the sophist Protagoras (481-411 BC) and his affirmation that the world is made to the measure of he who contemplates it, and he who contemplates it in turn invents it. We are the measure both of what we believe to be true and of what we believe untrue; of what we believe exists and what we imagine is non-existent. Is our vision of the world self-referential? Are we the measure of all things? What is our idea of truth, of objectivity? Does calling an argument sophistry legitimize defending scientific truths to the death? Why does it bother us in academia that everyone can all be right on social networks?

## The Reversal Game

Journalist x is right when he denounces ignorance and negligent behavior by society with regard to the pandemic. I’m right in underlining his mistake when he generalizes and stigmatizes those who don’t look at the problem

as he does, or those who “don’t believe”—as he does—in scientific or institutional recommendations. My colleague G is right when she says that what I say can be reiterated in the reverse, that what I say contains a moral tautology, which I am condemning to a loop. So, are all the arguments correct? End of story? Dialogue over? From this point of view, recursiveness would seem to be the final argument. “The catastrophe of truth!” Do you like the title? Would you read that? Or would you prefer, “The Eclipse of Reason”? Or, I know: “The Era of Relativism!” I’m afraid to tell you that the proposition would not be alarmist, but a mere publishing marketing strategy. Actually, I find in the word “recursiveness” the possibility of unapologetically renewing our discussions about Truth, both in the socio-digital sphere and in the heart of our disciplines.

That is my hypothesis: according to the playful reversal principle, not only is the eclipse of Reason as a meta-narrative made evident—as defined by Jean-François Lyotard in *The Postmodern Condition* (1979)—, but something else also raises its head: a radical questioning of the authorities of knowledge, including our own. I think that in what we call polarization dwells a rebellion of autonomy for knowledge. If the institutions of knowledge are truly in crisis, it is not because technological loudspeakers have democratized—or relativized—truth, but rather because it is difficult for us to accept that Doubt as a principle of knowledge is not reserved exclusive to science.

The problem of our time is not recursiveness in and of itself or relativism, but the moralizing posture that we adopt when faced with it in the social sciences and the humanities. In the classroom, we are spurred by doubt, questioning; in the classroom, knowledge is always questionable. If academic knowledge advances it is because the Socratic method survives in the spirit of our universities. In this sense, the efforts against the supposed ambient relativism show us a glimpse of a selfish antagonism: How can you doubt me if I’m a scientist? How can you be convinced you’re right if you aren’t backed up by a degree?

## Morals Are Always Recursive

My neighbor E doubts everything, and he is not a scientist. He’d like to have been, but he didn’t go to the university. On the social networks, everything is distrust and bravado. They’re full of “buts” and disqualifications. They’re

always right, above all when the person on the other side of the screen shows his/her credentials, when he/she is trying to teach a moral lesson. For E, being right has always been a struggle, and more so now that he spends a great deal of his free time debating online about a wide variety of topics that come across his screen. How similar are G and myself to E? What degree of morality and closed-mindedness exists in our positions?

From the moral angle, it would seem that on the social media, we're all —men and women— summary objects and all —men and women— subject to accusation. The moral repetition on the social networks is as infinite as it is deafening. Every comment we publish activates, literally speaking, an invariable pattern of valuation (like-dislike, joy-anger, agreement-disagreement), but that is not due merely to the *sacred social media*; typical of our moral framework is dynamism, accommodation, recursion: to each human action corresponds a moral reaction, with or without technology.

In creation myths or cosmogonies, human life is created after destruction. In Christian Genesis, the transgression against heavenly mandate begins and closes the creation cycle, over and over again, whether because of sin, lies, hatred, violence, selfishness, or rancor. Divine justice (punishment) is the mark of the mythical rebeginning; this means that these kinds of narratives include a reiteration: the world is perpetually in a process of collapsing and being reborn.

To paraphrase Paul Ricoeur in *Evil: A Challenge to Philosophy and Theology* (1986), the gods tend to remake the world because once they create human beings, they invariably spawn moral dilemmas. According to this logic, we can say that morality is not only the central problem in creation myths, but it is also one of our problems in our technological uncertainty. The moral dilemma is always current. The world is a complex, dynamic construction of meaning, based on the cyclical reiteration of its moral principles. Every time human action—or a comment on social media— exists, a fissure opens up at our feet that threatens to widen. In that sense, morality is not synonymous with established values and customs in a specific society. Neither is it a matter of truths, but rather a perpetual adjustment, a negotiation of conflicts, an infinite reiteration subject to the circumstances of time and space. It is also not a space for opposing absolutes (fair/unfair; good/bad; truth/lie).

Therefore, despite the opposing opinions of some colleagues, whether men or women, to talk about a return to morality today does not mean that there is a resurgence of the values and customs of the past or a rise of conservatism against the kingdom of immorality. What we call “a return to morality” is nothing more than the social, day-to-day readjustment of the principles I mentioned above. The scandal lies in the fact that this becomes more and more visible and more interfered with. To paraphrase Gianni Vattimo in *Transparent Society* (1989), communications technologies make society more transparent. Technology, specifically digital technology, is what gives us this spectacular effect of moral dynamics. Today we are not only witness to an endless variety of human actions and forms of behavior, but also of human thoughts and fantasies that we assess from their performative angle, from the standpoint of their character as action.

In the confrontations on social media, what is at stake is the credibility of everyone, men and women, the nonsensical, the collapse of Truth (with a capital “T”). It is the alternation between heroism and monstrosity, between angel and beast, between wisdom and ignorance. This is where the fight between the morality of he/she who teaches lessons and the immorality of those who situate themselves, ironically, beyond good or evil, to teach lessons, as Nietzsche would say, materializes—or rather, digitalizes.<sup>1</sup> It is a classical problem of meaning that makes us return eternally to the moral question of the extrapolated absolutes: good and evil.

And it is worth saying: it can help us understand, using other words, what recursiveness is, the starting point of this article, or, rather, why everything seems recursive in the digital maze, why everything can be relative, why those certainties create so much bother in academia. If everything is recursive or relative, what is the meaning of dialogue in this, our present? What is the meaning of my debates, and my efforts (and those of G and of E) to make the world see that it is wrong, that its logic is flawed, contradictory, or just nonsense? What is the role we have as academics in a world already so full of truths? **MM**

▼  
Notes

<sup>1</sup> The author is referring to Friedrich Nietzsche, *Beyond Good and Evil* (1886). [Editor's Note.]



Aaraón Díaz Mendiburo\*

## Two Stitches Over and One Under Weaving Resistance with Hemp Thread For Good Living and Well-being<sup>1</sup>

“Potheads united will never be defeated!” “A conscientious user, not sick and not a criminal!” “4:20 assembly present and accounted for, until the green victory.” These are some of the slogans shouted in unison by a collective of men and women called the More Awareness and Less tv Cannabis Assembly. These voices give me goose bumps because they remind me of slogans used by other groups and movements like the LGBT community, first nations, students, farmers, teachers, and women, many of whose members have been disappeared, while others continued the struggle, and thanks to all of whom we now have a better life.

These slogans are shouted every day at around 4:20 in the afternoon in a space this collective has transformed over the past five months, located on Mexico City’s main and longest street, Insurgentes Avenue, very close to the Federal Commission for Protection against Health Risks

\* Researcher at the Center for Research on North America (CISAN),  
faraondiaz@yahoo.com.mx.  
All photos are courtesy of the author.

(Cofepri). When the time comes, this institution will be in charge of issuing licenses for production, research, and the prescription of marijuana for medical purposes.

The “occupy” or sit-in location brings together a spiritual, political, cultural, social, and economic movement to continue the cannabis community’s struggle. It includes people from a wide range of backgrounds, such as artisans, students, writers, artists, clerical workers, unemployed, and many others who see cannabis consumers from a very different perspective than the stereotyped and stigmatized views that have done so much harm to young people in Mexico and throughout the world.

The circumstances of my meeting with this group put me in a privileged position and gave me access to one of the protagonists in the debate on the legalization of cannabis in Mexico. My aim is to use ethnographic research to explore the complexities involved in the production, distribution, and consumption of this substance. This includes, for example, the sustainability of production; the importance of making women’s participation visible



The “occupy” or sit-in location brings together a spiritual, political, cultural, social, and economic movement to continue the cannabis community’s struggle.



as consumers, producers, sellers, or actors in other related activities; the creation of regulations that are neither restrictive nor simulations; market protection to the detriment of consumers’ and small producers’ rights; and using public policies to perpetuate the stigmatization and criminalization of certain sectors related to this culture and these practices.

My encounter with this collective became the starting point for the research I have recently initiated in the Center for Research on North America. I believe that, in the near future, when I do ethnographic research in Canada and the United States to explore entrepreneurs’ social responsibility in the cannabis industry, I will probably find some commonalities among the different groups involved.

So far, I have limited myself to carefully observing some of the assembly’s practices and listening to their stories. It is evident that it is building bridges, shaping events, forming communities, and eliminating barriers that separate them from others, in order to make marijuana visible as an option, not only for recreational, medicinal, and/or spiritual use, but also as a sustainable element for our planet, understanding sustainability as “the conjunction of three vertices of a triangle: economic equity, social justice, and environmental security.”<sup>2</sup> In this respect, marijuana’s very sustainability was one of the main reasons for its stigmatization and penalization. Given its many possible uses as a raw material for pro-

ducing fuel, fibers, food, medicines, paper, rope, and canvases, among other goods, in the eyes of the free market it was seen as a very competitive plant that could rapidly unseat others and therefore affect companies that traded goods such as paper, nylon, and, of course, medicines. “As a narcotic and sedative, cannabis was rivaled by substances such as chloral hydrate, paraldehyde, and barbiturates,”<sup>3</sup> which were already positioned in the market and whose producers were not going to accept a decline in their profits for any reason whatsoever. “Cannabis prohibition has always been about money, power, and the centralization of economic and political control. Hemp fuel and fiber are inexpensive to make and naturally decentralized. Small groups of people created the marijuana myth so they could profit from the expensive, capital-intensive petrochemical alternatives that dominate our political process and economy today. Hemp will decentralize our economic system and return wealth and control to the majority.”<sup>4</sup>

Precisely, returning wealth to the people, in terms of managing their own resources, creating awareness, building their autonomy, fighting for and defending their rights, and fighting against corruption related to cannabis are the main premises of this group, founded in 2014.

This place on the street, now taken over by these actors, can be viewed as a “space where the participants’ actions are projected, a platform where social energy and

information can unfold.”<sup>5</sup> This site is full of (re)significance for Pablo, one of the collective’s founders, who was born only a few blocks away. He speaks of his longing for the sense of community that existed a few decades ago, exemplifying it by mentioning that the people in the neighborhood knew each other, did things together, and the pace was slower and more harmonious. The location was occupied by the collective in order to lay the foundations of a cannabis civilization with clean, sustainable energy that will support local production and build diverse spaces for communication based on principles of fraternity, with no room for machismo. In this regard, Pablo points out how alcohol has contributed to strengthening the power relations and manifestations of violence that have caused havoc in our society.

As the interview with Pablo ends, Arturo approaches; he is another of the protagonists of the weft and warp of this space. He has knowledge, acquired in the streets since childhood, derived from the abuses of patriarchal power, which has left him with scars that have healed but not disappeared over time. Whenever there is a chance, he shouts out fiery language to all those who stop and listen. He entralls me with his profound analysis of the structural violence exercised by the state and the power mechanisms it uses to make people vulnerable and control them. I am amazed by his ability to construct an optimistic discourse and his eloquent display of the art of public speaking.

Arturo, welcomed by the assembly, expresses himself, states his purpose, seeks, explores, constructs, and deconstructs himself, collaborates, and interacts, connects with others through his own strengths and weaknesses, empowers, and is empowered. He channels all of this energy through the communication he establishes with all who, for whatever reasons, cross paths with him. Arturo says he was stepped on, spit at, ignored, and that he also has done harm. He does not want other people to endure this bondage, so his goal is to transform, to liberate through actions, through revolution, by means of a superior power emanated from God, in order to find balance. Finally, he shares with me that he would like to work with the Cannabis Assembly to build a green space full of plants to improve mental, physical, and spiritual health.

Ricardo is another person who arrives at the meeting, and he listens with attention as I state my objectives in writing this article. He spontaneously and enthusiastically

offers to participate in the interviews. Ricardo expresses himself freely and tells me things he has not told many others; on January 7, 2021, a little after 4:20 p.m., I recorded it all on my cell phone and, with his permission, I share it here.

Ricardo is one of the assembly’s youngest and most recent members. Just a couple of months have passed since he began sharing with the collective his stories, his time, and, of course, a few hits after finishing his shift. He says this helps him relax after work. He was invited to the occupied space by another member of the assembly who saw him smoking a joint, in front of a nearby building across the street, and told him that if he wanted to smoke, he should come over to the assembly because it was a safe place to avoid the risk of being bothered or extorted by the police. Ricardo didn’t hesitate a bit because he had already had various run-ins with the police, which he by no means wanted to repeat.

Ricardo is very happy to be part of this group, because the members all have different ideals; it is a very diverse group and he finds this enriching. He loves to be in a calm space, smoking together with people from different neighborhoods. He enjoys talking to everyone because they all share interesting stories, and the discussions enrich his view of things and give him a chance to connect with other people. He says marijuana is for people with good vibes and he feels that in this group. He feels that there is kinship and sharing. Like thousands of other young people in the world, he has had to face the consequences of the stigma and the corruption associated with marijuana, created by certain sectors and socially reproduced by various institutions and organizations worldwide. He relates his experiences in this regard:

Yeah, they nabbed you, but to take your money and whatever else they could. They even took away my cell phone and hit me two or three times. Since you’re young, 15, 16, or 17, you’re frightened. They instill terror. The police also parade you around; they take you to school, to the principal’s office. They do whatever they want; even though they only found a single joint on you, they’re just looking for a pretext to screw you. I think the last time, just about a month and a half ago, they wanted to plant more marijuana and other stuff on me. Two cops came dressed in black with no name badges or anything. They started hit-

ting me and they wanted to take away my phone. They'd already put me in the squad car, but my friend started to run and they went after him. Since they left the car door open, I was able to escape, but then I fell and another police car came. I got up and started running; it probably looked like I was a thief. I ran, and ran, and hid in a market. It was really bad.

Unfortunately, Ricardo's testimony is more common than one would think; the goal is to fight to keep this from happening over and over again. His youthful gaze reflects what he says to me with his words: "Even if I change jobs I want to keep coming here; I want to be a part of this. I want us to transform this space, with some really neat banners, make it a mini-park, a recreation area, with a statue of a marijuana plant. I want to help any way I can."

Vizuet, another member of the group, also wants to participate in the interviews. However, first we talked about his Mayan ancestors, spirituality, his liking for the practice of Jeet Kune Do, and the wooden sculptures he made some years ago. He spoke of his many trips in different dimensions, and, of course, the Cannabis Assembly, a space that makes him feel at home, that attracts people so they can exchange knowledge, experiences, dreams, and ideas. He says,

Ideas are what's most important, because that's where we begin to weave, from one idea to another, and another, and what it leads to is like a vast spider web made by many people and opinions; and the spider web becomes more and more perfect; a little more tightly woven and a little more visible, so you can define its propose; it's not just coming here to smoke. The idea is to come and talk, with a marijuana cigarette. Cannabis opens a world of different ideas for you. You can learn many things. The Cannabis Assembly is a point from which we can expand these ideas and maybe, someday, have various places like this one. The idea is to weave a cannabis family where we support each other and help people. We even help dogs; Bacha just arrived and we take care of her here. I'm here too. I lost my job and they're helping me. This is what we need, for people to be people, to have real feelings, not just material interests; people who can help each other, a place where consciousness reach-

es its highest level, where there are values, ethics, and where there can be natural, family coexistence.

Vizuet, like the others, sees the assembly as a space for communication, learning, artistic expression, and, of course, for inclusion. Though not many women are present, this is something they are working on. In fact, it was Mariana who, with her solidarity, opened the door for me to this point of view that I wasn't even aware of and that makes me vibrate in harmony and fills me with energy and dreams, by sharing part of her vast experience as a member of the assembly.

Mariana, who has been a consumer for half of her life, and for a few years now has been selling paraphernalia, began participating in the assembly some months ago, though she has been part of this struggle for about 15 years. It's a battle that is both social and legal, she says. "Familywise it's been hard; they changed their minds just a few years ago. Last year my mother finally agreed to take some drops with *Cannabidiol* (CBD) and now she's doing fine; she's noticed a change in her health. Legally it's also a struggle, even though the police aren't as tough on women as they are with men, anyway, they're still shit."

Mariana's participation in the group has come slowly and more as a paraphernalia provider so everyone can have a good smoke, good materials at great prices. She also shares products for the common good, without making a profit. Recently she has participated more actively in the organization, sharing her perspective on issues when she agrees and when she disagrees. In this respect she has had some confrontations with assembly members. Mariana is avid to participate and become more and more involved in the cannabis world, drawing from her other experiences. She has participated in other, women-only events, where she has expressed the importance of talking about more specific issues like cultivating the plant, sharing know-how, or taking a clearer stand as consumers. Mariana concludes with an argument that is highly relevant for understanding cannabis in different spaces:

I'd like the Cannabis Assembly to focus on defending consumers' rights more than those of producers or the industry. I think they should share knowledge. There are many talented people here who know a lot about growing, making extracts, and a lot of other

The location was occupied by the collective in order to lay the foundations of a cannabis civilization with clean, sustainable energy that will support local production.



things. I also wish there were more women. Since everything is centered here in Mexico City, whether the economy is good or it isn't, the perspective is always more opulent. I come from the State of Mexico, on the outskirts of the city. The issue of cannabis and women isn't a question of whether the dealer gives you more or not because you're a woman, like it is in Mexico City; it's more a problem of segregation, of women who are treated violently because people assume that since they consume drugs, or are with a group of men, they don't have to be respected. I'd really like it if everything the assembly is doing here could be replicated in the State of Mexico and other outlying areas.

Just as is the case elsewhere, the existence of these groups and territories makes us think about the importance of words, of solidarity, unity, and collective work in the struggle for rights, for breaking down stigmas, specifically in the case of cannabis, that have, on one hand, benefitted businessmen from various sectors, as explained above, and, on the other, have affected the lives of entire families for generations, belittling them to the point of taking away their dignity. We all have the obligation to build a truly just world where this nascent legal industry doesn't become rapacious in the way it operates and where collectives' voices will be heard by those

who design and carry out public policies. Including women is fundamental in this quest for social equity. "Women rolling joints are part of the struggle" and "Women pot-heads, united, won't be busted ever" are slogans chanted by groups like the Cannabis Network of Women Rolling Joints, Shaping Struggles, who are also building community along with so many others, both men and women. ■■

## Notes

- 1 This article was written thanks to the cooperation of people from the More Awareness and Less TV Cannabis Assembly. The "Arturo" cited in the article has chosen to be called that; it is not his real name. The others are the interviewees' real names.
- 2 María Eugenia Chirinos, Lizyllen Fernández, and Guadalupe Sánchez (2012). "Responsabilidad empresarial o empresas socialmente responsables," *Razón y palabra. Primera revista electrónica en América Latina especializada en comunicación*, no. 17, [www.razonypalabra.org.mx](http://www.razonypalabra.org.mx).
- 3 See Antonio Waldo Zuardi (2006). "History of Cannabis as a Medicine: A Review." *Brazilian Journal of Psychiatry* 28 (2): 153-157, <https://doi.org/10.1590/S1516-44462006000200015>.
- 4 Paul Stanford, "Hemp, Cannabis and Marijuana: What's the Difference?," in CounterPunch.Org, March 29, 2016, <https://www.counterpunch.org/2016/03/29/hemp-cannabis-and-marijuana-whats-the-difference/>.
- 5 Álvaro Bello, "Espacio y territorio en perspectiva antropológica. El caso de los purhépechas de Nurió y Michoacán en México," *Cultura-Hombre-Sociedad Cuhsó* 21, no. 1, 2011, <https://doi.org/10.7770/cuhsó-V21N1-art119>.